



Board of Supervisors Memorandum

September 5, 2017

**Board of Supervisors Policy D 27.2
Information Technology Program Lifecycle Management Plan**

Background

Based on Board of Supervisors direction, attached is proposed Board of Supervisors Policy D 27.2, Information Technology Program Lifecycle Management Plan (Attachment 1). The Policy was circulated on July 28, 2017 to all County departments and agencies for review and comment. No comments have been received to date.

The Policy was initially drafted as a leasing policy. The initial draft inappropriately concentrated on leasing as the best methodology for the County to obtain and retain the most current information technology (IT) equipment and software.

In connection with the Board's review of leasing versus purchasing of IT equipment used by the County, the Finance and Risk Management Department (FRMD) reviewed recent IT equipment leases to compare the impact of the financing costs to Pima County. Generally, equipment acquisition by purchase costs less than acquisition using a lease structure, whether it is a lease-purchase or a standard lease with no ownership rights, because of the additional financing charges. Based on a sampling of leases entered into each year since the leasing program began in Fiscal Year 2014/15, FRMD calculates the County has been paying between 7.28 percent and 9.57 percent on the leases.

FRMD is able to determine the interest rates because Pima County obtains a quote for the cost to purchase equipment before it enters into a lease. Based on the quotes from bidders, Pima County instructs Hewlett-Packard Financial Services (HPFS) to purchase the equipment from the County-selected vendor and then lease it to Pima County. This approach adds an interest cost to every item of IT equipment that the County would avoid if we simply purchased the equipment from the low bidder.

The County has sufficient cash to purchase IT equipment on an ongoing basis. In the occasional situation when there is a very substantial acquisition cost, the County, with its high bond ratings, can borrow on a short-term basis at much lower interest rates than available from HPFS or other private lenders acting as lessors. Although HPFS is described as a lessor of equipment, it functions only as a lender, with all responsibilities for the equipment falling on Pima County.

The table below, prepared by FRMD, shows the relative interest rates Pima County would expect under several acquisition financing options.

Acquisition Option	Interest Rate %	Comments
Lease with Lease Financing	7.28 to 9.57	Based on sample of existing leases
Purchase with Cash	0.00	
Purchase with County debt issue	2.05 to 2.76	Based on recent debt issues

Two recent examples demonstrate the cost savings in purchasing rather than leasing major IT equipment. At the August 21, 2017 meeting, the Board approved an amendment to Contract MA-PO-17-71 with CDW Government, LLC from which the County licenses the VMware software that manages our servers and storage. Rather than lease the license over a five-year term at an annual cost of \$1,101,755 (or \$5,508,775 total for five years), the County is purchasing the license in a single payment of \$4,591,537, generating \$917,238 in savings of financing/leasing charges. Similarly, earlier this year, the IT Department was directed to purchase the infrastructure needed to refresh the County’s IT backhaul network infrastructure to replace the Synchronous Optical Network (SONET). The replacement infrastructure has an expected life of 10 years. The IT Department estimated that purchasing the equipment would cost \$2.4 million. Leasing the equipment for only 5 years of the 10-year life of the equipment was estimated by the IT Department to cost \$2.88 million. By purchasing the equipment, the County saves nearly \$500,000 and is able to use the equipment for as long as another 5 years to its full life.

In addition to the Information Technology Program Lifecycle Management Plan, there are also policies desired for mandatory conformity or requiring that similar hardware and software systems be used throughout the County, as well as a policy addressing cybersecurity. The draft mandatory conformity policy is also attached for the Board’s initial review (Attachment 2). I will circulate this policy to all County Elected Officials, departments and agencies for their review and comment prior to placing the final policy on the Board’s October 3, 2017 Agenda for adoption. A recommended cybersecurity policy should be available for Board review and adoption in November 2017.

As indicated in proposed Board of Supervisors Policy D27.2 for lifecycle management, I recommend the decision to lease or buy IT equipment be determined on a case-by-case basis involving analysis by the Procurement, FRMD and Information Technology Departments. In most, if not all cases, purchasing this equipment will cost less than leasing.

The Honorable Chair and Members, Pima County Board of Supervisors
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Management Plan**

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Recommendation

I recommend the Board of Supervisors approve Board of Supervisors Policy D27.2 – Pima County Information Technology Program Lifecycle Management Plan.

Respectfully submitted,



C.H. Huckelberry
County Administrator

CHH/anc – August 25, 2017

Attachments

- c: Jan Leshar, Chief Deputy County Administrator
- Tom Burke, Deputy County Administrator for Administration
- Jesse Rodriguez, Director, Information Technology
- Keith Dommer, Director, Finance and Risk Management
- Mary Jo Furphy, Director, Procurement

ATTACHMENT 1



PIMA COUNTY, ARIZONA BOARD OF SUPERVISORS POLICY

Subject: Pima County Information Technology Program
Lifecycle Management Plan

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Purpose

Pima County strives to ensure the successful management of the County's Information Technology (IT) systems to meet the existing and known future business needs of Pima County.

This policy establishes a consistent framework across the County for telecommunication, servers, storage, and computers to ensure they are properly planned, managed and controlled using the most cost-effective strategies. This policy provides direction for design and implementation of systems, as well as requirements for the development and management of effective and sustainable IT solutions.

Background

IT is a critical tool for conducting County business, and the County must have predictable and appropriate IT equipment replacement cycles. IT networks, desktop and personal computers, server and storage upgrades, and office automation software are ongoing costs.

1. Inadequate IT replacement cycles may have the following adverse impacts on County service delivery:
 - a. Equipment failures result in employee downtime, and the inability to access systems or applications hinders efficiency and consistency.
 - b. Incompatibility of office automation products inhibits effective communications and information sharing.
 - c. Increased costs for replacement parts and increased time to repair equipment.
 - d. Considerable time to locate replacement parts or salvage parts from other equipment.
 - e. Inconsistent and less predictable budget requirements, equipment monies being reallocated, and unexpected expenses when equipment fails and must be replaced.
2. External factors exist that are beyond the control of the County and also limit the useful life of IT:
 - a. Much of the software used by the County is on a vendor-enforced replacement cycle, after which the software is no longer supported. This scenario forces upgrades to ensure systems are protected from new threats with the latest security enhancements and patches.
 - b. Hardware manufacturers are working with software developers to develop hybrid systems that require a certain level of compatibility of hardware to the software. This is especially prevalent in operating systems where computer processors have firmware code that interfaces with the operating system to improve security, making it difficult to use or reduces usefulness.
3. The development of and adherence to appropriate IT replacement cycles, both hardware and software, provides the following benefits to the County:
 - a. Predictable ongoing costs for budgeting purposes.

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<ul style="list-style-type: none"> b. Lower overall IT support costs by using shared applications and information and core administrative applications. c. Less effort required to analyze and justify replacement requests for individual departments, Elected Officials and Special Districts. d. Consistent access. e. Simplified implementation of state and federal technology policy direction, such as consistency in customer access. f. Greater consistency in operating systems and application versions, which reduces complexity of the environment, support costs and administrative overhead associated with asset management. g. Remote administration of desktops (software installations and upgrades) that can avoid considerable time and travel costs compared to individual installations. h. Ability to take advantage of warranty agreements and software licensing agreements to reduce the overall costs associated with maintaining obsolete software and hardware. 		
<p><u>Policy</u></p> <p>It is the policy of the Pima County Board of Supervisors that:</p> <ol style="list-style-type: none"> 1. The County Administrator shall establish Administrative Procedures that govern the implementation of the Lifecycle Management Plan to: <ul style="list-style-type: none"> a. Achieve predictable and appropriate replacement cycles for the County’s software, telecommunications, servers, storage and computer systems. b. Ensure efficient and cost effective delivery of information technology services. 2. IT assets will be replaced based on the following schedule: <ul style="list-style-type: none"> a. <u>Servers and storage</u>: five (5) to seven (7) years. b. <u>Telecommunications equipment (telephones and network)</u>: three (3) to five (5) years. c. <u>Computers and other end user or consumer equipment (desktops, laptops, tablets, audio/visual equipment and peripherals.)</u>: three (3) to five (5) years. 3. At the end of lifecycle, the equipment proposed for replacement will be analyzed to determine the specific reason for replacement, and a lifecycle replacement justification report will be prepared by the Chief Information Officer and approved by the County Administrator before the equipment is replaced. 4. Applicability <ul style="list-style-type: none"> a. This Policy applies to all County Departments, Elected Officials and Special Districts. b. Violation of this policy will result in the offending software or hardware solution being removed from access to the County network. 		

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5. Compliance		
<ul style="list-style-type: none"> a. The IT Department shall ensure all software and hardware solutions are maintained according to this Policy, including maintaining a sustainable and consistent approach to security. b. All County entities shall abide by this Policy unless expressly exempted by the County Administrator. 		
<u>Procurement and Acquisition</u>		
<ol style="list-style-type: none"> 1. All lifecycle acquisitions shall be in conformance with County Procurement Code. If a cooperative purchase agreement is used, the Procurement Director shall certify the cost to the County is the lowest and most responsible. At the discretion of the Procurement Director, any lifecycle replacement may be competitively acquired. 2. Two financing strategies are available for lifecycle management: leasing and purchasing, and strategy selection depends on which of these provides the lowest overall cost of ownership for equivalent acquisition. This selection will be based on a total-cost-of-ownership analysis of all equipment and labor costs, other key budgetary concerns of the County (e.g., the constitutional expenditure limitation), and other financial and budgetary considerations. 3. Once a need for lifecycle funding is established, the financial strategy decision will be made on a case-by-case basis, as not all acquisitions have the same cost structures. The County Administrator will be responsible for identifying the business needs, benefits and impacts (cost, time, productivity, service delivery and human resources). The Procurement, Finance and IT Departments, at the direction of the County Administrator, shall identify the appropriate procedures and processes to maximize benefits and minimize costs to the organization for the lifecycle program. 4. The IT Department, in conjunction with the Procurement Department, is authorized to establish and administer master contracts and to aggregate IT products. The IT Department will assist with selection and acquisition of competitively acquired hardware and software products for all IT assets, including, but not limited to, telecommunications, servers, storage and computers. 5. Obsolescence acknowledgment: Prior to any equipment being procured for a lifecycle acquisition, the vendor shall certify the equipment being acquired shall not become obsolete due to a lack of vendor support or any change in software compatibility during the projected useful life of the equipment. 6. Disclosure: Prior to any equipment being procured for a lifecycle acquisition, vendor is required to disclose any equipment or software obsolescence regarding systems updates, modifications or changes that may be required during the useful lifecycle of the acquired equipment, systems, software or products. 		
<u>Definitions</u>		
<ol style="list-style-type: none"> 1. "County Administrator" means the County Administrator or designee. 2. "Elected Official" means a person who is duly elected, appointed or retained through election to an elected County office. 3. "Lifecycle" means the period during which IT assets remain useful. 		

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<p>4. "Information Technology" means:</p> <ul style="list-style-type: none"> a. County IT devices and applications utilized by County personnel to execute job responsibilities and duties in the conduct of County business, which includes, but is not limited to, enterprise applications, business applications, electronic mail and messaging capabilities, telephones, cell or smart phones, radios, computers, hand-held computing devices, peripheral devices that attach to computing devices (such as facsimiles, printers, scanners, copiers and other interfacing equipment), connectivity technologies used to access these computing and peripheral devices (whether accessed from within County facilities or outside), and Internet access. b. The County's network and infrastructure components (connectivity), computing and peripherally attached devices and interfacing equipment, and voice or data communications systems. Control facilities such as security badge systems are also considered components of IT resources, given their impact and reliance on other IT resources. <p>5. "Information Technology Program" means all of the components of the IT Environment, IT Resources, Enterprise Applications, and Business Applications and the content therein.</p> <p>6. "Enterprise applications" means computer software and hardware that has been internally developed or purchased to monitor, configure, balance the utilization of, maximize the performance of, or secure from intrusion, operational interference or destruction of one or more IT resources.</p> <p>7. "Business applications" means computer software that has been internally developed or purchased and configured to automate and/or control (e.g., Supervisory Control and Data Acquisition; SCADA) specific County, departmental or division business processes.</p>		
Adopted: Effective:		

ATTACHMENT 2



PIMA COUNTY, ARIZONA BOARD OF SUPERVISORS POLICY

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A. Purpose

The goal of the Pima County Board of Supervisors is ~~is~~ **desires** is to provide a highly automated Information Technology (IT) environment for use by all departments, **Elected Officials**, and **Special Districts** ~~to which~~ allows for efficient and effective delivery of County services to all constituents ~~while complying with the terms of all applicable laws and agreements~~ **and which is governed by a high-level organizational information security policy to ensure the protection of Pima County's information and information systems.**

B. Background

The **availability** of IT **resources** is essential to all aspects of Pima County ~~governance~~ **government**, including the efficient and effective operation of its various departments, administrative staff and the functioning of its Elected Officials. It is the policy of Pima County to derive maximum benefit from the IT environment it implements and to ensure that the County and its employees use these resources in compliance with all applicable laws and ~~all legally enforceable provisions of agreements~~. It is also the policy of Pima County that the IT environment implemented and used by County employees ~~be used~~ **must use its IT environment** for County business purposes only. It is the responsibility of the County Administrator to ensure that the **Pima** County establishes and maintains an IT program and associated operational environment for use by County employees and its constituents.

C. Policy

The Information Technology Policy of Pima County strives to be consistent with industry best practices as well as the National Institute of Standards and Technology (NIST). It is the policy of the Board of Supervisors that all Elected Officials, Appointing Authorities and Department Directors are responsible to ensure **that** their departments **and** /divisions **do all of the following**:

- Participate **and adhere to** in the Pima County **IT Information Technology** Program,
- utilize and leverage the **IT Information Technology** operational environment provided by the County Administrator, and
- Adhere to the **IT Information Technology** procedures and guidelines established and administered by the County Administrator.

D. Definitions

1. County Administrator" means the County Administrator or designee

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2. **"Elected Official" means a person who is duly elected, appointed or retained through election or an elected county office.**

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<p>3. "Information Technology environment" means the County's IT devices and applications utilized by County personnel, whether owned or leased by County, to perform job responsibilities and duties toin the conduct of County business. This IT environment includes, but is not limited to, enterprise applications, business applications, electronic mail and messaging capabilities, telephones, <u>servers, storage, network devices,</u> cell/smart phones, pagers, radios, computers, hand-held computing devices, peripheral devices which attach to computing devices such as facsimile, printer, scanner, copier and other interfacing equipment, connectivity technologies used to access these computing and peripheral devices whether accessed from within County facilities or outside, and Internet access.</p>		
<p>4.—</p> <p>4. "Information Technology resources" means the County's network and infrastructure components (connectivity), computing and peripherally attached devices, <u>such as facsimile, printer, scanner, copier and other interfacing equipment,</u> and voice/data communications systems. Through these components, devices, and systems, all County personnel access enterprise and business applications within and through the IT environment, and access the ability to create, manipulate, store/archive, move/transport, copy, and print content. Additionally, control facilities such as security badge systems are considered part of IT resources, given their impact and reliance on other IT resources.</p>		
<p>5.—</p> <p>5. "Enterprise applications" means computer software and/or hardware that have been internally developed or purchased to monitor, configure, balance utilization of, maximize performance of, and/or secure from intrusion, operational interference, or destruction, one or more IT resources.</p>		
<p>6.—</p> <p>6. "Business applications" means computer software that has been internally developed or purchased/configured to automate and/or control (e.g. SCADA) specific County, departmental or division business processes.</p>		
<p>7.—</p> <p>7. "Information Technology Program" is comprised of all of the components of the IT Environment, IT Resources, Enterprise Applications, and Business Applications and the content therein.</p>		
<p>E. Requirements</p>		
<p>1. Pima County owns and/or operates the Pima County IT Program, and the content produced and contained within the environment.</p>		
<p>2. The County Administrator shall be is responsible for specifications of the IT Program, whether the components of which are purchased or leased, which are utilized in the IT Program of Pima County to facilitate consistency of operation of similar resource-types deployed in the IT Program.</p>		
<p>3.—</p> <p>3. <u>In order to have conformity county-wide by all Pima County departments, Elected Officials and Special Districts utilizing the County network environment must adhere to County lifecycle management and cyber information security as well as all County Administration Procedures as stated within each applicable procedure. In order to guarantee integration, ease of use and reduce County total cost of ownership of an IT Program all County entities to</u></p>		

include County departments, Elected Officials and Special Districts will be required to adhere to the following:

- a. **Utilization of centralized IT contracts for software and hardware acquisitions utilizing the County network.**
- b. **County IT published software versions, server and storage standards, computer standards and telecommunications (networking and phone) equipment.**

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4. All County IT Program components remain under the control, custody, and supervision of the **Pima** County. All content accessed, created, manipulated, stored, archived, moved, transported, scanned, and printed remains the property of the **Pima** County and is subject to monitoring, auditing, and review. The **Pima** County reserves the right to monitor, audit, and review content at any time and without notice at the County's discretion. **Elected Officials and Employees** have no expectation of privacy in their use of the County IT Program, either from internal monitoring, auditing, reviewing, or from public disclosure.

5.—

5. All **Pima** County **provides** IT Program components are provided to support the performance of job duties. Therefore, **Elected Officials and employees are to use** the IT Program is to be used for business-related purposes. ~~Incidental personal use is permitted provided that the incidental personal use conforms to applicable~~ **only and must conduct** County policy, and such use does not interfere with the IT Program, or an employee's job duties and performance. ~~Incidental~~ **business only on and from County-owned or leased devices. Pima County prohibits the** personal use of the IT environment **County owned** or **leased IT** any resources, **except for incidental personal use.** shall be reimbursed to the County as practical as possible.

6.—

6. Access into the IT Program will be protected by the use of authentication credentials. ~~These credentials will be used in order to make a resource function in the IT environment by verifying the~~ authorized use of a resource by County personnel. ~~These credentials must not be shared, converted, or transferred to anyone other than~~ **The person** to whom the authentication credentials were ~~are~~ issued **must not share, convert, or transfer these credentials to anyone else. Users with elevated credentials must use two factor authentication credentials to access systems.**

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~~The~~ **Elected Officials and employees must not subject the** IT Program should not be subjected to, or even appear to be subjected to inappropriate usage. Unacceptable uses of the IT Program include, but are not limited to:

- a. Use for personal gain, advancement of individual **personal** views, or solicitation of non-County business;
- b. Any purpose and/or development of content which violates state or federal law including, but not limited to, violation of intellectual property and/or confidentiality laws;

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<p>c. Using <u>Use of</u> any component of the Information Technology Program for the purpose of producing, distributing, or forwarding content that:</p> <ul style="list-style-type: none"> i. Attempts to influence the outcome of an elected office <u>election</u>, referendum, initiative, or recall (Arizona Revised Statute <u>A.R.S.</u> § 11-410); ii. Is discriminatory, harassing, or disruptive of fellow County employees, volunteers, interns, or contractors including but not limited to content that is sexually explicit, derogatory, abusive, or <u>that contains</u> threatening images, cartoons, jokes, inappropriate or profane language, or other <u>similar</u> materials; iii. Is objectively offensive, regardless of whether one or more recipients were <u>may</u> or were <u>may</u> not <u>have been</u> offended, felt threatened, or otherwise disturbed; iv. Attempts to deceive recipients by providing content that misrepresents, obscures, or conceals the true identity of the sender for malicious purposes; v. Is not of the nature of County-related business which includes , <u>including</u> but is not limited to chain letters, stories, petitions, warnings, pictures, and/or programs and applets; <p>d. Any use of one or more components of the IT Program that could interfere with the proper use of other aspects of the IT Program;</p> <p>e. Interference with the security of confidential content in the IT Program including but not restricted <u>limited</u> to secure data zones and folders, identity and authentication information regarding any person or item within the IT Program;</p> <p>f. Any use of one or more components of the IT Program that could cause or lead to a cause of excessive strain on any IT Program component, such as for example; mass emailings of non-authorized content <u>emailing</u> which causes strain on connectivity, computing, and storage resources;</p> <p>g. Unauthorized inclusion <u>installation of or use</u> on <u>of any</u> non-County owned/ <u>or</u> leased IT device(s), application(s), or resource(s) into the IT Program regardless of whether any damage(s) were <u>is</u> caused to elements of the IT Program; <u>for example:</u></p> <ul style="list-style-type: none"> i. <u>Personal cell phones will no longer have access to County email;</u> ii. <u>Personal laptops may not access the County network;</u> iii. <u>Elected Officials and employees may not use County computers to access personal email, i.e., Yahoo, Gmail, etc.</u> <p>h. Unauthorized configuring and/or tampering with one or more components of the IT Program regardless of the security criticality of the resource relative to the IT Program as a whole;</p> <ul style="list-style-type: none"> i. Physical abuse of anything within the IT Program; j. Any <u>other</u> use that violates County policies, guidelines, or procedures. 		

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8.—		
<p>8. IT Program messaging resources are not intended for the creation and distribution of sensitive, private, confidential, or privileged materials such as personnel matters or decisions, grievances, or disciplinary actions, <u>unless the creation and distribution of such material is within the official job duties of the elected official or employee creating or distributing such material.</u> No such content should be distributed via any messaging resource, unless such resource is specifically encrypted to preserve confidentiality of content.</p>		
9.—		
<p>9. <u>All data stored and communicated on the County network will need to comply with any regulatory and compliance standards governing the information to include but not limited to information governed by personal identifiable information (PII) standards, Health Information Portability and Accountability Act (HIPAA), and Payment Card Industry Data Security Standards.</u></p>		
<p>F. <u>Implementation</u></p>		
<p>1. The County Administrator may block or terminate any component of the IT Program, regardless of ownership of the device, application, <u>or</u> resource, which has been detected <u>determined</u> to violate any County policy, especially any <u>where use of the</u> device, application, <u>or</u> resource that poses a serious threat to security or integrity of the IT Program.</p>		
2.—		
<p>2. <u>The County Administrator may block or re-direct acquisitions that have been determined to be in violation of any County policy in order to maintain conformity to the standards and security for the County.</u></p>		
3.—		
<p>3. The County Administrator shall <u>will</u> distribute Administrative Procedures outlining the guidelines and requirements of the Pima County IT Program.</p>		
4.—		
<p>4. Implementation of and adherence to this Policy is <u>Elected Officials</u> and employees are required to <u>implement and adhere to this Policy</u> at all levels of the <u>Pima</u> County. Any <u>Elected Official</u> employee, volunteer, contractor, or intern of the County found in violation of this Policy will be subject to appropriate disciplinary action, up to and including termination of employment or business relationship <u>budget sanction by the Board of Supervisors.</u></p>		
<p>5. and e <u>Employees</u> are required <u>to implement and adhere to this Policy</u> at all levels of the <u>Pima</u> County. Any employee, volunteer, contractor, or intern of the County found in violation of this Policy will be subject to appropriate disciplinary action, up to and including termination of employment or business relationship.</p>		
<p>6. Any infraction against this Policy which is significant enough to warrant further investigation will be referred to the County Attorney by the County Administrator.</p>		

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<p>7.—</p> <p>7. All County employees shall must sign an Information Technology Program procedure upon hire and annually thereafter. Original signed forms will remain in an the employee's department personnel file.</p> <p>G. <u>Applicability</u></p> <p>This policy applies to all departmental <u>Elected Officials, departments</u> and special districts of Pima County, whether under the supervision of an elected or appointed official.</p>		
<p style="text-align: right;">Effective: March 18, 2014 Revised:</p>		

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