Attachment 4

# Executive Summary

The Information Telecommunications Services Section of the King County Executive Department contracted with C&M Technology, Inc. to review and report on the enterprise-wide infrastructure network equipment replacement plan and funding model presented to the King County Council during the 2002 budget cycle.

The task for C&M Technology, Inc. was to review and revise the existing equipment replacement plan for technology services; to submit a report of findings based on the review and revision of the equipment replacement plan to meet the needs of the 2003 King County Council proviso; to develop a standard framework for ITS to use for future equipment replacement plans; and to use a this standard framework to write an equipment replacement plan for Printing and Graphic Arts. The equipment inventory included ITS data network components and distributed server equipment and excludes the mainframe, mainframe support equipment and software.

After reviewing the Report and Recommendations: Equipment Replacement Strategy for King County Enterprise-Wide IT Infrastructure and ITS – Technology Services Fund Balance Management Plan, C&M Technology, Inc. made several key conclusions.

The first conclusion is that after conducting research into the equipment replacement practices of other public agencies across America only in a very few cases does an information technology department have an approach to equipment replacement. Most other public agencies rely upon the professional judgment of their IT managers to replace equipment in an *ad hoc* fashion. More importantly, the record is clear that in virtually every other public arena, although funding for equipment replacement is recognized as the primary obstacle to actual equipment replacement, every governmental entity struggles to identify a funding source and further struggles with the commitment to reserving funds on an ongoing basis. King County and ITS should be proud of their efforts to recognize the problem and to deal with it in a realistic manner.

The second conclusion is that many of the recommendations proposed by ITS, if enacted, should promote substantive communications between ITS and customer agencies regarding their needs and expectations and should also have a positive influence on IT governance in King County. The proposal for periodic and routine status reviews and updates to the Technology Management Board (TMB) opens communications on a countywide basis and involves ITS stakeholders in the replacement decision-making process. Moreover, the proposal for annual capital budget process involving TMB can provide feedback and direction to the equipment replacement program. This consideration for the involvement of others in what traditionally has been ITS domain is an important change in philosophy and management.

The third conclusion is that ITS is attempting to manage a very expensive inventory of switches, routers and servers without the benefit of a countywide automated asset management system. Reliance on *ad hoc* databases and spreadsheets cannot provide county government sufficient management level information about what is in the inventory, what the status of the equipment is at any given time, nor the service or repair history of the equipment is.

The fourth conclusion is that ITS correctly identified the factors that influence equipment replacement decisions. The age of equipment, where equipment fits into the network hierarchy, the reliability of the equipment, the ability of the vendor to support equipment, the throughput and technological capacity of equipment, and the demands customer agencies make on the bandwidth and security of the network are all part of the decision-making model proposed by ITS. This demonstrates an understanding of the complexity of the issues and recognition that enterprise-wide infrastructure equipment replacement is both an art and a science.

The fifth conclusion is that the standardization on Cisco Systems, Inc. network electronics for the King County Wide Area Network (KCWAN) is appropriate. Cisco is the industry leader in switching and routing equipment. Their protocols are recognized as being the standard by which equivalent equipment is evaluated. More importantly, the county's reliance on the KCWAN is utter and absolute. The importance of the data transported on the network ranges from routine to life-safety in nature. It is absolutely essential that the network components be reliable. Cisco products and their support ethic provide that mission.

Finally, as earlier noted, while the county is to commended for taking a comprehensive approach to planned and funded enterprise equipment replacement, there is an unfunded liability that needs to be addressed. Accumulated depreciation through 2003 is $3,932,705 (accumulation of $3,211,129 from 1997-2002, plus $721,576 in 2003). Available resources within ITS fund balance will reduce this to $2,151,925. But overtime, the county will need to balance all of its many priorities and fund this difference, plus the depreciation that continues to accumulate each year. The primary equipment vendor no longer supports over ten percent of the equipment and no longer sells over seventy percent of the equipment. Because for many years equipment replacement was not considered at the outset of equipment purchase and installation, the need has become pressing. Moreover, although the equipment continues to play a central role in the mission of county government, it represents little real value in terms of depreciation.

C&M Technology, Inc. has developed a series of recommendations that are contained in the body of the report. However, the key recommendations are as follows:

One key recommendation is that the equipment replacement model be revised such that it directly incorporates the factors that influence equipment replacement decisions. C&M Technology, Inc. proposes a revision that recognizes the primary mission of ITS to maintain service to customer agencies and the secondary mission of expanding services in a planned and systematic fashion. The revised model, called the Replacement Factors Model, is contained in the body of the report. It should be noted that there is a direct correlation between the current equipment replacement model and the revised model.

When the equipment inventory is divided in half, sixty-three percent (63%) of the equipment at the top of the inventory was previously identified for replacement and was categorized as "failing", "problematic" or at the "end of life" by ITS. Similarly, seventy-one percent (71%) of the equipment at the bottom of the inventory was not labeled as "failing", "problematic" or at the "end of life". Thus, the model that largely relied upon the professional judgment of ITS is borne out by the revised empirical model.

Another key recommendation is that the county adopt the ITS proposal for incorporating equipment replacement review and reporting into the budgetary and governance process.

A third key recommendation is that the county needs to conduct a comprehensive physical inventory of existing network electronics equipment, establish an asset management system and allocate reasonable staffing levels to support that function. This will not only assist the county in the management of the physical assets of ITS, but ensure that sufficient audit controls are in place to successfully manage all of the assets owned by the county.

Another key recommendation is that equipment should be tracked by funding source such that replacement funding can be segregated by rate bucket. This will allow for ITS to provide sufficient detail at the rate bucket level to TMB in the proposed review and reporting relationship

Finally, the last key recommendation is that the county address the unfunded liability (accumulated depreciation less the available equipment reserve fund) for equipment purchased from 1996 through 2002, and that an annual equipment replacement spending plan be developed and funded by an equipment replacement reserve fund.