GOVERNMENT PERFORMANCE PROJECT

COUNTY GOVERNMENT SURVEY
INFORMATION TECHNOLOGY MANAGEMENT SECTION

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PLEASE REFER QUESTIONS TO:

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INFORMATION TECHNOLOGY MANAGEMENT

This section is designed to measure the extent to which your county has made effective use of information technology in the achievement of the county's strategic goals and objectives. This includes: meaningful data collection and analysis, incorporation of information technology into your county's various divisions, and capabilities of county employees to fully exploit the potential of information technology for increased productivity.

BACKGROUND TO THE GOVERNMENT PERFORMANCE PROJECT

Since 1996, under the auspices of The Pew Charitable Trusts, the Maxwell School of Citizenship & Public Affairs at Syracuse University, in partnership with *Governing* magazine, has rated the management performance of local and state governments and selected federal agencies in the United States. The project, called the Government Performance Project (GPP), is administered by the Maxwell School's Alan K. Campbell Public Affairs Institute.

The project aims to improve the understanding and practice of government management throughout the United States on the city, county, state, and federal levels. It evaluates the effectiveness of management systems by considering government performance in five categories: financial management, human resource management, information technology, capital management, and managing for results. Each category is addressed by a separate section in this survey. For each category, governments are evaluated based on this survey, interviews, and an analysis of published documents.

While the project highlights overall management capacity, it focuses on the role of leadership, the integration of the five categories, as well as the communication of government performance issues to the citizenry.

In 1998 the project studied and rated government performance of the 50 states and 15 federal agencies. The results were published in the February 1999 issues of *Governing* and *Government Executive*. The results were also widely reported by leading print, radio, and television media.

In 1999 the project evaluated government performance in the top 35 U.S. cities by revenue and of five federal agencies. These results were published in the February 2000 issue of *Governing* and the March 2000 issue of *Government Executive*.

In 2000 the GPP reevaluated the 50 states and the results were published in the February 2001 issue of Governing. This year the GPP will evaluate 40 county governments.

The Maxwell School will add the data collected to its clearinghouse of information and continue to expand this resource of government management practices. Ultimately, government entities will have the opportunity to learn from one another and exchange valuable information through the efforts of this project.

GPP CONTACT PERSON

For more information on the GPP, please visit our website at: www.maxwell.syr.edu/gpp. If you have any questions regarding this survey or the GPP in general, please direct your inquiries to Anthony Stacy, at gpp@maxwell.syr.edu or 315-443-9707.

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INFORMATION TECHNOLOGY MANAGEMENT EVALUATION CRITERIA:

1. Government-wide and department-level information technology systems provide information that adequately supports managers' needs and strategic goals.

2. Government's information technology systems form a coherent architecture.
   - Strategies are in place to support present and future coherence in architecture.

3. Government conducts meaningful, multi-year information technology planning.
   - The information technology planning process is appropriately centralized.
   - Government managers have appropriate input into the planning process.
   - Formal government-wide and department information technology plans exist.

4. Information technology training is adequate.
   - Information technology end-users are adequately trained to use available systems.
   - Information technology specialists are adequately trained to operate available systems.

5. Government can evaluate and validate the extent to which information technology system benefits justify investment.

6. Governments can procure the information technology systems they need in a timely and cost effective manner.

7. Information technology systems support the government's ability to communicate with and provide services to its citizens.

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DEFINITIONS OF TERMS USED IN THIS SURVEY:

Architecture: The overall structure of the information technology system, including the relationship between hardware, software, and data.

Chief information officer: An individual with responsibility for countywide coordination of the management of information technology.

Department: Any administrative subdivision or unit of government (also in some cases called a board, bureau, commission, department, etc.) having the primary purpose of executing some governmental functions or laws.

Geographic Information System: A computer system capable of manipulating data that is referenced according to its physical location.

Information Systems Development Methodology (ISDM): A generic, tailorable, scalable process that guides the high-level stages of computer applications development. In general, the process begins when the idea for a new application is first conceived and ends when the application is taken out of service. The ISDM provides a common framework of life cycle stages for discussion about the problem to be solved. It structures the development process and gives the project team a road map to follow. It provides a "preflight" checklist to assure that all the needed elements are addressed.

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INSTRUCTIONS FOR COMPLETING THE SURVEY ELECTRONICALLY:

This document is a Microsoft Word form. A form is a structured document with spaces reserved for entering information. This survey, containing check-boxes and fill-ins, can be viewed and completed in Word.

- *To check a box:* Use your mouse to move the arrow over the box you want to check and click once. To uncheck the box, click again.

- *To enter text in a fill-in box:* Move your mouse over the gray box. The arrow will change to a cursor. Click once to highlight the box. Begin typing. All fill-ins have unlimited capacity.

To enable electronic completion, the file has been password protected. Text can only be written in fill-in boxes. To provide comments on a question, include a separate page of comments with reference to the question number.

If you encounter difficulties completing the survey electronically, you may contact the project manager at (315) 443-9707 for troubleshooting assistance. The document can also be printed and filled in manually.

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PLEASE SUBMIT THE FOLLOWING DOCUMENTS AND INFORMATION WITH THE SURVEY:

(Note: *If these materials are available online, you may simply identify the URL at which they may be found.)*

☒ Government-wide information technology plan

☒ Some typical department-level information technology plans, if available

☒ Several typical Benefit-Cost Analyses

☒ Copies of published information technology policies and procedures

☒ Any studies or evaluations (such as performance audits, impact analyses, or benefit-cost analyses) that address the contribution of technology to your county

☒ Any independent council or auditor evaluations of your county's information technology systems

☒ Any organizational charts or diagrams of information technology systems and management structures

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PLEASE ANSWER THE FOLLOWING QUESTIONS ABOUT INFORMATION TECHNOLOGY MANAGEMENT IN YOUR COUNTY:

1. To what extent does your county have an information technology system that allows you to accomplish the following management functions? (*Please check the column that best describes the status of your IT system for each function.*)

	No IT system in place for this function	Formal planning for an IT system is under way	Partially operational IT system in place	Fully operational stand-alone IT system in place	System fully operational, but system is being replaced	System fully operational and integrated with other systems
a. Budgeting	☐	☐	☐	☐	☐	☒
b. Specialized financial reports	☐	☐	☐	☐	☐	☒
c. Financial accounting	☐	☐	☐	☐	☐	☒
d. Cost accounting	☐	☐	☐	☒	☐	☐
e. Fraud control	☐	☐	☐	☐	☐	☒
f. Payroll	☐	☐	☐	☐	☐	☒
g. Hiring	☐	☐	☐	☐	☐	☒
h. Managing human resources	☐	☐	☐	☐	☐	☒
i. Managing training	☐	☐	☐	☐	☐	☒
j. Procurement	☐	☐	☐	☐	☒	☐
k. Tracking capital projects	☐	☐	☐	☐	☐	☒
l. Tracking asset condition	☐	☐	☐	☐	☐	☒
m. Inventory management	☐	☐	☐	☐	☐	☒
n. Contract monitoring	☐	☐	☐	☐	☐	☒
o. Using performance data	☐	☐	☐	☒	☐	☐

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2. To what extent does your county's current information technology system serve as a tool to help accomplish financial management, human resources management, capital management, and managing for results? Please provide examples of the types of functions managers in each of these areas can perform as a result of the supporting information technology.

	Our information technology system is…				
	extremely helpful	**very** helpful	**somewhat** helpful	**not very** helpful	**not at all** helpful
Financial Management	☐	☒	☐	☐	☐
Examples:	Please see Comments and Attachments IT.2a.-1, 2, 3, 4.				
Human Resources Management	☐	☒	☐	☐	☐
Examples:	Please see Comments and Attachments IT.2b.-1, 2				
Capital Management	☐	☒	☐	☐	☐
Examples:	Please visit www.mcdot.maricopa.gov/PlanRptStud/pgmsys/tms.htm for detailed information and examples of our capital management systems.				
Results/Performance Management	☐	☒	☐	☐	☐
Examples:	Please see Comments and Attachments IT.2d.-1, 2, 3.				

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3. What is the level of integration of the information technology systems that support each management area listed below? Please provide examples of the types of functions managers can perform as a result of integration in each area.

	Completely integrated	**Highly** integrated	**Somewhat** integrated	**Not very** integrated	**Not at all** integrated	Check if integration is planned within 12 months
Financial Management	☐	☒	☐	☐	☐	☒
Examples:	Please see Comments for our integration plans. Attachment IT.3.-3 contains Report.Web reports. Question 4 addresses the level of integration between the financial systems and human resources.					
Human Resources Management	☐	☐	☒	☐	☐	☒
Examples:	Please see Comments for our integration plans. Attachment IT.3.-3 contains Report.Web reports. Question 4 addresses the level of integration between the financial systems and human resources.					
Capital Management	☐	☐	☒	☐	☐	☒
Examples:	Please see www.mcdot.maricopa.gov/PlanRptStud/pgmsys/tms.htm for examples of our Capital Management systems. An integration taskgroup has been launched by the Department of Finance to lead the global integration effort.					
Results/Performance Management	☐	☐	☒	☐	☐	☒
Examples:	Please see Comments. Please also see Attachment IT.3.-4, which describes the plans for MFR integration with the other systems.					

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4. Please describe the extent to which your county's financial and human resources managers have to rely on multiple information technology systems to obtain the information they need to make decisions, generate reports, or conduct daily operations. (For example, does your county's chief human resources officer need to obtain data from multiple information systems to support human resources management?)

The overwhelming majority of our financial and human resources managers use the Report.Web tool to fulfill their decision making needs. The tool supports a single point-of-entry to current and historical financial, personnel, and payroll data. All commonly-used mainframe reports have been modeled in the Report.Web tool. Report.Web takes mainframe reports and electronically "bursts" and publishes the reports on the County's Intranet, known as the Electronic Business Center (EBC).

In accordance with our IT Portfolio Management Strategies (see Question 13 – Comments) and our mindset of using innovation to maximize our legacy systems (see Question 3) we researched and investigated new Internet tools and technologies specifically to pilot the concept of an Intranet Administrative Systems Portal. The objective of our Administrative Systems Portal is to consolidate as much data as possible which, in turn, will minimize the number of different systems financial managers and other users need to access.

Report.Web facilitated the introduction of the Administrative Systems Portal. The Department of Finance pioneered our efforts by introducing the Report.Web tool two and a half years ago. The Human Resources department joined the Administrative Systems Portal this past year. Not only is the data all available on-line, it is stored in a "smart" format that allows it to be exported to spreadsheets and other analysis tools. End-users have been intimately involved in selecting the reports that have export formats.

BENEFITS

Completely eliminated the physical report distribution delivery timeframe, which averaged 5 days.

Data transfers occur automatically, without human intervention, from the legacy systems to Report.Web.

Significant savings in reduced hardcopy printing costs (approximately $50,000 savings annually).

The Human Resources department has completely eliminated hardcopy printing of its reports.

EXAMPLES

Attachment IT.4.-1 reflects the various reports currently available via Report.Web.

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Attachment IT.4.-2 contains examples of actual departmental downloads and reports generated from using Report.Web.

Attachment IT.4.-3 is the Report.Web User's Guide that was created to facilitate this project rollout.

Attachment IT.4.-4 is the Installation Guide that was created for the end-users.

OTHER SYSTEMS

Managers determine whether or not accessing multiple systems is required as part of their daily activities. The decision to access other systems is determined by the level of detail and urgency for "real-time data" that governs the manager's daily activities. As explained, Report.Web provides the data required by the majority of department managers. A few departments have developed small, department-specific systems to support their unique reporting and tracking needs. The Maricopa Department of Transportation (MCDOT), for example, has developed a job costing system to support the organization's mandated public works project reporting criteria. There is another large county department (600+ employees) that is completely eliminating its departmental financial system and making the conscious decision to use the current enterprise financial management tools.

FUTURE PLANS

The Administrative Systems Council is addressing strategies and options to integrate and incorporate as many of the commodities in the Integrated Administrative Systems Portfolio as possible in the next 12 months (see answer to Question 3).

5. Please describe the ways in which the current information technology systems in your county's departments serve as tools to help manage *programs*. (For example, how is information made available that permits managers to make day-to-day decisions in program execution?) Please provide three examples of valuable department-specific systems.

   The IT Governance Model (see Question 11 – Comments) grants departments the flexibility, within established guidelines, to leverage technology that will best fulfill the business and management requirements of the individual agency. As described in the answers to Questions 2-4, data from the enterprise systems is readily available via the systems themselves and Report.Web. Departments have either purchased or developed

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additional information technology systems to facilitate their program management requirements. The following agencies have developed premier systems to address and support their agency's needs:

1. Environmental Services: The Environmental Management System (EMS) currently supports the billing, permitting, inspections, emission inventories, and the complaint tracking business functions. In 1993, the lack of computer hardware and software were identified as a high priority problem via total quality management surveys. In 1996, the Environmental Services Department's strategic plan included the implementation of a new Information Management System in which financial resources, policy, department operations and staff could be aligned to achieve department goals. With each submittal of their Annual Operational Plans and Five Year Strategic Plans, Management has leveraged advancements made in the development of its integrated Environmental Management System (EMS) to set higher goals to improve the management and delivery of services. Attachment IT.5.-1 contains detailed information regarding the EMS system.

2. Maricopa County Juvenile Probation: Juvenile On Line Tracking System (JOLTS). JOLTS is the juvenile tracking system used to process juvenile information regarding delinquency, incorrigible, traffic, dependency, severance and adoption cases by Juvenile Probation, Court Administration, County Attorney, Public Defender, and the Clerk of the Court. Attachment IT.5.-2 contains detailed information regarding the JOLTS system.

3. Maricopa County Department of Transportation: MCDOT has developed four Transportation Management Systems. These systems assist MCDOT to analyze and measure all aspects concerning the performance of all County roadways. The four systems identify actual and potential problems concerning traffic congestion, safety, pavement conditions and bridge system needs. The four systems also help prioritize individual projects for consideration to be included in the County's five-year Transportation Improvement Program (TIP). Attachment IT.5.-3 Contains the Executive Summary for the four Transportation Management Systems. Detailed reports for each system can be found at http://www.mcdot.maricopa.gov/PlanRptStud/pgmsys/tms.htm. These systems have also been highlighted in the Capital Management Section of the Maricopa County GPP Survey Response.

6. Please describe the type and level of information technology infrastructure that your county has in place to carry out two-way transactions using the World Wide Web. Please provide all significant examples of transactions being carried out on the web.

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Maricopa County's initial electronic government efforts began in 1995 with the launching of www.maricopa.gov. Four crucial elements were identified and initiatives were launched to ensure those elements were put into place. Those four elements were:

1) A robust technology infrastructure

2) A fully dedicated IT development team for web applications

3) Purchasing "vehicles" for web-based transactions

4) Executive-level support and oversight

The "purchasing vehicles" are the P-Card Program and Credit Card Processing Services. Both elements are in place today. These items are discussed in detail in the response to Question 32, Financial Management Section, Part 3 Procurement, Purchasing, & Contracts. The details regarding these "vehicles" are not critical per se, the fact they do exist is tantamount to a successful electronic government environment.

The Executive-level support and oversight role is discussed in detail in the response to IT Section Question 11.

As a result of these efforts, in February 2001, the Gartner Group Electronic Government Practice, based upon criteria that include eGovernance, eArchitecture, eStrategic Planning, Internet site characteristics, Intranet site characteristics and Measurement, recognized Maricopa County as one of the best six counties nationally ready for Electronic Government.

Infrastructure

The County has deployed a substantial technology infrastructure to support interactive transactions via the Web. We currently provide many financial and informational two-way transactions and have plans in place to expand these capabilities. Consistent with our federated model of IT governance, the portfolio of transactions represents contributions from many departments. Each transaction described herein can either currently be conducted via the web or will be available in the near future.

The foundation infrastructure is our robust data network, comprised of 100MB switched Ethernet within the buildings. The high-bandwidth inter-building network runs asynchronous tranfer mode (ATM) in an auto-failover redundant path configuration. Primarily Cisco and Bay Networks equipment comprise the switching and routing equipment in use. To maintain reliable, 7x24 operations, the County deploys a dual-path, load-balanced presence on the public network.

The foundation technology for the County's Internet infrastructure is Windows NT and IIS running on fault-tolerant rack-mounted Compaq servers. Web content is stored in SQL Server tables, but it is spun out to XML files for performance reasons. The web servers display content pages and dynamically build the desired view (service or

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organization) by parsing the XML files. All web-based applications are developed in Active Server Pages (ASP) using Visual Studio.

The transformation of the maricopa.gov home page into a government services portal capable of processing our existing and planned transactional systems required the speed and flexibility of XML. The more data-intensive applications, such as the "Residential Parcel Information Lookup", use ASP pages to construct SQL queries that go directly against the SQL Server tables.

The next evolution of the County's Internet infrastructure is now being developed. To meet the availability requirements imposed by our transformation to Information Age Government, single points of failure are being eliminated wherever possible. We are currently acquiring additional web server hardware and load-balancing IP routers that will enable our transition to a "web farm" server model. By August 1, 2001 all traffic to the County's web site will be spread transparently across multiple servers, eliminating unplanned outages due to hardware failure, and planned outages due to hardware and software maintenance/upgrade.

Two-Way Transactions

Attachment IT.6.-1 lists examples of two-way transactional capabilities available through the official Website of the County, www.maricopa.gov. As a true government services portal, we have also included links to other governmental organizations that visitors to our site might assume are provided by the County (i.e., auto licensing), allowing for seamless transition. Those that are highlighted in yellow represent the most straightforward form of "two-way" in terms of a customer entering on-line data to complete a transaction.

Attachment IT.6.-2 is a chart that identifies existing transactions, those under development, those planned for the near future, and those that are most popular--based upon historical web "hits". The chart is a working document of the County's Electronic Government Council (see Question 11 - Comments).

7. What technology is in use to facilitate the sharing of information across county departments and between levels of government in cases where such information sharing would be useful for management? Please provide examples of cases where this information sharing has occurred. In particular, please highlight any new tools,

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technologies, and systems that your county uses or is planning to use (for example, “one-stop” data integration, consolidated networks, or enterprise architecture).

Please see Comments and Attachments IT.7.-1 through IT.7.-10.

8. What technology is in use to facilitate the sharing of information with citizens? Please provide examples of cases where this information sharing has occurred. In particular, please highlight any new tools, technologies, and systems that your county uses or is planning to use.

   Please see Comments and Attachments IT.8.-1 through IT.8.-5.

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9. Please rate the extent to which your county's information technology systems are directly involved in information exchange with citizens and departments in the following ways. (*Check as appropriate.*)

	No IT system in place to support this activity	Very limited IT systems to support this activity	Some IT systems to support this activity	Substantial IT systems support this activity	Very substantial IT systems to support this activity
a. Transmitting information to citizens about policy	☐	☐	☐	☐	☒
b. Receiving feedback from citizens about policy	☐	☐	☐	☐	☒
c. Transmitting information to citizens about services	☐	☐	☐	☐	☒
d. Receiving feedback from citizens about services	☐	☐	☐	☐	☒
e. Transmitting government financial data to citizens	☐	☐	☐	☐	☒
f. Conducting two-way transactions with citizens	☐	☐	☐	☐	☒
g. Conducting two-way transactions with vendors	☐	☐	☐	☐	☒
h. Transmitting information to county departments	☐	☐	☐	☐	☒
i. Receiving information from county departments	☐	☐	☐	☐	☒
j. Transmitting information to non-government agencies	☐	☐	☐	☐	☒
k. Receiving information from non-government agencies	☐	☐	☐	☐	☒
l. Transmitting information to state agencies	☐	☐	☐	☐	☒
m. Receiving information from state agencies	☐	☐	☐	☐	☒

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10. Please answer the following questions about Geographic Information Systems (GISs) in your county:

    a. Does your county have a GIS?

    - [x] Yes, we have a single countywide system.
    - [ ] Yes, some county departments have independent systems.
    - [ ] No, but development of a system is in progress for the county.
    - [ ] No, but development of a system is in progress for some county departments.
    - [ ] No, we share a system with a local municipality.
    - [ ] No, we share the state system.
    - [ ] No, we do not use GIS.

    b. If your county has a GIS, how useful would you say it is?

    - [x] Extremely useful
    - [ ] Very useful
    - [ ] Somewhat useful
    - [ ] Not very useful
    - [ ] Not at all useful

    c. If your county has a single countywide system, please identify the departments that use it and explain how departments contribute information to it.

The County has been actively using Geographic Information Systems since 1987. Our 14 years of GIS experience has led to the development of a nationally recognized GIS infrastructure that is widely used and accepted by many of our departments (Attachment IT.10c.-1 “Enterprise GIS Overview”). These departments have experienced the benefits GIS provides their missions, and have incorporated this into their business processes.

Supporting these departments requires a wide variety of information that is acquired from many sources, most importantly our own departments. We are fortunate to have the cooperation of all departments using GIS services to contribute their specific information into our GIS library for use by all requiring it. Regardless what

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department owns the information, it is delivered to the GIS library for all departments to use.

Examples of large departments using GIS and the contributions they make to our GIS library are (in alphabetical order):

Assessor: For the last two years the Assessor's office has been converting their paper-based parcel maps to an electronic format. The project involves over one million parcels and is targeted to be complete by the end of 2001. As completed this information is being transmitted to the GIS Portal for use by all departments, outside governmental agencies, and eventually the citizens of the County.

Elections: One of the responsibilities of this department is to maintain maps of all electoral boundaries within the County. By incorporating GIS technology into this function, complex redistricting is now completed with a fraction of the effort, and other departments readily share the information. The contribution of this information is used for Government-to-Government (G2G), Government-to-Citizen (G2C), and Government-to-Business (G2B) activities.

Emergency Operations Center (EOC): Under the initiative of the Geographic Information Officer (GIO) the EOC is using GIS to automate many of its emergency operations and is beginning to contribute information to the GIS portal. The contribution of this information is used for G2G, G2C, and G2B activities.

Flood Control: With a high degree of GIS integration in their engineering processes, a substantial number of functions at the Flood Control District use and develop data of a geographic nature. They are custodians of a wide variety of analyzed GIS data contributed to the GIS Portal, e.g., parcels, rain gauge, hydrology, flood plain, etc. The contribution of this information is used for G2G, G2C, and G2B activities.

Parks and Recreation: This department is using GIS to contribute to the documentation of County recreational facilities. This information is used by other departments in their business process and enhances the public's awareness of the recreational services available. The contribution of this information is used for G2G, G2C, and G2B activities.

Planning and Development: This department uses GIS technology to produce and maintain information on permitting, zoning, and city annexation for their business processes as well as for transmission to the GIS portal.

Sheriff's Office: This department is the newest member of the GIS family from a contribution standpoint. Select GIS related information is developed from their data and will be used to modernize the services they provide to the officers, other departments and the citizen at large. The contribution of this information is used for G2G, G2C, and G2B activities.

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MCDOT: This department uses GIS as a core technology to manage the enormous amount of information essential to the construction and maintenance of its transportation system. MCDOT had leveraged its extensive GIS experience to promote this technology into departments throughout the County. A variety of geographic data from MCDOT is used to spatially integrate departmental GIS efforts into a cohesive enterprise information clearing-house. This information is used for G2G, G2C, and G2B activities.

d. Please provide examples of the level and type of support the GIS provides to meet the needs of the county overall.

Our GIS is a substantial contributor to the County's mission through their support of enterprise and departmental initiatives and programs. GIS support has produced substantial monetary savings by assisting in the streamlining of internal business processes that result in a more effective and efficient of services to our citizens.

The County Geographic Information Officer (GIO) is responsible for the development and oversight of the GIS framework providing this support. Key components of this framework are:

The development and maintenance of the Master GIS database catalog;

The establishment and management of the GIS portal (a central data repository);

The development of standards-based GIS practices;

An enterprise-wide GIS Website with links to departmental homepages (under development);

Enterprise-wide e-Commerce data distribution, hot-linked from the County's GIS Website (under development);

The County GIS Technical Council, a regional group of government and utility GIS users; and

Ortho-rectified aerial imagery verified by data from MCDOT's Geodetic Densification and Control Survey (GDACS).

Examples of GIS integration into County business processes include the following:

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The GIS-based Roadrunner program, (see Attachment IT.14.-3) which provides a dynamic inventory of attributes for all County maintained roads, including surface types and maintenance schedules;

GIS-based hydrological and land databases provide comprehensive flood control project modeling and mapping;

GIS applications allow precinct and political jurisdictional boundaries to be dynamically altered and viewed using live data;

Conversion of paper parcel maps to GIS, and the web-enabled application of this data, gives the public access to property valuation and comparison information; and

GIS zoning coverage allows multiple front counter staff to simultaneously access data in order to provide faster, more accurate customer service in the permitting process.

e. Please provide examples of the level and type of support the GIS provides to meet the needs of individual departments.

Please see Comments and Attachment IT.10e.-1, which is a portfolio of GIS-generated displays produced by the MCDOT GIS team. These displays are indicative of the variety of information that is available on the GIS enterprise server. By pooling resources and ensuring that each department contribute information pertaining to their areas of expertise, a wealth of data is available to the entire community.

11. Please answer the following questions about how information technology personnel are organized in your county:

a. Does your county have a Chief Information Officer (CIO)?

☐ No ☒ Yes

b. If your county does not have a CIO, who is the highest-level official responsible for information technology management in your county?

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c. To whom does your county's CIO or the highest-level official responsible for information technology report?

Our CIO reports directly to David Smith, the County Manager.

d. What are this individual's major responsibilities?

As a matter of governance policy, the CIO is the lead technology officer of the County and is responsible for:

Providing strategic vision and resource deployment at the Enterprise-level; acting as change agent and principal integrator of the County's IT capability.

Defining the Enterprise-level architecture and facilitating the flow of information between County departments, outside organizations and citizens.

Managing the governance structure including: 1) developing Enterprise IT policy; 2) facilitating standards which provide direction and overall lowest total cost of ownership; 3) establishing security principles and guidelines; 4) developing and facilitating management of Communities of Interest; and 5) resolving issues between Communities of Interest and/or departments.

Encouraging funding models that facilitate infrastructure development and Community of Interest partnerships; acting as a consultant to senior management on Information Technology program proposals; partnering with the Deputy County Manager to facilitate a technology budget issue review as part of the annual budget development process.

Developing the IT infrastructure at the Enterprise-level and managing network security.

Coordinating Enterprise vendor relationships and assisting departments in optimizing vendor performance.

Partnering with Human Resources in conducting IT salary market surveys; developing and publishing the County Information Technology Position Reference Guide; consulting with technology officers and Human Resources on IT staff retention, recruitment, and compensation proposals.

Representing the technology interests of the County to parties external to the County.

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Providing the County Manager and Board of Supervisors with annual goals describing the infrastructure and operational plans for Enterprise-level information systems and technology.

Providing technical advice and support to the County Manager and Board of Supervisors; providing technology consulting services to agencies, departments or individuals on an as-requested basis.

Encouraging and making recommendations to County management for shared services and consolidated operations (e.g. GIS, data warehouses, data centers, etc.).

Reviewing technology-related items at the request of the Board of Supervisors.

The CIO may also convene, as necessary, select committees or oversight bodies to address Enterprise-level issues impacting project or fiscal technology governance.

e. Please explain the extent to which information technology management in your county is centralized (where a county department or office is responsible for making policy decisions on countywide acquisition and management of technology), decentralized (where this responsibility is delegated to the department level), or shared. On what basis is the decision to delegate management responsibility made?

Please see Comments.

12. We would like to understand the relative level of involvement of the various actors who perform key information technology management functions in your county. In each column below, please rank the level of participation of each actor on a scale of 1 to 5, where a rank of 1 indicates that a particular actor is *not involved* and a rank of 5 indicates that a particular actor is *very involved*.

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	Making policy about the design and use of IT systems	Developing IT strategic plans	Designing and developing IT systems and projects	Approving the procurement of IT systems and hardware	Implementing IT systems and projects	Overseeing the implementation of IT systems and projects
a. County board, council, or commission	3	2	1	5	2	2
b. Legislative committee(s)	0	0	0	0	0	0
c. Chief elected official	0	0	0	0	0	0
d. Chief administrative officer	5	3	2	4	2	4
e. Executive committee(s)	5	5	3	5	3	5
f. Chief Information Officer	5	5	3	5	3	5
g. Central county IT office	5	5	5	5	5	5
h. IT steering committee	5	5	4	5	4	5
i. Individual departments	5	5	5	5	5	5
j. IT end-users	4	4	4	4	5	4
k. External consultants	2	3	3	2	3	3
l. External vendors	1	1	3	2	3	3
m. Citizens	2	2	2	1	1	2

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13. Please answer the following questions about information technology planning:

a. Does your county have a countywide information technology strategic plan?

☐ No ☒ Yes ☐ In progress (*projected completion*: _____)

b. If yes, what time frame does it cover? 3 years _____

c. If yes, when was it last *formally revised*? MM/YR April 2001 _____

d. If yes, how frequently is the plan *reviewed*?

☒ At least every 6 months
☐ Annually
☐ Biannually
☐ Every 3 to 5 years
☐ Every 6 to 10 years
☐ Less frequently than every 10 years

e. If yes, which of the following components does it include? (*Please check all that apply.*)

☒ A vision statement
☒ A mission statement
☒ Specific core values
☒ Specific long-term goals (beyond 1 year)
☒ Specific short-term objectives (1 year or less)
☒ Specific performance measures for each goal
☒ Specific performance measures for each objective
☒ Specific benchmarks for each goal
☒ Specific benchmarks for each objective
☒ Clear assignment of responsibility for achievement of each objective
☒ Discussion of action plans designed to achieve each objective
☒ Discussion of key external factors that may affect achievement of each objective
☒ Other components (*Please specify:* Methodology of approach _____)

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f. Does your county have an overall strategic plan?

☐ No ☒ Yes ☐ In progress

g. Is there an information technology component to your county's overall strategic plan?

☐ No ☒ Yes ☐ In progress

h. What proportion of individual county departments has information technology strategic plans in place?

☒ 100% ☐ Over 60% ☐ 40-60% ☐ Less than 40% ☐ None

Please identify the departments that do a particularly good job at strategic planning.

ALL individual county departments with internal IT units have information technology strategic plans in place. The Information Technology Organization (see Question 11e Comments) reflects the scenario that not every County department has its own IT unit. We have chosen to consolidate and leverage the support of the administrative services departments (26 in total).

Strategic Planning Examples

Superior Court IT Strategic Plan 2002-2004	Attachment IT.13h.-1
Maricopa County Superior Court IS Strategy April, 2001	Attachment IT.13h.-2
ICJIS Strategic Business Plan	Attachment IT.13h.-3
Planning & Development (IT Plan & Business Plan)	Attachment IT.13h.-4

i. If individual county departments have overall strategic plans, what proportion have an information technology component to them?

☒ 100% ☐ Over 60% ☐ 40-60% ☐ Less than 40% ☐ None

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14. Does your county have a formal Information Systems Development Methodology (ISDM)? (Note: *For an explanation of what we mean by an ISDM, see the definitions at the front of this survey.*)

☐ No ☒ Yes If so, please describe it (***or provide relevant documentation***).

Please see Comments and Attachments IT.14.-1 through IT.14.-4.

15. Please answer the following questions about how your county evaluates any or all proposed hardware and software systems before they are procured.

a. How does your county systematically evaluate the anticipated *monetary benefits and costs* of any or all proposed hardware and software systems before they are procured? (For example, do you calculate return on investment, net benefits, cost-benefit ratios, or cost effectiveness?)

Through the formal Results Initiative Request (RIR) Process, the Office of the CIO and the Office of Management and Budget jointly evaluate IT investment proposals in terms of full life cycle cost taking the following into consideration:

Monetary Benefits:

• Committed labor savings (i.e. reduced headcount)

• Hardware and software savings (i.e. more cost effective platforms)

• Physical plant savings (i.e. less space requirement)

• Travel expenditure savings

• Increased revenue

Monetary Costs:

• Technology acquisition costs

• Temporary staff or consultants

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• On-going increase to base budget for maintenance

• Cost impacts upon other departments

• Telecommunications and infrastructure upgrade requirements

• Technical and end-user training costs

• One-time conversion cost

• Long-term effect of modifying or customizing vendor software

Please also see Comments.

b. How does your county systematically evaluate the anticipated *non-monetary benefits* of any or all proposed hardware and software systems before they are procured? (For example, do you examine improvements in service level, speed, or quality?)

Through the formal RIR Process, the Office of the CIO and the Office of Management and Budget jointly consider whether the proposal:

• Simplifies doing business with the County

• Speeds up and aligns work along true business processes

• Makes geographic distance irrelevant

• Improves critical decision making

• Enhances public perception and involvement

• Improves employee education and morale

• Organizes government in innovative or better ways

Please also see Comments.

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c. How does your county systematically evaluate the anticipated *non-monetary costs* of any or all proposed hardware and software systems before they are procured? (For example, do you examine new training burdens or temporarily diminished service levels as new systems are brought online?)

Through the formal RIR Process, the Office of the CIO and the Office of Management and Budget jointly considers whether the proposal:

• Impacts or necessitates Intergovernmental Agreements (IGA)

• Requires complex contract conditions or license agreements

• Requires that software be copyrighted by the County

• Deviates from any County-wide or Electronic Community standard

• Creates a defacto standard for new technology

• Creates a risk due to new technology which is unproven in a production environment

• Creates a risk to County network security

• Creates long-term dependency on any vendor in a high-risk profile including financial hardship or significant market downturn

• Creates general staff morale issues relative to outsourcing

Please also see Comments.

d. For what size purchases are these evaluations generally required? (That is, how big a project – in terms of dollar value or proportion of the county government affected – usually warrants this type of analysis?)

The Office of the CIO and Office of Management and Budget jointly review all IT RIR Requests, regardless of amount. The most rigorous scrutiny is applied to proposals greater than $25,000 or those which require a permament increase in the base budget.

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e. Who is responsible for making these evaluations?

Final evaluations are made by the Office of the CIO and the Office of Management and Budget.

16. Please answer the following questions about how your county evaluates any or all of its hardware and software systems upon full implementation.

a. How does your county systematically evaluate the *monetary benefits and costs* of any or all of its hardware and software systems after they have been operational for at least several months? (For example, do you calculate return on investment, net benefits, cost-benefit ratios, or cost effectiveness?)

As indicated in the submitted prefacing remarks to Questions 16a-16c, such an evaluation or study would be conducted as a result of an ongoing, forward-looking continuous improvement evaluation which occurred subsequent to a new system deployment. The focus of the study would not be on the technology per se, but would be upon improvement in the relevant monetary business metrics such as:

• Improvement in labor costs (i.e. personnel)

• Improvement in non-labor costs (e.g. systems, travel, materiel, physical space, etc.)

• Improvement in transaction costs

• Improvement in revenue collection

Observation of these business metrics would then trigger the next steps to be taken regarding information technology.

b. How does your county systematically evaluate the *non-monetary benefits* of any or all of its hardware and software systems after they have been operational for at least several months? (For example, do you examine improvements in service level, speed, or quality?)

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Having been initiated for the reasons outlined in Question 16a, the focus would be upon the relevant non-monetary business metrics such as:

• Improvement in true business process or workflow

• Improvement in customer convenience

• Improvement in decision-making

• Improvement in public perception and involvement

• Improvement in employee education and morale

• Improvement in government organization

• Improvement in system performance (technology)

Again, observation of these business metrics would trigger the necessary follow-on steps to be taken regarding information technology.

c. How does your county systematically evaluate the *non-monetary costs* of any or all of its hardware and software systems after they have been operational for at least several months? (For example, do you examine ongoing training burdens?)

Consistent with a continuous business improvement perspective, evaluation of the non-monetary costs associated with a new system would be focused upon long term business impacts to be solved for (versus interim migration or conversion issues). Such potential impacts would include:

• Increased information or process dependencies between agencies

• Requirements for new governance structures or communication mechanisms

• Access to legacy data or information in old formats

• Need for effective working relationships with new external business partners

• Role ambiguity due to middle-management or staff position changes

• Potential re-design of IT organization

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An example of a post-implementation analysis was a study commissioned by the Office of the CIO regarding the Justice Information System (JIS) Technology Organization (Attachment IT-16.-1). The purpose of the study was to discern what organizational design issues were present as a result of their system migration activities. The outcome of this study was a change in leadership and a refined organizational model.

d. Who is responsible for making these evaluations?

Consistent with the concept of continuous evaluation and improvement, several parties play a key role in the review of such activities from a business performance perspective. Depending upon the area and scope, they may include one or more of the following:

- Citizen Oversight Committee
- Electronic Government Council
- Executive Leadership – for Enterprise-wide Systems
- Electronic Community Leadership – for multi-agency Electronic Communities
- Department Management
- Office of the CIO
- Office of Management and Budget
- Outside Consultants – at the request of any of the above

One of the key aspects of implementing a County-wide MFR program (with standardized measures and benchmarks) is that each of the above organizations would have on-line access to the same business performance data.

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e. How often does your county formally evaluate benefits of fully operational hardware and software systems? (*Please check one.*)

- ☐ Semi-annually
- ☒ Annually
- ☐ Biannually
- ☐ Every 3 to 5 years
- ☐ Every 6 to 10 years
- ☐ Less frequently than every 10 years
- ☐ Only once (upon initial implementation of the system)

f. Please explain how these evaluations are used in your county's information technology planning process.

Please see Comments.

g. What happens if your county discovers that a system has not met expectations with regard to costs and benefits?

Please see Comments.

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17. Please answer the following questions about how the procurement process for major hardware and software systems (i.e. *not* off-the-shelf items) works in your county.

a. Are these procurements centralized? (*Please check one.*)

☒ Handled mainly at the county level

☐ Handled mainly at the department level

☐ Handled jointly by the county and departments

If this varies, please describe how.

b. Are front-line managers and end-users formally involved in the procurement process?

☐ No ☒ Yes

If so, please describe how.

The procurement process, by its very nature, is inclusive because the centralized procurement function depends upon the requesting epartment and end-user to assist in all phases of the procurement processes; especially: the definition of requirements and functionality for the preparation, analysis, review, selection, and award recommendation.

c. How long does it usually take to write Request For Proposals (RFPs) for major *countywide* hardware and software systems?

☒ Less than 6 months

☐ 6 months to 1 year

☐ Over 1 year

d. How long does it usually take to write Request For Proposals (RFPs) for major *departmental* hardware and software systems?

☒ Less than 6 months

☐ 6 months to 1 year

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☐ Over 1 year

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e. What does the procurement process for major hardware and software systems involve? (*Please check all that apply.*)

☒ Formal competitive bidding

How long do procurements using formal competitive bidding usually take (from approval of the proposal to the beginning of roll-out/implementation)?

☐ Less than 6 months
☒ 6 months to 1 year
☐ Over 1 year

☒ Negotiated competitive bidding

How long do procurements using negotiated competitive bidding usually take (from approval of the proposal to the beginning of roll-out/implementation)?

☒ Less than 6 months
☐ 6 months to 1 year
☐ Over 1 year

☒ Negotiated non-competitive bidding

How long do procurements using negotiated non-competitive bidding usually take (from approval of the proposal to the beginning of roll-out/implementation)?

☒ Less than 6 months
☐ 6 months to 1 year
☐ Over 1 year

☐ Other (*Please describe:* _____)

How long do procurements using this process usually take (from approval of the proposal to the beginning of roll-out/implementation)?

☐ Less than 6 months
☐ 6 months to 1 year
☐ Over 1 year

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18. Please answer the following questions about how the procurement process for small commodity items (such as off-the-shelf PCs and software) works in your county.

a. To what extent is your county able to use master contracts for the purchase of small commodity items?

☐ Not at all ☐ Occasionally ☐ Sometimes ☒ Usually ☐ Always

b. To what extent is your county able to use state contracts for the purchase of small commodity items?

☐ Not at all ☐ Occasionally ☒ Sometimes ☐ Usually ☐ Always

c. To what extent is your county able to use joint city/county contracts for the purchase of small commodity items?

☐ Not at all ☒ Occasionally ☐ Sometimes ☐ Usually ☐ Always

d. If your county uses master contracts, what does the award of these contracts involve? (*Please check all that apply.*)

☒ Formal competitive bidding

How long does the award of a master contract usually take?

☒ Less than 6 months
☐ 6 months to 1 year
☐ Over 1 year

☒ Negotiated competitive bidding

How long does the award of a master contract usually take?

☒ Less than 6 months
☐ 6 months to 1 year
☐ Over 1 year

☐ Negotiated non-competitive bidding

How long does the award of a master contract usually take?

☐ Less than 6 months
☐ 6 months to 1 year
☐ Over 1 year

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☐ Other (*Please describe:* _____)

How long does the award of a master contract usually take?

☐ Less than 6 months

☐ 6 months to 1 year

☐ Over 1 year

e. If your county does not use master contracts, please explain how the purchase of small commodity items is accomplished.

Please see Comments.

19. Please answer the following questions about your county's information technology project tracking process:

a. Which of the following best describes the process your county uses for tracking the implementation/roll-out of any or all information technology projects after their approval?

☐ We do not have a formal information technology project tracking process.

☐ Information technology projects are tracked at the department level only.

☐ Information technology projects are tracked at the department level, with an informal process at the central level.

☒ Some information technology projects are formally tracked at the department level, and some are formally tracked at the central level.

☐ Information technology projects are tracked almost entirely at the central level.

b. Please describe your project tracking process. In particular, how does your county track and report on information technology project delays and cost overruns? Who produces these reports, who uses them, and how are they used?

Please see Comments and Attachments IT.19.-1 and IT.19.-2.

IT.19.-1 represents an example of project tracking at the Electronic Community level.

IT.19.-2 represents an example of project tracking at the Department Level.

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20. Please answer the following questions about reporting on information technology:

a. How does your county track and report on information technology service levels? Who produces these reports, who uses them, and how are they used?

Please see Comments and Attachments IT.20a.-1 through IT.20a.-6.

b. How does your county track and report on costs for information technology commodities (such as phones, personal computers, and email)? Who produces these reports, who uses them, and how are they used?

The County, through a portfolio of vehicles, tracks and reports the life-cycle costs of its IT commodities. The financial details relating to the acquisition of all IT commodities and their asset numbers are maintained by our core administrative systems. Each department, consistent with the federated approach of government, tracks life-cycle cost of personal computers, printers, software, and peripherals purchased by or for them.

The majority of departments (20) use a "total PC management" package named Altiris, originally developed by Compaq for use with their PCs. Now a private company, Altiris provides us with the ability to automate many PC tasks including OS installation and configuration, software installation, maintenance and asset tracking. Associated executables are installed on each desktop PC that communicates system information back to the server every few seconds. Reports are generated monthly using Crystal Reports to assist managers in the their planning and equipment refresh programs.

The cost of all electronic mailboxes on the central system are reported monthly, on a “cost per mailbox” basis. This “cost per” figure is derived by compiling all operational and maintenance costs and dividing it by the number of boxes. As one

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of our performance metrics for MFR, reports are generated monthly by EBC and distributed to all departments.

The cost associated with all telephones, pagers, and cellular devices are tracked and reported by our Telecommunications Department. Reports are issued monthly to all departments, detailed to the specific device for them to use in monitoring their costs. Specific reports issued are Cell Phone and Pager Analysis by Department, Cellular Usage and Rate Plan Analysis, and Cellular Costs Per Minute. Two areas that have benefit from these reports are:

Long Distance Charges

We have been able to substantially reduce our cost per minute charges after analyzing the data from our Phone and Pager Analysis reports. By leveraging the information obtained in these reports, the new contract reduced our basic long distance cost costs by 68%. This represents a minimum saving to the county of $100,000 annually.

Cell Phone Charges

Monitoring cellular phone cost has allowed us to develop a program that matches phone usage to various plans within the provider's contract. From the Cellular Usage Rate Plan Analysis report, we are able to identify all phones that under or overuse their contracted minutes, then automatically switch them to the appropriate contract for their actual use.

Since introducing this program in May of 1999, we have increased the number of cell phones supported from 810 to 1,324 units at an annual cost increase of $4,000 ($59,000 vs. $55,000). This represents a substantial increase in the effective use of cell phones in the delivery of services with minimal cost associated to it.

Please see Attachments IT.20b.-1 through IT.20b.-3.

21. Please answer the following questions about standardization of information technology:

    a. To what extent are the following components of your county's information technology system standardized? (*Please check as most appropriate.*)

	Formal, written	Informal, *de facto*	No standards

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	standards in place	standards in use	
Software packages	☒	☐	☐
Desktops	☒	☐	☐
Mainframe	☒	☐	☐
Stand-alone computers	☒	☐	☐
The server environment	☒	☐	☐
Networks	☒	☐	☐
Security protocols	☒	☐	☐

b. If your county has either formal, written standards or informal, *de facto* standards for any of these components, to what extent is each compliant with the existing standards? (*Please check as most appropriate.*)

	Extremely compliant	Very compliant	Somewhat compliant	Not very compliant	Not at all compliant
Software packages	☒	☐	☐	☐	☐
Desktops	☐	☒	☐	☐	☐
Mainframe	☒	☐	☐	☐	☐
Stand-alone computers	☒	☐	☐	☐	☐
The server environment	☐	☒	☐	☐	☐
Networks	☒	☐	☐	☐	☐
Security protocols	☒	☐	☐	☐	☐

c. How are the standards enforced and by whom?

The Roles

The IT Governance Model, as described in Question 11e, also applies to the arena of IT Standards and defines the key players and their respective roles. The 3-Tier IT Governance Model applies as follows:

Tier 1: The OCIO is responsible for establishing County-wide standards. Attachment IT.21.-1 reflects various IT News Flash Bulletins issued by the CIO addressing IT Standards issued over the past several years.

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Tier 2: The various electronic communities define their respective community standards within the spectrum defined by the CIO. Attachment IT.21.-1 is the County's Integrated Architectural Reference Model and presents a graphical portrayal of the various components of our enterprise architecture. These standards are forwarded to the OCIO for inclusion into the Maricopa County Architectural Plan (see Attachment IT.21.-2), the Maricopa County Technology Roadmaps (see Attachment IT.21.-3) and the IT Master Plan (see Attachment IT.13.-1).

Tier 3: Individual departments are given latitude within the boundaries established by the CIO and applicable Electronic Communities.

Standards Establishment

IT standards are derived and established via collaborative exercises. The CIO's preference is to use a high-level marketing approach instead of declaring standards in isolation. The high-level marketing approach is two-pronged: 1) facilitate discussions amongst technologists to achieve voluntary buy-in, and 2) mentor the County business leaders to increase their understanding of IT management practices and promote partnerships between their departments and the OCIO.

Tier 1: The OCIO's Enterprise Architect conducts an annual Technology Roadmaps Review. The process consists of numerous workgroup sessions, (cross-County IT representation) to discuss, review, and derive the standards that are reflected in the Technology Roadmaps. Workgroups average 8-9 people for each environment. Once the roadmaps reach a final draft stage they are presented to the CIO for review. The CIO's comments are incorporated and then the draft roadmaps are emailed out to the IT Leadership for a final round of review. The Technology Roadmaps are finalized, published and posted on the Electronic Business Center (the County's Intranet), under the "Technology World" website for easy access.

Tier 2: The Electronic Communities identify, develop and determine their standards either via internal workgroups conducted by the IT subcommittee, with oversight by the COI's business leaders, or by contracting with external IT subject experts. The Integrated Criminal Justice Information System (ICJIS) project best reflects the County's mindset. The County contracted with outside experts to identify and establish the standards required for a successful implementation from the very beginning of the ICJIS project. Attachment IT.7.-8 is the complete Target Convergence Architecture Plan for ICJIS & JLE Departments facilitated by Emerald Solutions. This document reflects the standards proposed for the County's ICJIS and Justice and Law Enforcement communities.

Tier 3: The departments establish their own standards for workstations, printers, wireless devices, etc., using the parameters of the Technology Roadmaps.

Standards Enforcement

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Not surprisingly, the preferred enforcement method focuses on re-enforcement of positive benefits instead of heavy-handed punishment. Discussion and information sharing have been the non-confrontational means of enforcing standards. The County takes a firm position regarding standards adherence.

Enforcement is now being monitored by three key players: the OCIO, Materials Management, and the Office of Management and Budget (OMB). The OCIO and the procurement department, Materials Management, have partnered to communicate IT standards and trends that are preferred by the OCIO's office. Their collaboration occurs as part of daily business operations. The OCIO promotes the use of the various IT procurement vehicles to maximize cost savings. The OCIO has facilitated a number of meetings with our procurement specialists and IT leaders to discuss and resolve issues. If a County department issues a Request For Proposals, the OCIO is contacted, either by the County department or Materials Management for consulting services.

Another example of the OCIO's level of influence is the fact that the Board of Supervisors has declared that all technology-related agenda items will be reviewed and approved by the OCIO prior to the agenda item appearing on the formal meeting notice. The review activities occur on-line via the County's Agenda Central workflow application (see Question 27 Comments). The third type of enforcement activities occur during the annual budget preparation/submittal process. The process was discussed in great deal in the response to Question 15. See Preface to Question 15 for examples of the documentation required prior to technology requests being reviewed and recommendations being made.

At the Electronic Community level, standards are enforced by promoting communication in their IT subcommittee activities, project briefings being given to the business leaders or oversight committees, and project status reports being forwarded to the CIO and other Executive County leaders.

EXAMPLES

The following represents a number of examples in which circumstances required the establishment and implementation of standards quickly and across the County.

1997 – County-wide Anti-Virus Software Standard

The County took advantage of an exceptional financial opportunity by checking the horizon and noticing a developing default McAfee anti-virus software base. The OCIO's office took the initiative and obtained a Board-approved sole source agreement for McAfee anti-virus software, leveraging all the planned McAfee software purchases for that fiscal year. This initiative was completed in less than 90 days. The anti-virus software is changing this year, due to the changing technology environment and maturing anti-virus protection needs at the County. Attachment IT.21.-4 contains examples of the Anti-Virus Announcement and other examples.

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1997 - E-mail Records Retention & Disposition (RR&D) Schedule Standards & Policy

The County encountered its first inappropriate use of email incident in mid-December, 1997. The incident surrounded the tone (flame-mail) and volumes of email of a senior manager. While the email account review was underway, the OCIO focused on ensuring the County had the tools and processes in place to avoid a repeat of the situation. A County-wide email policy was drafted and adopted, requiring written employee acknowledgement of the email policy. In addition, a PC/LAN taskforce was charged with identifying the technology requirements and parameters for email and electronic records retention and disposition schedules. The taskforce developed a draft RR&D Schedule within two weeks. The draft RR&D Schedule addressed retention requirements for email records, electronic calendars, electronic copies of formal communications, voice mail messages, etc. The draft was approved by the Arizona State Department of Records Management within a week. The RR&D schedule was immediately adopted by Maricopa County and all technology departments revised their backup system policies and procedures to support the approved schedule. The initial RR&D Schedule has become part of the Model Standardized RR&D Schedule for County Officials and Agencies, published by the Arizona Department of Library, Archives and Public Records. Attachment IT.21.-5 contains examples of the aforementioned RR&D schedules.

1999 MS Conversion Project

The Justice and Law Enforcement Agencies in the JLE Electronic Community agreed to migrate or convert to the County's standard office suite software tool. This massive conversion project was completed within a single fiscal year. Attachment IT.21.-6 contains meeting agendas and meeting minutes reflecting the project updates delivered to the electronic community business leaders (MCJUSTICE) and technology subcommittee (JaLET).

Network Security Improvement Program

Beginning two years ago, Telecommunications instituted a process by which all County servers accessible from the Internet are audited periodically for conformance with established security best practices. The audits are performed under contract with Phorge - a consulting firm specializing in enhancing network security. Working together, Phorge and Telecommunications staff members documented and published approved server configurations and "patch" application requirements. A Phorge consultant works with the individual LAN managers to ensure the highest-possible server security. Following an on-site audit, Phorge issues a 'pass' or 'fail' grade for the server. In the instance of a failed audit, specific recommendations are issued that will allow the server to be brought into compliance.

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Only servers that pass their audit are permitted Internet access through the County firewall. On a random schedule, Phorge returns to each server annually and conducts a follow-up audit. Phorge has also developed an on-line security alert system which notifies all system administrators of new security issues and recommended patches.

These network security standards and associated enforcement measures have been established not only to protect those servers with Internet access, but also all the remaining servers on the County data network. By virtue of sharing a network backbone, all servers are potentially vulnerable to being "hacked" from the outside if an Internet-connected server is compromised.

2001 Technology Desktop/Server Leasing Program

In 2001, OMB, the Department of Finance, and the OCIO announced a new desktop/server leasing program. This program was discussed during the budget preparation process and a formal memo was issued on April 27. The program will be launched July 1, 2001, at the start of the new fiscal year. Attachment IT.21.-7 contains the memo and a copy of the open job posting for the technology coordinator. This is another example of how quickly progress is made in Information Technology.

d. Please identify any major independent nonstandard systems that exist in your county and explain the extent to which you believe these systems cause inefficiency.

The County has worked rigorously to standardize its electronic mail systems from 11 separate systems in the 1990's into a single, common platform, which is Microsoft's EXCHANGE. The only exception up until now, the Maricopa County Attorney's Office (MCAO), had chosen to remain non-standard on Novell's GroupWise platform.

Interoperabilities between the two systems prevented County Attorney employees from leveraging such time/money saving features as setting appointments, sharing public folders, sharing contacts and tasks, and work collaboration from being used and/or realized between County Attorney employees and the rest of the County. The dissimilar systems have increased the cost of providing and maintaining electronic mail and scheduling to the County. Additionally, special gateway software had to be purchased to maintain a minimal level of e-mail connectivity between the two systems. This software requires additional hardware and labor to

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maintain. We are quite pleased to report, however, that in mid-May 2001, the MCAO agreed to migrate to the MS EXCHANGE platform within the next fiscal year. The entire County will then be on one standard.

e. How easily can individuals in different departments communicate with each other using email and email attachments?

☒ Very easily ☐ Fairly easily ☐ Not very easily ☐ Not at all easily

f. Is ownership and management of telecommunications in your county centralized?

☐ No ☒ Yes

If not, who controls the telecommunication system?

g. To what extent is the management of telecommunications and data integrated in your county? (*Please check one.*)

☒ Highly integrated ☐ Somewhat integrated ☐ Not very integrated

22. Please answer the following questions about training programs offered to end-users regarding the use of information technology:

a. Is training for end-users mandatory?

☒ Usually mandatory ☐ Sometimes mandatory ☐ Usually voluntary

b. How frequently are end-user training programs offered?

☐ Daily ☐ Weekly ☒ Monthly ☐ Annually ☒ On demand

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c. What percentage of employees participate in end-user training programs each year? (If training is provided via self-paced computer software applications, this refers to the percentage of employees who actually complete such programs.)

☐ 0-25% ☐ 26-50% ☒ 51-75% ☐ 76-100%

d. Are there any minimum training standards or requirements for end-users?

☒ Usually ☐ Sometimes ☐ Rarely

e. Who usually conducts end-user training?

☒ External consultants
☒ Product vendor
☒ Local college or university
☒ County's central information technology office or department
☒ Other (*Please specify:* County employees, known as Adjunct Faculty _____)

f. Who pays for end-user training?

☒ Central county office
☒ Individual department
☐ Individual employee

g. How does Information Technology training vary for contract employees, if any?

Training for contract employees is made at the department level. There is not a specific policy excluding "contract employees" from receiving training.

Please see Comments.

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23. Please answer the following questions about your county's dedicated information technology staff (employees whose job is the management, operation, or maintenance of information technology):

a. How many dedicated IT staff persons are employed by your county in total (including both those in the central office and in the departments)?

Total permanent, full-time employees: 400

Total permanent, part-time employees: 50

Total temporary, contingent, or dedicated contract employees: 25

b. Is training for dedicated information technology staff mandatory?

☒ Usually mandatory ☐ Sometimes mandatory ☐ Usually voluntary

c. Are there any minimum training standards or requirements for these staff?

☒ Usually ☐ Sometimes ☐ Rarely

d. How often are training programs offered for dedicated information technology staff?

☐ Daily ☐ Weekly ☒ Monthly ☒ Annually ☒ On demand

e. What percentage of these staff participate in training programs (including through self-paced computer software applications) each year?

☐ 0-25% ☐ 26-50% ☐ 51-75% ☒ 76-100%

f. Who usually conducts training for dedicated information technology staff?

☒ External consultants

☒ Product vendor

☒ Local college or university

☒ County's central Information Technology office or department

☐ Other (*Please specify:*

_____)

g. Who pays for training for dedicated information technology staff?

☒ Central county office

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☒ Individual department
☐ Individual employee

24. Please explain the extent to which your county outsources information technology systems, projects, or services.

Maricopa County leverages outsourcing across a broad spectrum of service models which include:

Complete business process operations

Applications service provider (ASP) functions

Equipment maintenance

Consultive services

Technology services

Contract personnel

An example of each of these is provided below:

Example: Complete Business Process Operations

In September 1995, the County contracted with HBO & Company to outsource the entire administrative operations of the Health Care System (including the County Hospital and Family Health Centers). This included the transfer of all related technology assets and personnel. The objective was to partner and share in the risk of delivering mandated services. The technology component was developed and project-managed by the Office of the CIO. The results of this engagement have been outstanding with substantial financial benefit to the County.

Example: Applications Service Provider

In early 2001, Maricopa County contracted with PDS for the entire IT provisioning of a new employee benefits system. The system is hosted from the PDS operations site in Blue Bell, Pennsylvania and is presently being used by the Human Resources Department.

Example: Equipment Maintenance

In 1997, an analysis of PC/LAN maintenance costs was conducted which compared the total cost of internal maintenance to private sector proposals. The analysis indicated that

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outsourcing would be cost effective and would provide efficiencies in the delivery of services. On behalf of all County departments, an enterprise-wide contract was established with Sentinel Technologies for support of selected desktops, servers, laptops, printers, and other peripheral devices. Under the agreement, departments are offered two options of service: monthly fee or time and materials. Over the past 4½ years, the contract has proven to be better than anticipated, and the quality of service has been highly-rated by our PC/LAN managers and their customers. Recently, a decision has been made to extend a new Request for Proposals (RFP) when the current contract expires in August, 2001.

Example: Consultive Services

Maricopa County regularly engages IT consultive services at two different levels: recurring and ad hoc.

For recurring services, the County contracts with Gartner Group at their highest level (Advisory). This provides access to an extremely broad and deep array of technology resources from the pre-eminent IT industry experts. Resources are available on-line and through highly specialized consultants in every business process and technical area, most recently including e-Government.

For ad hoc services, the County routinely contracts with a wide variety of specialized IT consultive services through bid or RFP. For example, during the past two years, there have been several comprehensive studies conducted that have been instrumental in guiding our Justice and Law Enforcement (JLE) and Electronic Procurement System (EPS) activities. These included:

Copeland Information System Strategy Study – to provide guidance in establishing an electronic information exchange strategy between the Clerk of Court, Superior Court, and other law enforcement agencies. The recommendations of the study were adopted into the County Integrated Criminal Justice Information System strategy.

Gartner Electronic Procurement System Study – to provide guidance and RFP development for a new County eProcurement System. Gartner was awarded a contract to complete a full analysis of our current system and to develop a plan for procurement and implementation of a new system.

Example: Technology Services

During the past eight years, the Telecommunications Department has outsourced the cable and fiber installation of the County network to ACS Dataline. In doing so they have been able to accommodate the rapid growth of network services while meeting the often unexpected needs of their customers in terms of moves, adds and other changes.

Example: Contract Personnel

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For purposes of ongoing access to a pool of IT specialists at pre-established rates, Maricopa County has established a County-wide Information Technology Consultant Contract—with an innovative twist. To facilitate effective communication and encourage competition among the many IT Consulting vendors, the County developed an IT Specialist Extranet. We leveraged our robust web and groupware infrastructures to develop a solution for soliciting quotes for consulting services.

When consulting services are required, the IT Director brings up a web page on the EBC (the County's Intranet) and completes a form including the project parameters, IT skills required and a detailed statement of work. Clicking on a "submit" button automatically formats and sends an email to all vendors registered to provide consultants with the specified skills. The mailing is done by an Exchange mail server using custom distributions lists that categorize all vendors by the type of consultants for which they submitted bids. Each vendor is provided with a userid and password protected Exchange mailbox.

The IT Specialist Extranet has been a true win-win for the County and the vendors. Bids are requested and submitted much more quickly as the entire process is electronic. The County benefits from lower costs through increased competition.

25. Please describe any programs your county has developed for disaster recovery to promote business continuation.

Maricopa County is implementing a new Disaster Recovery (DR) Policy (Attachment IT.25.-1) which reflects our experience in preparing for Y2K migration. During Y2K preparation, all County departments were required to have a formal scope, risk assessment, and contingency plan in place (see Attachment IT.25.-2, “Y2K Readiness Report”). Since December of 1999 all departments have had a contingency plan in place.

To further assist departments and standardize the fundamentals of the plans, the County purchased a nationally recognized Disaster Recovery template (from Janco Associates). This template reflects a national “best practices” approach. Regardless of the specific

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strategy that each department chooses to follow, the County requires a formal DR plan to be in place.

The first department to have a new, approved plan was MCDOT (See Attachment IT.25.-3). Their approach to DR incorporates both sophisticated hardware and software that provides for real-time, off-site backups on a 7 X 24 basis. The plan is divided into three phases, each with the transfer of information into a specific cluster of servers followed by the creation of a "Hot Standby" system off site. Phase I, to be completed in August 2001, will focus on all independent divisional file servers of clients. Phase II will include network applications and Phase III will embrace SQL databases.

Another agency that has completed their new plan is the Recorder/Elections Department (See Attachment IT.25.-4).

The attached policy and plans are respresentative of the strategy that Maricopa County is currently pursuing.

26. Please describe any unusual obstacles or challenges your county faces in information technology.

There are basically three levels of challenges that County IT faces:

1. Those that are related to government in general.

2. Those that are related to county government in general.

3. Those that are unique in some degree to Maricopa County.

Each of these, which represent varying degrees of being "unusual", is explained below.

Government in General

• Procurement – The general procurement process of government is significantly slower and more restrictive than other sectors. In certain situations, government procurement intends to enact social policy (e.g. purchasing from minority own businesses). In other cases, lobbyists will attempt to influence or protest procurements at the political level.

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- Wages – Based upon external industry data, the technology staff within Maricopa County is behind market mid-point as a whole. Funding is based on attrition and demonstrated need. Therefore if turnover is low, funding may not occur or may occur at slower than market rates. This presents an ongoing challenge in terms of recruitment and retention.

- Planning Cycle – The budget planning lead-time of government is very long (up to 22 months in advance) and is generally restrictive. This creates frequent tension with the every increasing pace of technological change, and with the often unpredictable plans of major IT vendors.

- Transition to e-Government – The general transformation to information age government requires substantial investment in modern business methods and technology. This presents significant political challenges when horizontal processes and integrated systems break down the traditional walls of heretofore "independent" agencies.

- Concurrent Public Access and Security - Maricopa County, like other government entities, must provide wide-spread constituent access to public record data while simultaneously preserving the integrity and reliability of the same data through rigorous security and authentication methods.

County Government in General

- County Governance Model – It has been humorously stated the role of the CIO is to "manage that which everyone considers their privilege." The challenge of IT governance at the County level is particularly complex due to the involvement of many participants with varying degrees of independence, among which are:

  Autonomous elected officials including the: Assessor, Clerk of the Court, County Attorney, Recorder, Superintendent of Schools, Sheriff, and Treasurer.

  Independent districts including: Flood Control, Stadium, and Library.

  An independent Superior Court of Arizona, a separate branch of government.

Maricopa County

- Arizona Supreme Court - The very large Superior Court organization of the County must maintain a dual alliance to both the County and State Supreme Court, each with their own perspectives and priorities. This brings added complexity to IT planning at the technology, political, and funding levels.

- Digital Signature Authority - Now that is has been approved by the Arizona State Legislature, Maricopa County must wait for the State to establish a certificate authority as part of a public key infrastructure (PKI).

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- Spending Limit - Beyond the normal revenue limitations of government; the County must adhere to a state of Arizona constitutionally-imposed expenditure cap, which in turn could limit technology investment.

- MFR Program – The new County MFR Program has required significant investment at three distinct levels: 1) converting existing systems to support the MFR methodology; 2) implementing new management systems for MFR (e.g. MFR Data Warehouse, JAMIS Time Reporting, etc.); and 3) implementing a consistent MFR program within the technology organizations of the County in terms of strategic plans, programs, activities, services and measures.

- Bi-Lingual Support – A rapidly growing Hispanic population must be considered within publicly accessed information systems.

27. What unique or innovative approaches to information management has your county developed in the past two years? (For example, can you give examples of how information technology has supported key decisions or improved service delivery?)

Please see Comments.

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Thank you for your valuable assistance in providing this information.

Please provide the names, contact telephone numbers, and email addresses for those who completed this section of the survey:

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As you know, Governing *Magazine will follow up with interviews on the topics covered in this survey. To make sure that the proper people are interviewed, please provide suggestions and contact numbers below.*

Who would you recommend that we contact for interviews about information technology management?

Name: John Barrett Job Title: CTO Superior Court

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for IT departmental activities and ICJIS Integration discussion

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