City of Alexandria, Virginia

MEMORANDUM

DATE: APRIL 16, 2001

TO: THE HONORABLE MAYOR AND MEMBERS OF CITY COUNCIL

FROM: PHILIP SUNDERLAND, CITY MANAGER PS

SUBJECT: BUDGET MEMO # 12 CITY INVESTMENT IN INFORMATION TECHNOLOGY (COUNCILMAN EUILLE'S REQUEST)

At the City Council's retreat in the fall, Councilman Euille requested a report on the effectiveness of the City's investment in information technology. This report identifies the significant computer and information systems in use and assesses whether the systems provide one or more of the following benefits:

- Customer Service Improvement
- Operational Efficiency
- Financial Benefit

This report seeks to address issues such as:

- How has the use of the system improved the City's ability to deliver improved customer service, either to citizens or other City agencies?
- What can be accomplished now that could not be performed before?
- Did the use of the system result in a reduction in staff time or costs or provide the opportunity to reassign staff to other duties?
- Was there a cost avoidance?
- Did the use of the system result in either increased revenues for the City or reduced costs?

Information technology systems currently in use range from multi-million dollar, interdepartmental systems to small, off-the-shelf desktop systems used by individuals throughout the City. Generally, the service provided by the City's information technology systems falls into four categories: public safety and transportation, finance or revenue collection, public access or customer service, and efficiency.

Many of the City's most utilized and beneficial information systems provide public access to information that previously could only be obtained directly from City staff. The City's web site is constantly being improved and updated to provide citizens with instant access to information. In November, the City launched the Real Estate Assessment Information System, which has quickly become the most accessed site on the City's website. Citizens are able to access the assessment information on every property in the City. Other

System, which has quickly become the most accessed site on the City's website. Citizens are able to access the assessment information on every property in the City. Other information available on the website includes the docket for City Council, the Planning Commission, and the Boards of Architectural Review and Zoning Appeals. Interactive pages on the web enable citizens to pay taxes and parking tickets on line and submit applications for City jobs.

Several systems provide staff with direct access to information and significantly reduce the time needed to request and produce reports. The LAN-based Performance Accounting system enables more than 350 staff throughout the City to access current financial information from their desktop. The Lotus Notes-based Docket Storage and Retrieval System enables staff to access and search City Council docket items back to FY 1992 from their desktop rather than through the City Clerk's Office.

In addition to public access to information, many of the City's information systems improve the ability of City departments to access and share information. This is particularly useful in the public safety agencies where employees in the field are able to access and exchange current information. The Computer Aided Dispatch system and Mobile Computers utilized by the Police Department have decreased the amount of time officers have to spend filing reports and preparing paperwork, thereby increasing the amount of time spent on community policing.

Many agencies identified efficiency of operations as the primary benefit of their information systems, for instance many of the systems in place in the Department of Human Services enable staff to input data directly into the systems rather than record information by hand and then perform data entry. For instance, the Library self checkout system frees circulation staff to perform clerical duties, and allows patrons to avoid standing in check out lines. The City's DOT Paratransit Management System replaced an entirely manual process of scheduling and dispatching trips for the City's paratransit service for the disabled.

In some cases information systems have enabled agencies to avoid costs or reallocate positions. For example, the Personnel Department is able to merge the City's employment information with WashingtonJobs.com, the Washington Post-sponsored employment web site. For $1,000 per month, the City's current job vacancies are continually presented to applicants searching the Washington Post's employment web site, compared to $1,000 to place just three classified advertisements in the Washington Post. The Library licenses several on-line databases, which provide patrons with full text access to articles in approximately 1,500 magazines. The Library would have to spend more than $200,000 annually to provide hard copies of the magazines to which they provide electronic access at one tenth of the cost.

In some cases, a new system was installed to replace a legacy system that no longer met the needs of the department. Both the Computer Aided Dispatch System and the Records

Provided below are the major systems identified by City agencies and the benefits that the citizens and the City government have realized from them.

Public Safety and Transportation Systems:

Police and Fire Computer Aided Dispatch System and Police Records Management System - In 1999 the City replaced a non-Y2K-compliant computer aided dispatch system. The CAD system is the primary means for 911 operators and dispatchers to record information given to them by citizens to ensure a prompt and appropriate emergency response. The CAD system is used by dispatchers to record the actions, locations and availability of police officers to ensure the optimum utilization of field resources in responding to citizen requests. It also provides the historical database of citizen requests and police field activity for investigations and analysis of specific events and the deployment of police resources. The system also improves the accuracy of geographical information and unit assignment required for dispatching Fire and Emergency Management Service (EMS) units.

The new CAD system interfaces with the Police Records Management System (RMS). It provides the initial data needed for the RMS to generate the State-mandated Incident Based Report. The City is currently developing a system to take advantage of the CAD systems integrated mapping capability, which will provide location information about wireless 911 callers and police officers who could not otherwise be located.

If the City did not replace the non-Y2K-compliant CAD system, the Police and Fire Departments would have been forced to return to a manual call recording and dispatch process, and would have required an additional 5 to 7 employees to categorize, record and retrieve data from the manual system.

Police Department Mobile Computer System - The Police Department's mobile computing system and the software package, Mobile Data Browser, provides tools that were once found only in police headquarters or over the radio. The mobile computers enable officers to access current, shared information and keep the radio air time free for emergencies. From their vehicles, officers are able to access current information on stolen vehicles, missing or wanted persons, and daily information and crime bulletins. The mobile computing system provides the officers on duty with the ability to communicate with other officers in the field and view officer and vehicle whereabouts in the same manner as the dispatcher.

The use of mobile computers has reduced staff time by reducing travel time between supervisors and officer to have paperwork approved. Reports can be transmitted electronically. It has also resulted in time savings on radio transmissions, queries on wanted checks, completion of field training reports, and word processing documents. Officers are able to do many things from their car that they previously would have had to complete at headquarters. The additional time is used for community policing activities in the assigned patrol areas.

An additional feature, the Police Works software package, will be fully deployed later this year. This software will allow officers to complete an accident or incident report on a mobile computer and transmit the data electronically into the Police Department's Records Management System. This integration will save data entry time and allow for more timely retrievals of information. By providing officers in the field with instant accessibility to the most accurate information, the safety of the officers is increased and their ability to protect the community is improved. It should be noted that the deployment of this more sophisticated computer technology occurred during the same time that crime rates have dropped.

Criminal Justice Information System (CJIS) - CJIS is the primary source of criminal information and for certain elements of civil case information for the City of Alexandria. Beginning with the issuance of a warrant, the system records the disposition of all criminal cases heard in the General District Court and each subsequent hearing in the Circuit Court. CJIS is accessed regularly by approximately 600 users in 13 agencies, including Adult Probation and Parole, the Clerk of Court, Magistrates, the Judges' Chambers of the Circuit Court, the Juvenile and Domestic Relations District Court, the General District Court, the Commonwealth's Attorney's Office, the Department of Mental Health, Mental Retardation and Substance Abuse, the Office of the Sheriff, the Police Department, the Public Defender's Office, the Office on Women and the Court Service Unit.

By having one comprehensive criminal system and for certain elements of the civil system, all agencies are able to share data without having to spend time contacting one another to gather information. Citizen inquiries can be responded to immediately by one agency, rather than being routed to multiple agencies. The CJIS system is also a vital tool for tracking restitution for the City. The system is used to generate a report that lists all individuals who are past due in payments due to the City.

The Office of the Sheriff uses CJIS to access essential information on dealing with charges, backgrounds and adjustments on inmates in the jail. Staff is able to automate the calculation of inmate prisoner days from which the City's receives reimbursement from the federal government. When the CJIS system is replaced by the Alexandria Justice Information System (AJIS) the Sheriff's Office will be able to automate the data transfer from AJIS to two State reporting systems (Local Inmate Data System and Live Scan). This automation will bring greater efficiency to the records and booking operation.

Traffic Computer System - In FY 2001, the City completed Phase I of the upgrade to the existing computer-managed signal system. The upgrade provides new centralized traffic control operations that will enable the City to provide enhanced signalized intersection operating control. The new system requires less field-based technical interaction and maintenance. Many controller functions can now be handled from the central computer. The upgrades to the traffic signal system will provide greater reliability and flexibility for better management of traffic flow, both in peak and off-peak periods, and will contribute toward improving regional air quality.

DOT Paratransit Management System - Prior to the installation of this automated system in 1998, the process of scheduling and dispatching the 55,000 yearly trips for the City's

paratransit service, the system was totally manual. Automation has enabled the City to provide a more timely, cost efficient and accurate service to its traveling disabled community. Multiuser software allows several reservationists to take calls and schedule trips simultaneously. The new desktop computer-based system eliminates a tedious, error-prone, handwritten process, and eliminated the need for overtime payments to the contracted reservationists for handwriting trip schedules each evening. The system enabled the City to avoid paying for additional reservation staff time as the DOT paratransit system usage increased. Automated daily trip scheduling reports are used to compare scheduled trips with trips billed by transportation providers to identify and resolve billing errors.

Public Access/Information Systems:

Website Information

Real Estate Assessment Information System - In November, the City launched the Real Estate Assessment Information System, which provides general real estate assessment information to the public through the City's web site. The assessment information is updated each month to reflect new ownership information, sales prices and other revised data.

Employment Information - The City's employment web page provides a list of current job vacancies, descriptions of the vacancies, and the means to complete and submit job applications. Staff is able to save time by immediately advertising job vacancies without having to prepare announcements (Text from previously published internal promotional announcements can be downloaded.) or wait for print media publication deadlines. The City's employment information is linked to the *Washington Post* employment web site (Washingtonjobs.com) for $1,000 per month, compared to $1,000 to publish three classified advertisements in the *Washington Post.*

Electronic Library Databases - Both in the Library and at home through the City's website, patrons are able to access several on-line databases which provide access to an index of more than 3,000 magazines and full text access to the articles in approximately 1500 publications. Patrons with valid library cards are able to search, view, download or copy articles from their personal computers through the Internet on a 24 hour basis. The library currently subscribes to more than 500 magazine titles in hard copy. By limiting the number of hardcopy subscriptions and providing electronic access, staff administrative work is minimized and storage needs are reduced. Tripling the number of subscriptions to provide hardcopies of all the publications available electronically would require two to three times as many staff. The annual license cost for unlimited use, including 24 hour remote access, is $24,500. The average subscription cost for U.S. periodicals exceeds $200 annually. The library would have to spend more than $300,000 to provide the hard copies of the magazines to which they currently have electronic access for approximately one-tenth of the cost.

Docket Storage and Retrieval - This system allows staff (through the Lotus Notes desktop) and the public (through the City's web site) to research meeting minutes and to

search and download docket materials from the meetings of the City Council, the Planning Commission, and Boards of Architectural Review and Zoning Appeals.

Recreation Information - One of the most popular areas on the City's website provides information on all recreation programs and services, including the schedule of classes from the seasonal recreation brochure. Visitors to the site are able to download and print registration forms to mail into the Recreation Department. The website has significantly reduced staff time and resources necessary to respond to phone inquiries and distribute information.

On-line Payment of Taxes and Parking Tickets - Beginning in April 2000, the City offered a secure on-line Internet connection for consumers to pay their personal and business personal property taxes, real estate taxes and parking ticket fines through the City's website. For a convenience fee, citizens are able to make payments 24 hours a day, seven days a week.

Miscellaneous Information on the City's Website

Voter Registration - The Voter Registration webpage provides a downloadable absentee ballot application and voter registration form. The site also provides information on voting precincts, election results and statistics, and information about running for office.

Historic Alexandria - The Office of Historic Alexandria webpage provides information about the City's history, including information on historic preservation, museum events, archeological sites, and rentals of historic properties. The web page is used by students and historians for school assignments and research. Online education activities and resources are available to students, teachers and homeschoolers.

DASH Alexandria Transit Company - The DASH web page provides fare information, bus schedules and a map of the bus routes. Also available on the webpage is information about the history of DASH and special promotions, such as free rides on Ozone Action Days.

Finance Systems:

Performance Accounting and Asset Management - The accounting system allows users to access certain financial information online instead of having to request reports from the Information Technology Services Department. The LAN-based system allows greater flexibility in providing access to users and allows City departments to spend less time waiting for financial reports. The electronic dissemination of information has provided the opportunity to reassign staff to other duties, including collection of non-tax revenues. Use of automated reports have allowed staff to comply with increased requirements for federal audits for grants without having to hire additional resources to comply. Timely access to financial information has enabled users to better manage the financial aspects of their programs.

Revenue Collection Systems - The Revenue Division utilizes a number of systems to collect the City's taxes (Real Property, Personal and Business Personal Property, Meal Sales, Transient Lodging, and the Business License taxes). These systems enhance the City's ability to deliver improved customer service to the taxpayers. The systems track tax accounts, accounts receivable, and delinquent taxes (including penalties and interest), and produces summary statistical reports and mass mailings to taxpayers. Prior to the implementation of these systems, all aspects of tax assessment and collection required manual manipulation of data. The improved efficiency of these systems improves the accuracy of tax assessment and collection and limits the amount of time taxpayers have to wait in line. Improved efficiency and computer systems capabilities have also resulted in an improved City ability to collect delinquent taxes.

Professional Consultancy International's Revenue System (Automated Cash Registers) - The automated cash registers allow the Treasury Division's cashiers to accurately process all City revenues from residents, as well as other City agencies. The system provides the customer with a machine-printed receipt that can be researched in the system's electronic payment journal in the event of subsequent payment inquiries. Payment data is collected throughout the day and interfaced to the City's tax receivable and Performance Accounting systems.

The efficiency of the automated cash registers, combined with improvements in the City's tax receivable systems, has provided the Treasury Division with the opportunity to reclassify a cashier position to an Accountant II position. The new position will continue to improve the automated information management systems used by the Treasury Division and to ensure the accuracy of the financial data on these systems through daily verifications and reconciliations.

Customer Services/Efficiency of Operations:

Geographic Information Systems (GIS) - The City's GIS is fairly new and most of the benefits associated with it will develop over time as various users and departments begin to rely on GIS information (spatial data). However, even in these early stages, some of the benefits of GIS are already being realized. GIS map layers create a single source of data which can be shared seamlessly among users, preventing duplication of efforts and ensuring consistency between departmental data.

Some departments have also been seeing benefits in the form of more efficient processes. For example, the Police have used GIS to map crime for identifying clusters or trends, and in the Computer Aided Dispatch system (CAD) for more accurate emergency response mapping. The greatest increase in efficiency has come from many departments being able to request map products and receive them in a timely manner. Having the base layers in place has allowed GIS to mix and match various themes to create unique maps to address varying needs.

As the GIS matures over the next few years, GIS technology will be brought into most departmental processes. As the next phase of database technology, GIS will be embedded in all database applications that make use of spatial data. GIS will also serve

the public directly through Internet-based spatial research. The public will be able to avoid coming to City Hall and will be able to query data in real time from computers which have access to the Internet.

Library Self-Checkout System - Two self checkout lines were installed at the Charles Beatley Central Library to allow patrons without overdue fines to check out their own materials. The machines present simple, visual instructions and produce a printed "date due" piece of paper, showing each item checked out, to provide the patron with verification that the materials were properly processed. The units let patrons avoid standing in long check out lines during busy times, and free circulation staff at less busy times to perform clerical duties. Between December 1, 2000, and February 28, 2001, more than 5,000 patrons checked out 9,700 books and videos, approximately 8 percent of each month's circulation activity. The system frees existing staff time and performs activities that result in a cost avoidance of approximately one full time equivalent position at $25,000 in salary and benefits.

Recreation Management System - In FY 2000 the Recreation Department started implementing a comprehensive recreation management program to allow people to register for recreation classes, activities, and facility rentals at any of the City's recreation centers. The system is currently only in operation at the Lee Center and at the Chinquapin Recreation Center pending completion of Institutional Network (I-Net) connections at remote facilities. In the future this system will enable electronic registration and payment over the Internet.

Although initially the Department experienced a cost increase due to the complexities of implementing a new system and training staff to operate it, ultimately there will be a savings in both staff time and costs due to a reduction in paperflow and staff processing time. Recreation staff also anticipates that by making it easier for citizens to register for activities and to rent facilities, the City may receive increased revenues from an increase in registrations.

Faster CS Fleet Management System - The Fleet Management system is a comprehensive fleet maintenance and administrative software system that incorporates most aspects of the vehicle maintenance shop, from asset (vehicle) management, asset replacement, parts inventory control, labor module, management reporting and fuel management with the Fuel Site Interface Module. The FasterCS Fleet Management system has improved customer service at the Motor Equipment Division (MED) by centralizing all aspects of the shop operations into one software package. This allows for faster data retrieval (for user agency inquiries), more accurate and up-to-date labor and parts recording and better preventive maintenance scheduling. It also gives the MED the opportunity to share maintenance information with other jurisdictions for benchmarking purposes.

The fleet maintenance system has improved efficiencies of the operation with the centralization of information. Information for various segments of the operation are connected through relational databases that allow analysis of the use of time, and personnel and non-personnel resources. In turn, personnel usage decisions can be made

to improve shop output on a rapid basis. The system will reduce the fleet maintenance costs through more accurate data recovery that aid repair or deadline decisions, set vehicle life replacement criteria and set preventive maintenance cycles by monitoring actual usage of time and materials.

Anasazi - The Anasazi system, used in the Department of Mental Health, Mental Retardation and Substance Abuse, is a client-server based comprehensive client database for assessment and treatment planning. The system includes a data management and billing system to handle all client and third party billing, including managed care, as well as Department, City, State and federal reporting requirements.

The new system has resulted in increased fee collections due to more complete and accurate billing. Anasazi allows better monitoring of staff work and the earlier detection or productivity issues. Once the Department switches from batch-entered data to clinician-entered data, it is anticipated that some staff will be redeployed to other duties. The Department has been able to improve accounting for fees receivable and has been able to dramatically reduce outstanding fee balances.

Harmony Information - The Harmony Information System enables staff to produce purchase orders and invoices in a more effective and efficient manner than with the previous Title XX Payment System. A case management module contained in the system allows staff to track client and vendor information, to produce reports and to measure the outcome of the provided services.

The system allows social workers to enter information directly into the system instead of filling out forms and having clerical staff perform data entry. The main Harmony clerical position is now able to produce checks and reports on a more regular basis than with the old system.

Joblink Information System and the Office of Community Services Client Tracking System - Both of these systems enable staff to access client history information. Staff is able to spend less time researching old files, and in the case of JobLink three separate data systems, to locate a case history. The increased efficiency results in more time for direct client service.

In conclusion, the City's investment in information technology has provided to citizens and City staff improved access to information and has improved the efficiency of City operations. In many cases, increased efficiency of operations has helped agencies perform more work with less staff. In the case of the systems in use in the Finance Department, the accuracy and automation of computerized systems compared to manual assessment and collection of taxes, has had a significant effect on both City revenues and customer service.

It should be noted that some of the efficiencies of operation that are recognized in one area of a department are absorbed by the resources required to maintain and update the system in another area of the department. It is also possible that the benefits are being recognized by a separate department as in the case of the financial systems that require

less report-generation from the ITS Department. In many cases the tangible benefits of a system are not recognized until the system has been in place for a considerable amount of time.

Unifying all of these systems is the City's wide area network (WAN) of which the Institutional Network (I-Net) is the largest and most actively used component. This connectivity provides City Hall, the Schools, Libraries, Public Safety Agencies, Recreation Centers, and Human Services organizations with the ability to share information and computer resources in a secure and very fast technical environment. It has empowered staff to make extensive use of e-mail, and provides access to the Internet and to some State and regional data.

By making information more readily available to both staff and citizens, staff has more time to focus on other work or assist citizens with more complex issues. The round-the-clock accessibility of information and services, such as the capability to pay taxes and parking tickets online, provides better service to the citizen by enabling them to contact the City when its convenient and not limiting them to service between the hours of 9:00 a.m. and 5:00 p.m., Monday through Friday. As we advance in our application of information technology, we expect to provide more information and access to government services.

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