MIAMI-DADE COUNTY PUBLIC SCHOOLS

Internal Audit Report

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District's Electronic Instructional Technology Purchasing and Placement Practices

Equitable distribution of computers for student use was generally achieved, but better inter-departmental planning, coordination, communication, and follow-up are needed in implementing the District's electronic instructional technology initiatives, and would result in cost savings to the District.

March 2010

OFFICE OF MANAGEMENT AND COMPLIANCE AUDITS

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Mr. Jose F. Montes de Oca, CPA
Chief Auditor
Office of Management and Compliance Audits

Contributors to this Report:

Audit Performed by:
Mr. Luis Baluja
Ms. Dina Pearlman, CISA, CIA
Ms. Teresita M. Rodriguez, CPA

Audit Reviewed by:
Mr. Jon Goodman, CPA
Mr. Trevor L. Williams, CPA

Audit Supervised by:
Mr. Trevor L. Williams, CPA

March 3, 2010

Members of The School Board of Miami-Dade County, Florida
Members of the School Board Audit Committee
Mr. Alberto M. Carvalho, Superintendent of Schools

Ladies and Gentlemen:

In accordance with the approved Audit Plan for the 2008-09 Fiscal Year, we have performed an audit of the District's computer technology purchasing and placement practices as performed by the Division of Instructional Technology during the period of July 1, 2006 through June 30, 2009. Our scope focused on computer hardware purchased by the Division of Instructional Technology on behalf of school locations under Phases I and II of the Technology Refresh Initiatives. The audit evaluated the purchase and placement processes used for specific technology purchases. We also examined the appropriateness of the purchases in terms of actual need and usefulness.

Our audit concludes that, while the objective of providing schools with modern computers is largely being met, there is a need for improvement in the planning and placement processes. We also found that items bundled in technology bids were not universally useful, leading to excess equipment being stored at schools. Furthermore, due to the lack of controls over excess equipment, there is an increased risk of theft for personal use or for resale purposes.

Our findings and recommendations were discussed with management. Their responses along with explanations are included herein. We would like to thank management for the cooperation and courtesies extended to our staff during the audit.

Sincerely,

José F. Montes de Oca

Jose Montes de Oca, CPA, Chief Auditor
Office of Management and Compliance Audits

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EXECUTIVE SUMMARY

Our audit covered the District's processes relative to instructional computer technology updates during the period of July 1, 2006 through June 30, 2009. In planning the audit, we developed our scope to review the processes, including the purchasing practices, relative to instructional technology purchases and placement during the period of July 1, 2006 through June 30, 2008. During the course of our audit, it became evident that the activities related to the purchases selected for testing, to assess the processes being audited, were incomplete as of June 30, 2008. Consequently, testing and evaluation of those activities had to be extended through June 30, 2009, when the processes and activities relative to those purchases that were initiated between July 1, 2006 and June 30, 2008 were completed. This afforded us the ability to assess the completed processes relative to instructional computer technology updates.

OVERVIEW OF FINDINGS

- The objective of providing schools with new computers is largely being met.
- The criteria and methodology used to prioritize schools for computer placement are sound and promote equity, but are not documented.
- Written guidelines for computer equipment purchases and placement lack specific step-by-step guidance.
- The current bid specifications are not aligned with district's school site needs.
- Unused inventory totaling $271,000 was found at 20 of the 22 school sites visited.
- A preliminary assessment of school readiness and infrastructure is not being performed in a systematic or timely manner.
- A measure of follow-up is evidenced, but consistency and timeliness in following-up on computer placement is needed and could eliminate or reduce overpayments and delays in placing computers into service.

To achieve our audit objectives, we focused our scope on computer equipment that has been purchased and placed by the Division of Instructional Technology on behalf of school locations, essentially Phases I and II of the Technology Refresh Initiatives. While conducting our audit, Instructional Technology was in the process of completing Phase III of the refresh initiative. According to Instructional Technology, they have since completed that phase and are currently in the process of completing Phase IV. We did not audit computer purchases made during Phases III and IV, because

the complete purchase/placement cycle for those phases was incomplete while we were performing our audit. Nevertheless, the department's processes we reviewed were current and applied to all phases of the Technology Refresh Initiatives (Phases I – IV).

This initiative was designed to provide access to modern computers[1] and other appropriate technology to our students and teachers. The goal is to provide one modern computer for every four students (1:4 ratio). Instructional Technology was charged with implementing the District's initiative, and it developed a strategy of phased implementation to achieve the District's goal of modernizing school computers. Our audit reviewed Phases I and II implementation. Phase I (FY 2006-07) of the refresh initiative entailed replacing existing computers with new, modern computers for student use. This phase directly affected the 'modern computer-to-student ratio. Phase II (FY 2007-08) principally entailed providing laptop/desktop computers to the teachers in the District to facilitate improved record-keeping and for use with the "Grade Book" software. The District's goal was that 100% of its teachers receive a modern computer, and to effect this goal, Instructional Technology initially targeted schools where 75% or more of their teachers did not have modern computers. Nevertheless, Phase II also included a significant amount of additional student computers, which affects the "modern computer-to-student ratio."

Our audit concludes that the objective of providing schools with new computers is largely being met. Proper accounting for new computers is in place; and, for the most part, the target population is using these computers. School administrators expressed overwhelming satisfaction with the equipment they received. Although the criteria and methodology used to prioritize the ranking of school sites for computer placement were not documented, we found them to be sound. Moreover, this methodology generally ensured equity in the placement of computers among the District's schools. However, while a substantial level of relative equalization occurred, a greater level of equalization could have been achieved at some schools through Phase I purchases if the quantity of computers purchased for each school was based on each school's specific needs rather than the standard 60 or 120 allotments. We found that even after these purchases, some schools had a greater need for additional computers, whereas, other schools had an excess of computers (i.e., the number of "additional computers needed" was a negative number). In addition, information provided by Instructional Technology indicated that the department does perform a measure of follow-up.

[1] The definition of "modern computer" is a moving target, but refers to computers that falls generally in the 3-5 year age range.

Our audit also concludes that the department's operating guidelines and procedures relative to instructional computer purchases and placement need to be better documented. The written guidelines/procedures presented for audit lacked specific step-by-step guidance for critical processes and could lead to loss of institutional knowledge. Written guidelines and procedures, which clearly delineate specific processes, areas of responsibility for individual, school and departments, and required coordination between departments and schools could enhance operations and ensure consistency. Also, informal procedures are in use, but are inconsistently followed.

Personnel in Instructional Technology are instrumental in developing the technology bid specifications for all District computer purchases. Fundamentally, the existing committee structure used to develop these bid specifications is sound. Nevertheless, the process could be enhanced by including individuals with current hands-on technical school site experience on the Bid Specification Review Team that is responsible for modifying the technology bids. Currently, that team does not contain anyone who is assigned to the schools to observe the effectiveness, usefulness and ruggedness of the equipment specified in the technology bids.

The technology bid specifications and the District's needs should be aligned. The bid specifications and purchasing decisions are not aligned with district school site needs. None of the orders examined in our sample contained anti-theft devises, such as lockdowns for the equipment purchased. In fact, lockdown systems are not included in the shopping cart. Headsets included in the bids were said to be of poor quality and not suited for classroom use. Accessories and software installation services that are not always needed or used at school sites are bundled together with computers. This leads to excess unused inventory remaining in storage, in their original packaging, for extended periods and installation services that are of little or no value, or at times paid for, but not received.

A total unused inventory of approximately $271,000 was counted at the 22 school sites visited. We were able to trace $214,700 of that amount directly to purchases made by Instructional Technology. Eighty-three percent of the sample purchases made by Instructional Technology ($178,100) were computers and flat panel monitors found unused in storage (some still in their original boxes). The balance of the excess inventory purchased by the department, 17% ($36,600), was unused accessories equipment, and small parts.[2]

[2] The values of the equipment found in storage were ascertained via 1) the appropriate Dell breakout bid details, 2) the State bid pricing list, or 3) if no price was available, items were valued at $0.00 and was usually the case where equipment had been in storage for 3 or more years.

A preliminary readiness assessment to determine if infrastructure is in place to adequately support the added load to an existing facility is essential to effectively update technology. Such assessment would require coordination among several departments and schools. We found no evidence that preliminary readiness assessments are being performed in a systematic or timely manner. This void was the reported cause for delays in the installation of equipment. Instructional Technology contends that the delays were caused by other factors, which were outside of their control or responsibilities.

Information provided by Instructional Technology indicated that the department does perform a measure of follow-up to instructional computer placement. However, despite their efforts, the conditions noted and representations made to us by school staff during our site visits suggest that the process is in need of further improvement. This was especially evident due to the extended period between the genesis and detection of the problems and their resolution. Installation of computers valued in excess of $100,000 was delayed at various schools sampled and overpayments in excess of $10,000, to vendors for installation services were noted. It is important to note that responsibility for the apparent breakdowns in the system may not lie solely with any single department that is involved in the process, but is, in most cases, shared.

The preceding summary presented only a brief overview of the conditions found during our audit. Pertinent information, which is integral to fully understanding the facts and circumstances surrounding those conditions are presented in the detailed findings and recommendations section of the report.

Based on our observations, we made 15 recommendations. Responses along with explanations from management are included herein. Our detailed findings and recommendations start on page 12.

INTERNAL CONTROLS

The charts below summarize our overall assessment of the internal controls of the District's electronic instructional technology purchasing and placement practices.

INTERNAL CONTROLS RATING			
CRITERIA	**SATISFACTORY**	**NEEDS IMPROVEMENT**	**INADEQUATE**
Process Controls		**X**	
Policy & Procedures Compliance		**X**	
Effect		**X**	
Information Risk		**X**	
External Risk		**X**	

INTERNAL CONTROLS LEGEND			
CRITERIA	**SATISFACTORY**	**NEEDS IMPROVEMENT**	**INADEQUATE**
Process Controls	**Effective**	**Opportunities exist to improve effectiveness.**	**Do not exist or are not reliable.**
Policy & Procedures Compliance	**In compliance**	**Non-Compliance Issues exist.**	**Non- compliance issues are pervasive, significant, or have severe consequences.**
Effect	**Not likely to impact operations or program outcomes.**	**Impact on outcomes contained.**	**Negative impact on outcomes.**
Information Risk	**Information systems are reliable.**	**Data systems are mostly accurate but can be improved.**	**Systems produce incomplete or inaccurate data which may cause inappropriate financial and operational decisions.**
External Risk	**None or low.**	**Potential for damage.**	**Severe risk of damage.**

BACKGROUND

Throughout the years, the District identified the need to update its instructional technology. At its May 25, 2007 meeting, the School Board approved entering into a $50 million Master Technology Lease Agreement to fund various technology acquisition projects. Staff had proposed using $23.8 million (48%) of the funds received to purchase computer hardware for classrooms to provide equitable access to technology resources across schools. The remaining $26.2 million were to be used for the acquisition of a sundry of other technologies, including software, software licensing and support, and miscellaneous devices and services. Later at its November 7, 2007, the School Board accepted $19.9 million from the Microsoft Antitrust Litigation Settlement. Staff had proposed using $14.4 million (72%) of these funds for identified technology projects and $5.5 million to offset general fund expenditures in the designated schools.

According to records received from the Division of Instructional Technology, Instructional Materials, and Library Media Services, they expended $4.2 million to purchase computer hardware and software during Phase I of the Technology Refresh Initiative. Those records also indicated that the division expended another $14 million for computer hardware and software purchases under Phase II of the Technology Refresh Initiative. Of this amount, $3.2 million was from the Microsoft Antitrust Litigation Settlement. In addition, the division expended another $7.8 million for technology purchases funded through Title I.

The Division of Instructional Technology, Instructional Materials, and Library Media Services comprises four functional units – Instructional Technology, Instructional Materials, Library Media Services, and Miami-Dade Online Academy (herein collectively referred to as Instructional Technology). The Division is organizationally aligned under Professional Development and Educational Services, which is aligned under Curriculum & Instruction. (Refer to the organizational chart on page 10.) Instructional Technology was charged with managing the instructional technology projects. Those projects were designed to be implemented in various phases.

The Division's broadly stated functions are:

Instructional Technology Department

- *Provide leadership and support for school technology programs*
- *Support the district goal of improving student achievement through the integration of technology across the curriculum*
- *Provide and maintain district-wide instructional technology tools and systems*

- *Provide supplemental virtual instruction opportunities to students through the Miami-Dade Virtual School program*

Library Media Services Department

- *Provide leadership & support for school library programs*
- *Provide equitable access to library media resources to all schools through the provision of online, reference databases*

Instructional Materials Department

- *Coordinates the selection, acquisition, inventory, and disposal of instructional materials*

Miami-Dade Online Academy

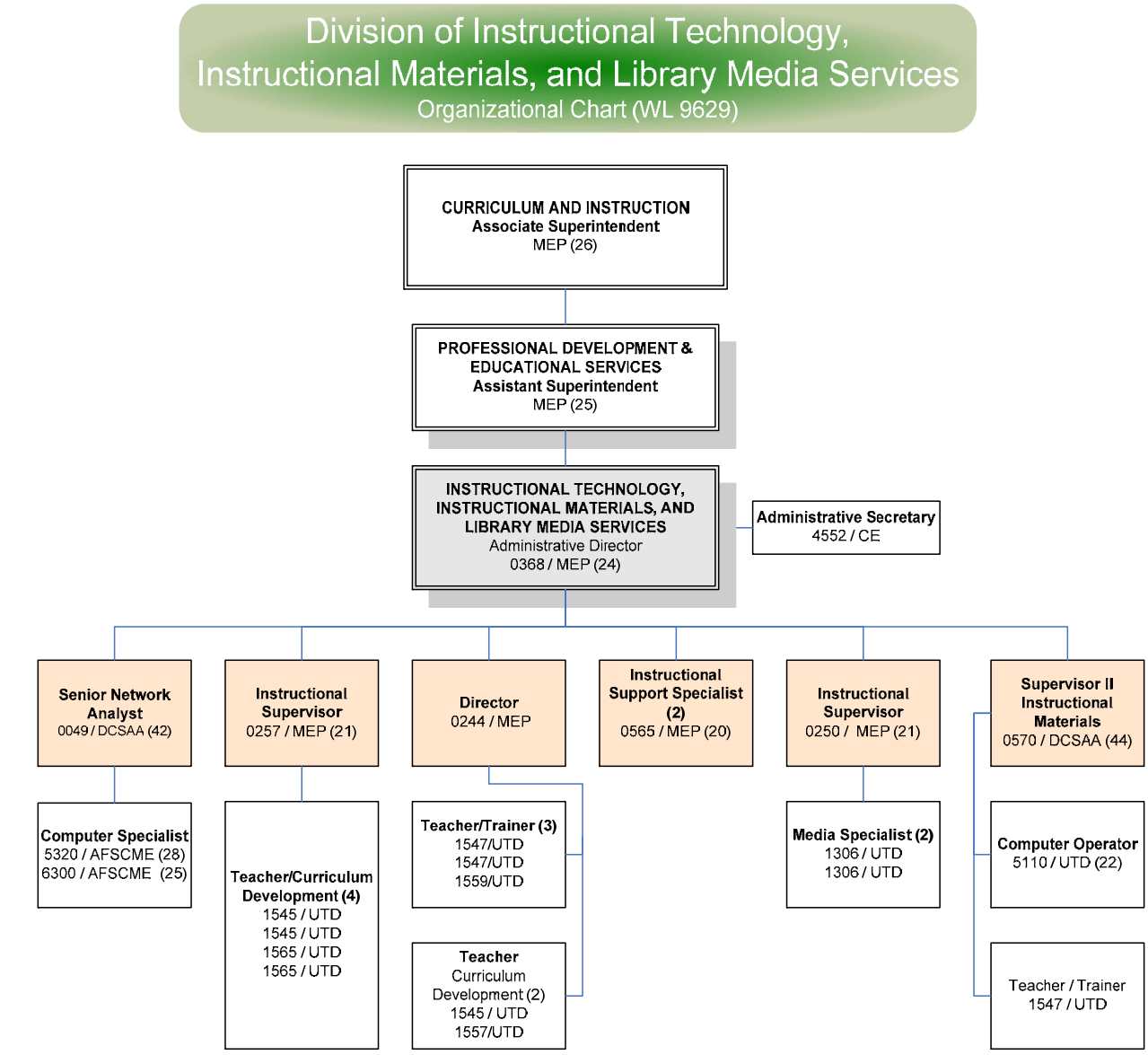
- *Provide full-time instruction to students in grades K-12*

To achieve these broadly stated functions, the collective job tasks performed by the units within Instructional Technology include: (1) identifying and selecting appropriate instructional materials; (2) acquiring, organizing, and making available for use the sources of information needed to purchase and maintain instructional materials; (3) providing professional development and instruction in the use of electronic components; (4) compiling a report on the schools' computer inventory based upon the state annual survey of technology usage at the schools and other data; (5) developing and managing instructional materials budget; (6) monitoring the expenditure of technology funds; (7) participating in the request for proposals (RFP's) and bid development process for hardware and software to ensure the lowest costs. (8) providing a range of digital tools and teaching materials; (9) providing on-line professional development, virtual education materials and courses; and (10) interfacing with Media Specialists and Teachers to integrate technology into the libraries and classrooms.

Upgrading technology in the schools involves input from various other district departments, including Information Technology Services (ITS), School Operations, and Procurement Management Services (Procurement). Each has its roles, some of which overlaps. The following briefly describes the roles of each of the other departments:

ITS	District/School Operations	Procurement
• Reviews list of schools identified for technology upgrades • Reviews/updates technology bid specifications • Communicates classroom infrastructure and technology needs with IT and School Operations, and facilitates/completes infrastructure upgrades, funds permitting • Maintains network infrastructure • Monitors technical staff at schools to ensure timely installation of computers and provide installation support to schools that need it • Monitors classroom technology equipment using Bix Fix and input from school and regional technical staff • Facilitates technical staff at schools that are transferring or disposing of equipment • Reports equipment malfunction patterns to Procurement	• School Administrator will fill out the Technology Needs Assessment survey and results will be shared with the Regions • District School Operations and Regions confirm/ identify schools with technology needs • School Administrators collaborate with ITS to identify barriers (space, data, electrical, furniture) prior to technology deployment and request assistance from IT and/or ITS • Coordinates with school based technician (SBT)/ITS timely installation of newly received technology • School Administrators will maintain computer inventtory • SBT and School Administrator will collaborate to provide feedback on product viability to Procurement	• Revises/updates technology bids specifications in bid solicitations or proposals with specifications provided by IT and ITS • Facilitates the purchase of appropriate technology through bids and other mechanisms • Collects information from schools about the viability of the technology purchased

ORGANIZATIONAL CHART



Note: During the audit, the reporting line of Instructional Technology, Instructional Materials, & Library Services changed from Early Childhood Education to the present reporting line.

OBJECTIVES, SCOPE AND METHODOLOGY

Our audit covered the District's processes relative to instructional computer technology updates. In planning the audit, we developed our scope to review the processes, including the purchasing practices, relative to instructional technology purchases and placement during the period of July 1, 2006 through June 30, 2008. During the course of our audit, it became evident that the activities related to the purchases selected for testing, to assess the processes being audited, were incomplete as of June 30, 2008. Consequently, testing and evaluation of those activities had to be extended through June 30, 2009, when the processes and activities relative to those purchases that were initiated between July 1, 2006 and June 30, 2008 were completed. This afforded us the ability to assess the completed processes relative to instructional computer technology updates.

To achieve our audit objectives, we focused our scope on computer equipment that were purchased and placed by the Division of Instructional Technology on behalf of school locations, essentially Phases I and II of the Technology Refresh Initiatives. While conducting our audit, Instructional Technology was in the process of completing Phase III of the refresh initiative. According to Instructional Technology, they have since completed that phase and are currently in the process of completing Phase IV. We did not audit computer purchases made during Phases III and IV, because the complete purchase/placement cycle for those phases was incomplete while we were performing our audit. Nevertheless, the department's processes we reviewed were current and applied to all phases of the Technology Refresh Initiatives (Phases I – IV). The objectives of our audit were to:

- Assess whether adequate planning and controls are in place to assure that hardware and software are being purchased in the most appropriate and effective manner.
- Assess the decision-making process used in allocating purchased technology.
- Evaluate whether purchased equipment are placed in locations with adequate infrastructure to support their use.
- Evaluate whether the equipment was installed in a timely manner and is being utilized by the target population.
- Evaluate whether equipment is properly inventoried and accounted for.

Procedures performed to satisfy the audit objectives were as follow:

- Interviewed district, regional, and school site staff

- Analyzed departments' purchasing practices and procedures, where available, and bid development process.
- Surveyed, on a sample basis, purchases made for specific school sites.
- Conducted inventories of unused equipment and accessories at sample school sites.
- Verified placement and appropriate use of computer equipment purchased for sampled school sites.
- Performed various other audit procedures as deemed necessary.

We conducted this performance audit in accordance with generally accepted Government Auditing Standards issued by the Comptroller General of the United States of America. Those standards require that we plan and perform the audit to obtain sufficient, appropriate evidence to provide a reasonable basis for our findings and conclusions based on our audit objectives. We believe that the evidence obtained provides a reasonable basis for our findings and conclusions, based on our audit objectives. This audit included an assessment of applicable internal controls and compliance with the requirements of policies, procedures and rules to satisfy our audit objectives.

FINDINGS AND RECOMMENDATIONS:

1. GOAL OF MODERNIZING COMPUTERS IN SCHOOLS IS BEING SATISFIED

In general, the objective of providing schools with new computers to meet the District's stated goal of "one modern computer for every four students" is largely being met, within the limits of current technology funding. Moreover, on-site visits verified proper accounting for new computers; and, for the most part, these computers are being used by the target population. School administrators expressed overwhelming satisfaction with the equipment they received.

Instructional Technology developed a strategy of phased implementation to achieve the District's goal of modernizing school computers. Our audit reviewed Phases I and II implementation. Phase I of the refresh initiative entailed replacing existing computers with new, modern computers for student use. This phase directly affected the 'modern computer-to-student ratio. Phase II principally entailed providing laptop/desktop computers to the teachers in the District to facilitate improved record-keeping and for use with the "Grade Book" software. The District's goal was that 100% of its teachers receive a modern computer, and to effect this goal, Instructional Technology initially targeted schools where 75% or more of their teachers did not have modern computers. Nevertheless, Phase II also included a significant amount of additional student computers, which affects the "modern computer-to-student ratio."

According to the "Student/computer Survey Reports" Instructional Technology prepared, in Phase I, 83 of the 311 schools listed in the report received modern computers. During this phase, a total of 5,050 school computers were purchased by Instructional Technology. In Phase II, Instructional Technology purchased and distributed 15,258 computers to 206 of the 320 schools listed in the "Student/computer Survey Report". Included in that total were 5,913 student computers. Progress toward the goal of one modern computer for each four students was made. Refer to the tables below.

Analysis of the Change In the Ratio of One Modern Computer For Every Four Students For Schools Surveyed			
Number of schools with 1:4 ratio ***or lower***[3]	Before	After	Increase
Phases I (311 schools surveyed)	183 (58.8 %)	200 (64.3%)	17 (9.3%)
Phases II (320 schools surveyed)	176 (55.0 %)	200 (62.5%)	24 (13.6%)

Table 1

Although not brought into full compliance with the stated goal, a number of the neediest schools were brought within more reasonable reach of the stated goal to 10 students per computer. Table 2 below shows these changes. The schools listed in Table 1 above are also included in Table 2. Also, refer to Finding 6 on page 33 of this report.

It is important to keep in mind the challenge that exists in attaining and maintaining full compliance with the stated goal due to the fact that the definition of a modern computer continues to evolve. Also contributing to this conundrum is the limitation on the availability of funds.

Analysis of the Change In the Ratio of One Modern Computer For Every Ten Students For Schools Surveyed			
Number of schools with 1:10 ratio ***or lower***[4]	Before	After	Increase
Phases I (311 schools surveyed)	278 (89.4%)	296 (95.2%)	18 (6.5%)
Phases II (320 schools surveyed)	273 (85.3%)	288 (90.0%)	15 (5.5%)

Table 2

As of the date of this report, the refresh initiative has advanced to later phases (i.e., III and IV). We did not review the activities of those phases. Therefore, we do not comment on their nature and status.

[3] The number of schools falling within the 1:4 ratio before Phase II purchases varied from the number of schools meeting that ratio after Phase I purchases due to changes in the definition of modern computers. Thus, some computers that were previously deemed to be modern computers, were no longer so deemed at the time of making Phase II purchases.

[4] Please refer to Footnote 3.

RECOMMENDATIONS

1.1 Continue working towards increasing the number of schools that have met the District's stated goal of 'one modern computer for every four students'.

Responsible Department: Division of Instructional Technology

Management Response: The Division of Instructional Technology will continue to purchase classroom computers for schools with a goal of one modern computer for every four students; however, this will not be an attainable goal unless the district is able to invest approximately $18 million dollars annually to replace one fifth (assuming a five year life span for classroom computers) of the district's approximate 127,000 instructional computers. Short of that, computers will be replaced based on funds available and instructional priorities as identified by Senior Staff.

2. WRITTEN GUIDELINES FOR PURCHASING AND PLACING ELECTRONIC INSTRUCTIONAL TECHNOLOGY CAN BE IMPROVED

Best business practices dictate that an organization and its operating units maintain written standards, policies, and procedures of effective business processes. This helps to provide assurance of fair and transparent allocation of available resources. We found that Instructional Technology did not maintain adequate comprehensive written general guidelines or procedures to effectively manage or execute the purchasing and placement of electronic instructional technology. However, based on the responses received from the department's staff, it was determined that informal procedures are in use, but they are inconsistently followed.

We formally requested a copy of the written policy and procedures manual from the department head, and was provided the following written general guidelines at Exhibit 1 that are used for the selection and distribution of new equipment:

Exhibit 1

Information for Audit on Technology Purchasing for Schools

Computer Hardware

- The great majority of hardware purchased by this office is to replace existing obsolete equipment at schools.
- Schools are targeted based on:
  - Available funds,
  - Percentage of obsolete equipment reported on fall or spring survey, and
  - Instructional priorities such as differentiated accountability schools, reading program needs, etc.
- A spreadsheet is created identifying schools targeted to receive replacement equipment and the quantity of computers to be purchased. This information along with selection criteria is then shared with
  - ITS
  - Regional Superintendents
  - Regional Technology Specialists

  The offices listed above are asked to confirm that these schools are in need of equipment. They are also asked to identify any schools that have critical need s but have somehow been overlooked (probably because they didn't report accurately on one of the surveys).
  They are also asked to identify any other technology issues at these schools that they may be aware of.
- Quantities are typically between 60 and 120 computers
- After the list is vetted, school principals are contacted as to their choice of manufacturer
- Orders are placed through the shopping cart for district approved hardware
- Setup is purchased for all elementary schools and for secondary schools that request it (the rationale for this is as follows - all traditional secondary schools have full-time technicians while many elementary schools still share a technician)
- Schools are notified that orders have been placed
- Once computers are received and setup (if applicable), schools fax the packing slip(s) to our office and send an email indicating setup is complete in order for our office to do receiving
- Records of purchases are maintained in our office and that information is cross referenced with data reported by schools on surveys

Source: Instructional Technology

Notwithstanding the reported process flow, we noted that specific instructions, processes, and responsibilities (those of Instructional Technology and other involved departments) are not documented. For example, while not all inclusive, specific step-by-step guidance regarding the following could be documented to

preserve the institutional knowledge within the department:

- Steps taken to identify funding sources; identify any attendant requirements or restrictions; and manage and control the use of those funds
- How to obtain the equipment surveys and steps to be taken to verify the accuracy of the data
- What should be done in the absence of receiving the survey data
- The role of each office and department that are involved in the process (i.e., what is expected from them) and develop a mechanism to monitor their feedback to ensure that the appropriate response is received
- Defining the nature, timing, and archiving of required communication with the school (e.g., specific form to complete, require signature to obtain, etc.)
- Describing the types of documents and communication to maintain on file
- Describing the required documentation to be obtained when it is necessary to deviate from the stated general criteria
- A checklist to ensure that all requirements and coordination have occurred

In addition, we noted that institutional knowledge is transferred principally via new employees being trained by their predecessor. Both conditions could result in loss of institutional knowledge. In addition, responsibility for certain actions and coordination between departments and schools are not well defined. Informal procedures are inconsistently followed.

We acknowledge management's assertion that the function of purchasing and placing computer technology on behalf of district departments and schools is only a part of their responsibility. Further, while each district computer technology initiative or project may have its own unique set of requirements, as management has indicated, there are general guidelines that are universal to implementing and managing those initiatives or projects. These may include, but are not limited to, identifying critical points of coordination, required documentation and authorization, funding, follow-up, and project closeout, as detailed above.

The effect of not having adequate written guidelines and procedures, which include documenting processes followed to manage the purchase and placement of computer technology, was experienced during the conduct of our audit. While Instructional Technology personnel were very cooperative and did their best to provide information we requested, the sudden loss of key personnel from the department during the audit led to significant delays in obtaining information that was clear and complete in some cases, as the remaining department personnel were not fully familiar with some of the records and processes, and were unable to provide the auditors with targeted information.

RECOMMENDATIONS

2.1 Expand the existing written general guidelines Instructional Technology provided to document the department's processes in implementing and managing electronic technology initiatives/projects for which it is responsible. Those guidelines and procedures should be comprehensive and should include identifying critical points of coordination, staff responsibilities, required documentation and authorization, protocol required to document exceptions, follow-up, project closeout, etc.

Responsible Department: Division of Instructional Technology

Management Response: The Division of Instructional Technology will expand upon existing guidelines in order to more clearly delineate roles and responsibilities of schools and the district offices involved in future technology projects. Development of these guidelines will occur prior to initiating any new purchase projects. However, it should be noted that staff did maintain comprehensive documentation including spreadsheets containing technology statistics for each school at the time of the purchases and for the schools selected for inclusion in the projects, as well as surveys showing follow-up with schools after the delivery of the computers. In Phase I, Regional Centers made some decisions about which schools to include in the project which were exceptions to the documented statistical and survey data but were based on other criteria of need such as Differentiated Accountability category. In the future, set procedures for documentation of exceptions will be established and adhered to.

2.2 Develop a quality control process to ensure consistent adherence to approved procedures and processes. This process may include developing checklists to verify the process and cross-training staff.

Responsible Department: Division of Instructional Technology

Management Response: Management will develop a quality control process in conjunction with the development of expanded procedures prior to initiating any new purchasing projects.

3. BID SPECIFICATIONS FOR CLASSROOM/LABS COMPUTER SYSTEMS ARE NOT ALWAYS ALIGNED WITH SCHOOL NEEDS

The composition of the equipment bids and the group charged with developing the bid specifications[5] is integral to the District's maximizing the effectiveness and durability of instructional technology equipment and financial savings. This can be achieved when the appropriate stakeholders are involved in identifying the District's instructional technology needs and the bid specifications accurately reflect those needs.

Our review of the instructional technology bid development process and our site observations disclosed the need for improvements. We noted the following conditions:

- **Not all of the appropriate stakeholders are involved in making decisions pertaining to what should be included in the bid specifications for instructional technology equipment purchases.**

  A small group comprising two employees from Instructional Technology (the Senior Network Analyst and the Instructional Supervisor) and one employee from ITS (the Coordinator II, IT Contracts) meets every six months to determine whether the bid specifications for all district computer and software purchases still meet the needs of the District. Absent from this group is someone with current day-to-day, hands-on knowledge about the effectiveness and usefulness of the equipment and their durability in a classroom setting. The full Technology Bid Committee, (a group of employees distinct from the small group of employees mentioned above), only meets at the time the bid is let, (every five years), to ratify the specifications that are presented to the Purchasing Department, to be included in the Request For Proposal (RFP). The bids are awarded for a period of five years, with modifications allowed by M-DCPS once every six months. Therefore, the three employees mentioned above would define these modifications, since the full committee does not convene to approve the modifications. The current bid has been in effect over 2 years.

- **The items bundled in the existing bids do not always reflect the**

[5] The bid specifications refer to the detailed description of all goods and services listed in the bid.

actual needs of the schools, often resulting in the accumulation of excess unused computer equipment at the schools.

Accessories are included as a part of the bundled bids. Items purchased from the shopping cart automatically include these accessories, regardless of need. When items are properly bundled in the bids, the District is able to maximize financial savings. Avoiding the inclusion of unnecessary add-ons of goods and services to computer bid packages, will also allow such savings to be realized.

We observed excess computer equipment inventory of approximately $271,000 at 20 of the 22 schools visited (please refer to Table 3). We were able to directly trace $214,700 of that amount to purchases made by Instructional Technology. Eighty-three percent ($178,100) of the sample purchases made by Instructional Technology were computers and flat panel monitors found unused in storage (some still in their original boxes).

The balance of the excess inventory purchased by the department, 17% ($36,600), was unused accessories, equipment, and small parts.[6] Of the 22 sites visited, the two schools with the largest unused inventory were Miami Southridge Senior High (visited May 15, 2009) with 96 computers (received May 2008) and Ernest Graham Elementary (visited June 25, 2009) with 50 computers (received May 2008). The computers stored at these two locations account for $137,000 (51%) of the $271,000 reported.

[6] The values of the equipment found in storage were ascertained via 1) the appropriate Dell breakout bid details, 2) the State bid pricing list, or 3) if no price was available, items were valued at $0.00; which was usually the case where equipment had been in storage for 3 or more years.

Table 3 below shows the cost of the excess inventory found in the sampled schools, as well as the range, from the longest to the shortest number of days, the inventory had been held in storage, as far as could be ascertained. This included only new equipment, often found in its original shipping cartons.

Excess New Equipment Inventory at Sample Schools							
School	Purchases Made By Instructional Technology			Purchases Made By Other Sources			Total Cost
	Cost	Days in Storage		Cost	Days in Storage		
		Longest	Shortest		Longest	Shortest	
North Miami Senior High	$ 0	N/A	N/A [7]	$ 0	N/A [7]	N/A [7]	$ 0
Van E. Blanton Elementary	0	N/A	N/A [8]	0	N/A [8]	N/A [8]	0
Village Green Elementary	240	761	761	588	U [9]	U [9]	828
West Laboratory Elementary	786	694	694	398	U [9]	U [9]	1,184
Juvenile Justice Center	-	N/A	N/A	1,201	785	281	1,201
Jan Mann Opportunity School [10]	-	N/A	N/A	1,725	267	267	1,725
Palm Springs North Elementary	1,842	629	490	477	U [9]	U [9]	2,319
Miami Heights Elementary	1,878	476	476	1,194	U [9]	U [9]	3,072
Joella Good Elementary	3,578	698	456	138	U [9]	U [9]	3,716
Lorah Park Elementary	2,297	512	512	1,732	803	803	4,029
W.R. Thomas Middle	3,177	700	354	1,152	835	835	4,329
Eneida Hartner Elementary	3,304	977	475	1,112	U [9]	U [9]	4,416
William Lehman Elementary	3,912	493	416	2,474	777	553	6,386
West Miami Middle	-	N/A	N/A	8,512	189	189	8,512
Ruth K. Broad Bay Harbor Elem.	336	628	628	8,240	2226	320	8,576
Miami Springs Senior High	8,013	661	482	676	U [9]	U [9]	8,689
Jack D. Gordon Elementary	10,186	604	317	309	757	589	10,495
Coral Gables Senior High	4,871	661	219	6,421	687	183	11,292
Palm Springs Elementary	4,053	391	238	10,891	115	115	14,944
Hialeah Senior High	21,200	1060	330	6,220	1053	304	27,420
Ernest Graham Elementary	54,901	987	400	1,213	724	724	56,114
Miami Southridge Senior High	90,144	700	358	2,095	1220	543	92,239
Total Value / Storage Range	**$214,718**	**1060**	**219**	**$56,768**	**2,226**	**115**	**$271,486**

Table 3

Specific items that were found in greatest quantity included:

- 2,354 assorted speakers found at 19 (86%) schools, valued at $20,787 [11]
- 2,239 desktop microphones found at 19 (86%) schools, valued at $20,921
- 1,238 headsets found at 16 (73%) schools, valued at $10,484

[7] North Miami SHS claimed to maintain no excess equipment. The SBT says he trades all excess to other schools.
[8] Van E. Blanton maintains no excess equipment due mainly to the amount of theft experienced at the site.
[9] Unable to determine the days in storage due to records not being available.
[10] Jan Mann Opportunity School is now known as Young Women's Academy for Academic and Civic Development at Jan Mann Opportunity School
[11] One thousand ninety-seven (1,097) of the 2,354 speakers found in storage were Model A225 Desktop Speaker sets. These were valued at $0.00 since a specific price could not be ascertained.

- 1,987 patch cables found at 17 (77%) schools, valued at $12,191

  Eleven of the orders in our sample included desktop speakers, speaker bars, and headsets. In general, speakers are not used in classrooms or in most computer lab setups due to the noise levels. School site staff indicated that when speakers are provided, speaker bars are preferred.

  Desktop microphones were mainly used in special programs, and not for the general school population. Therefore, bundling these microphones with each computer purchase resulted in an accumulation of unneeded equipment.

  According to School Base Technicians (SBT) interviewed, patch cables accumulated because they are usually able to re-use existing patch cables when replacement computers are purchased. Therefore, many of the new patch cables were placed in storage. While we were able to directly trace 492 excess patch cables to Phases I and II purchases, and another 119 to other identified sources, 1,376 others were from unknown sources.

- **Some accessories purchased for in-class and laboratory use are not suitable for classroom or laboratory use.**

  The School Base Technicians (SBT's) at four of the schools that use headsets in classrooms and labs complained that the headsets being provided are of such poor quality and durability that they break down in a very short period of time. Therefore, some schools resorted to purchasing more robust headsets from sources other than the shopping cart, and leaving the provided headsets in storage.

- **Specifications for vendor set-up and installation do not accurately represent what is needed at the schools.**

  Factory installation of Microsoft Office is included in the bundled price and charged at a rate of $20 per unit[12]. Seventeen of the orders included in our sample listed this charge, totaling approximately $23,000, for "per system, readyware volume license installation fee" in the detailed

[12] This is in addition to the actual per-unit software license.

breakdown of charges. However, the SBTs at the school sites must re-image each computer before students or school personnel can use them. Typically, to re-image the computers, the SBT would remove one computer from its carton, install all needed applications on that computer and then copy the profile or image from that computer onto all other computers. Consequently, the amount paid for factory imaging is an unnecessary expenditure.

Apart from the factory imaging services purchased, vendor hardware set-up services are billed as a separate line item if requested by the specific location. This set-up service mainly consisted of removing computers from their boxes (after the school personnel had moved all boxes to the proper location), plugging in cables and removing the dunnage.

- **Physical security of computer equipment at school sites could be improved and may have resulted in the accumulation of excess computer monitors in storage.**

  None of the orders examined in our sample contained anti-theft devices, such as lockdowns for the equipment purchased. In fact, lockdown systems are not included in the shopping cart. Our school site visits disclosed that while some schools had lockdown systems installed with their computer equipment, most schools visited did not.

RECOMMENDATIONS

3.1 Collaborate with Procurement Management Services and Instructional Technology Services and expand the bid specification review team to include at least one School Based Technician with current hands-on school site experience relative to the needs of the schools. As the team reviews the specifications for computers to be included in the shopping cart, their efforts should include identifying the typical uses and needs of classroom and laboratory computers; developing one or more standard baseline system configurations, based on intended application; including only needed hardware and software in the packages; and providing adequately tested, institutional-grade peripherals and accessories, and upgrade to factory installed memory as options.

Responsible Department: **Division of Instructional Technology, Procurement Management Services, and Information Technology Services**

Management Response:

Division of Instructional Technology – The Division of Instructional Technology will work with Information Technology Services and Procurement Management Services to expand the bid review team. While the suggestion to include personnel with current school site experience has merit, the inclusion of instructional personnel who function as school site technology coordinators at various school levels might be more valuable than the inclusion of school site technicians. Technical expertise is provided by district staff; what would be a more relevant addition to the bid review team is school site instructional personnel with knowledge of what system components are most useful in the classroom for the end users. This type of information is not typically ascertained from technical staff but rather from instructional staff who are charged with using the technology with students for instructional purposes.

This recommendation also seems to suggest that when computer specifications are developed they do not take into account typical uses of classroom and lab computers. What has not transpired since the 2006-2007 school year, when the five-year bid was issued and the full bid committee was convened, is the reconsideration of bundled accessories such as headsets and microphones. With each reissuance of the bid, computer hardware specifications were updated, but the bundled accessories remained as when the bid was originally issued. The decisions were valid at the time they were made, as expensive headsets were being destroyed and stolen at the same rate as inexpensive ones and patch cables were in short supply district-wide. Going forward, the inclusion of these items will be reconsidered with each reissuance of the bid in order to ensure that bundled accessories are still valid and appropriate.

It should also be noted that, historically, Miami-Dade County has paid less for classroom computers than other districts in the state and that the bundled accessories are standard items included with classroom computers across the state. However, items which do not have a viable role in the classroom should be eliminated and this has already taken place. Classroom bundles on the latest refresh of the current bid were changed to allow for either speakers or a headset, but not both. Freestanding microphones are no longer included, nor are patch cables.

Additional changes can be made in subsequent refreshes of the bid based on the group's decisions.

On page 23, the audit report states that eleven of the purchase orders (PO's) in the sample included desktop speakers, speaker bars, and headsets. While shipments did include all of the items mentioned, this was due to an error in the bid and it should be noted that there was no charge for the speakers. The error was due to the transition from cathode ray tube (CRT) monitors to flat-panel monitors that could be equipped with a speaker bar as an upgrade. On the Dell units in question, speakers continued to be included with the CPU purchase though this was not apparent on the district's shopping cart used to place these orders. In addition, it needs to be noted that this was the beginning of the five year bid, which was reviewed by the entire bid committee, not solely staff from Information Technology Services and Instructional Technology. These computers were the first batch of orders placed in the district utilizing that bid. It should be noted that this issue has been corrected.

Procurement Management Services – Procurement Management Services will include one school-based technician identified by the Division of Instructional Technology, and Information Technology Services in the bid specification review.

Information Technology Services – **Agree.** As a replacement for one School Based Technician (SBT) from a school site, we suggest that two Supervisors from ITS' Infrastructure and Systems Support division be added to the committee. One of these individuals is an engineer and the other is in constant contact with all SBTs and has access to highly technical staff. The addition of an engineer and an individual who works closely with all SBTs will lend itself to having all new platforms thoroughly tested and evaluated prior to updating the shopping cart. Additionally, we recommend that one individual from Management Audits also be added as a participating member in this committee.

3.2 Encourage school site technicians and administrators to use the Vendor Performance Survey or another reporting mechanism to share information regarding the effectiveness and durability of computer technology, in order to improve equipment specifications for items on the shopping cart. This could be accomplished when notifying schools about planned technology purchases or during follow-up to such purchases and placement.

Responsible Department: **Division of Instructional Technology**

Management Response: When notifying schools of pending computer shipments, the Division of Instructional Technology will remind schools to complete the Vendor Performance Survey after the receipt of goods. Staff recommends that Information Technology Services (ITS) share in this responsibility and that they encourage school site technicians, who report to ITS, to provide this type of firsthand feedback as applicable.

Information Technology Services – Instead of the "Vendor Performance Survey," if the "Management Response" from Recommendation 3.1 is implemented, the report generated by the committee will be the "reporting mechanism" referred to in 3.2. This report will act as a guide for all school-site administrators and assist them in purchasing the most effective equipment for their schools' respective use. Using the report from the review team may provide similar results to the Survey results; furthermore, it is difficult to implement and monitor surveys, especially given the loss of staff resources.

3.3 Complete a cost-benefit analysis regarding the feasibility of providing a full system lockdown kit that protects both computer and monitor with each system installed at school sites. If deemed cost effective, include the system(s) as options on the shopping cart.

Responsible Department: **Information Technology Services**

Management Response: **Agree.** Using the District-owned, BigFix patch management application, ITS can select the active computer inventory for a specific time period at a randomly sample of schools and produce a report for each school's inventory. At a later date and for the same schools, there would be another inventory with the respective report. The information in the reports from the same school would be compared to review the exceptions and determine if computers are missing at a rate that would warrant the expense of purchasing costly and troublesome lock-downs.

3.4 Collect unused excess computers and accessories (speakers, microphones, and patch cables) stored at schools and maintain them at a central location for redistribution to schools and departments with identified needs in lieu of purchasing the same or similar items to fill those needs.

Responsible Department: **Information Technology Services**

Management Response: Collecting and sending to one central location may not guarantee that equipment will be used in a timely fashion. This centralization will demand collaboration and time from several departments and lead to loss of productivity. We suggest the SBT be given the opportunity to send an announcement, via email to the "All MST" distribution list asking to reply if anyone is in need of a specific piece of equipment; for example, headsets. SBTs currently follow this procedure and we have seen very good results. Sometimes the advertised items are requested by another school within minutes of the announcement. ITS requests that SBTs alert ITS of any obsolete or unused computers, but this only applies to obsolete computers and it occurs at the beginning and end of the school year. ITS will either request pick-up by the Education Fund or the computers will be picked up by ITS staff and redistributed.

3.5 Consider discontinuing vendor imaging and set-up services in favor of an M-DCPS team performing this function, or redefining this purchased service to include complete on-site set-up and imaging of systems according to each location's needs.

Responsible Department: **Procurement Management Services, Division of Instructional Technology, and Information Technology Services**

Management Response:

Procurement Management Services – Procurement Management Services, as the facilitator for this process, will bid systems as requested by the originating office. However, this office does not agree with the recommendation: not to include the setup for all units. Any computer failure that is not reported within 30 days may be treated as a repair and may not be replaced with a new unit, but with one that may include refurbished parts. Additionally, proper documentation for out-of-the-box failures will not be evident, since these problems will be noted as warranty repairs. This information is vital to identify systems that should not be procured, due to repetitive failures.

Division of Instructional Technology – In this case, "vendor imaging" references the installation of Microsoft Office. Pre-installation of the Office suite was added to district computer purchases to minimize the management of software licensing issues which arise when software intended for one computer is installed on additional computers. Before considering discontinuing this service, district staff in Information Technology Services and Instructional Technology, who are responsible

for Microsoft licensing issues, need to research the issue further to determine if there are potential liabilities for the district. Additionally, while Dell had previously charged $20 for the service, the current cost is $10 and the other two manufacturers, Lenovo and Hewlett Packard, do not charge at all for this service.

While comprehensive imaging services designed to meet individual school needs could be included in the bid, historically the cost of these services has been prohibitive. A custom image was part of the teacher laptop deployment strategy and that effort was met with mixed results and, based on feedback from school site technicians, was discontinued.

As for the setup services, these optional services help to ensure that computers are taken out of boxes, plugged-in, and turned on by the vendor. This helps to avoid warranty disputes since the manufacturer's representative is doing the un-boxing and the reporting of out-of-box failures. Noting out-of-box failures ensures that schools are not saddled with computers that arrive with a factory defect, and that they receive brand new replacement computers. When computers are repaired, they are frequently outfitted with refurbished parts, depending on the defect. Additionally, at a time when the district is losing school based technicians through attrition and district staff has been greatly reduced, these optional setup services are needed more than ever. Management recommends that the imaging and set up services be continued to avoid greater delays in computer deployments and lessen the possibility of warranty disputes.

Information Technology Services – This needs to be researched because is not known the extent to which the software is overwritten; we will investigate if this is the case and adjust accordingly. Due to the District's budget constraints, which affect resources and the use of over-time, it is recommended that "on-site" set-up by the vendor remain an allowable option without vendor imaging.

4. APPROPRIATE REDISTRIBUTION OR DISPOSAL OF UNUSED AND OBSOLETE EQUIPMENT IS NOT PERFORMED IN ALL CASES

Best business practices require that valuable equipment be tracked and inventoried. When equipment is replaced, it is in the best financial interest of the District to recoup as much of the remaining value of the equipment as possible.

M-DCPS invests millions of dollars each year in new and upgraded computer equipment, and retires or surpluses a significant amount of existing, outdated equipment. In general, property costing less than $1,000 is not inventoried or tracked in the Property Accounting system when purchased or surplused. School Based Technicians (SBTs) generally reported that old equipment was sent to Richard's Warehouse[13] for disposal or sent to other schools. We observed a significant amount of older equipment stored in rooms and/or trailer pods on school property. We did not inventory the obsolete equipment. Further, we recognize that not all of this excess and obsolete equipment was purchased through the technology refresh initiatives; and that the issue is of district-wide concerns. Nevertheless, the conditions came to our attention while performing this audit and must be reported to management.

As discussed in Finding Number 3, a substantial number of excess unused computer peripherals and other equipment are also stored indefinitely at school locations. This unused equipment occupies valuable space at already cramped school locations, and may needlessly subject the school to demurrage cost.

It must be noted that no *single* department or division is responsible for this condition. Nevertheless, school site administrators are responsible for identifying their electronic technology needs and managing the movement of equipment at their schools. (Please refer to departments' roles as described on page 9 of this report.) Better communication between the schools and the appropriate departments, and better management by the same could eliminate the conditions noted.

[13] Stores and Mail Distribution satellite

RECOMMENDATIONS

4.1 Instruct all schools to properly surplus and remove excess and obsolete equipment from school locations in accordance with established procedures and rules.

Responsible Department: District/School Operations

Management Response: In order to ensure the appropriate removal of surplus, excess and/or obsolete equipment from school locations in accordance with established procedures and rules in the Manual of Property Control Procedures, the Deputy Superintendent of District/School Operations reviewed the findings in the Office of Management and Compliance District's Instructional Technology Purchasing and Placement Practices Report as it pertains to the appropriate disposal of unused and obsolete equipment with all of the Region Superintendents.

As a corrective and preventive measure, each principal was directed to complete an online survey identifying all obsolete equipment, excessive equipment and identify the location of said equipment. Furthermore, the principals were directed to forward copies of their completed Outgoing Forms (FM1670) to their respective regions. Regions will coordinate with Richard's Warehouse a schedule and plan for removal and storage of this equipment.

A Weekly Briefing was disseminated to all principals and Regions summarizing the proper procedures outlined in Section 3 Recording Property Movement 3.3 Surplus Property.

4.2 Consider developing alternate processes, outside of the District's Property Accounting System, to track and account for certain types of equipment, which are below the $1,000 inventory threshold and are susceptible to theft.

Responsible Department: Office of the Controller

Management Response: Staff has discussed this recommendation with the ERP team. Using the Business Intelligence module (BI) of the recently implemented SAP financial system, information can be requested using specific parameters. Each location can create a report containing the purchasing details for categories such as laptops and desktops computers that can be used to track and account for selected equipment. Action to this recommendation is pending subsequent meetings with School Operations and the Office of Management and Compliance Audits to establish monitoring procedures.

5. PRELIMINARY SCHOOL READINESS ASSESSMENT WAS NOT CONSISTENTLY PERFORMED

Prior to purchasing and delivering computer technology equipment, best business practices and internal controls dictate that staff perform a readiness assessment to determine if adequate infrastructure is in place to adequately support the added load. This assessment should include:

- verifying infrastructure (electrical and data lines) adequacy to support additional load
- space availability
- staff availability for setup and installation of the new equipment in a timely manner

Staff from Instructional Technology indicated that some of these practices are part of their regular pre-purchasing process. According to Instructional Technology staff, personnel from Instructional Technology and Information Technology Services (ITS), jointly conduct a documented walk-through of schools receiving new additional equipment on a case by case basis.[14] Schools receiving replacement equipment do not receive a walk-through since it is assumed that replacing existing computers will not tax existing infrastructure.

Instructional Technology staff stated that since the Refresh Initiative essentially replaced existing computers, performing readiness assessments were not deemed necessary. However, our analysis of computer purchases disclosed that during Phases I and II, computers were not simply replaced but were added to the schools' existing inventories. Therefore, the purchases added load to the electrical system, especially in the case of teacher computers.

Based on the results of our sample, we have determined that preliminary assessment of school readiness and infrastructure is not being performed in a systematic or timely manner. We found no evidence of documented walk-throughs. Moreover, Principals and SBTs contacted did not recall any visits to their schools by either Instructional Technology or ITS personnel, or any less formal inquiry as to their schools' readiness to receive the new equipment. Not performing this assessment, in some cases, caused delays in installation of new equipment, which resulted in some equipment remaining in storage for extended

[14] Instructional Technology administrator in-charge qualified staff's statement, indicating that this assessment is completed only for specific schools and projects (typically, fairly small projects) and that it would be infeasible for Instructional Technology to perform this assessment on larger projects, due to staffing limitations.

periods, awaiting infrastructure upgrades or for space to be made available. For example, Ernest Graham Elementary experienced delays of three to four months, according to school site administrator, due to lack of a sufficient number of wireless access point in some areas in the facility, causing 82 of the 132 new teacher laptops, valued at $76,998 ($939 each) to remain in storage during that period. The remaining 50 laptops were never placed in service at that location, because, according to the school administration, the computers were not needed. Subsequently, the 50 laptops were transferred to Miami Edison Senior High School.

Palm Springs Elementary, reported difficulties and inadequacies with both the electrical grid and the availability and distribution of data drops. They needed to purchase power strips and network switches prior to setup of computers. On our visit to that school, we observed a web of electrical extension cords and surge protectors in classrooms, as well as data drops looping around the walls. Sixty-one new computers were delivered in May, 2008, but installation of the computers was not begun until September, 2008. As of the date of our visit, June 25, 2009, three computers were still not installed because according to the Principal, no additional equipment can be installed in the buildings until the power grid is reinforced, and funding is not available for the necessary upgrades.

In addition, we found that limitations in the physical infrastructure were not the only impediment to bringing the computers on line in a timely manner. Our site visits also disclosed that three of the 18 Phase I schools (17%) experienced delays in setup in excess of 60 days due to technical staff shortages.

We acknowledge that school site administrators are responsible for identifying their electronic technology needs and managing the use of equipment at their schools. It is also a fact that school site administrators bear a responsibility to alert Instructional Technology of known deficiencies in school infrastructure (storage and utilities). We further recognize that completing readiness assessment requires certain specific and varied skill sets, not all of which might reside in Instructional Technology. However, being responsible for implementing and managing the District's instructional technology, staff in Instructional Technology have the required skill set to coordinate this effort to ensure that it is completed by the appropriate departments.

RECOMMENDATIONS

5.1 In collaboration with School Operations and Information Technology Services, develop a quality control process, including use of a

checklist to ensure that preliminary site assessments are consistently performed and documented by the appropriate district department(s) prior to purchasing equipment for school sites. Adequate follow-up to noted deficiencies should be included in the process.

Responsible Department: Information Technology Services

Management Response: ITS already has in place a work-order system called HEAT. We recommend that prior to schools placing an order for computers, a HEAT work order be created by the principal or SBT and assigned to the school's respective ITS, ISS Project Manager. If the purchase is for new, additional computers that add to the overall total computers count, ITS will survey the school and determine if the school currently possesses the required infrastructure to accommodate the additional computer purchase. If the purchase is for replacement computers, the same practice should be followed, except the survey will not be necessary. However, in either the new computer or replacement purchases, ITS is notified and the HEAT ticket will be left in the "open" status until computers are installed and active. As Instructional Technology has traditionally ordered most of the Districts' computers for schools, we would like to have them follow the same procedure when the overall total computer count is increased.

5.2 When new equipment is purchased as add-on to current inventory, readiness assessment of infrastructure should be conducted prior to purchasing the equipment..

Responsible Department: Division of Instructional Technology

Management Response: While Management agrees that purchases should be delayed due to infrastructure and space issues, this can only be accomplished if district staff is notified of such issues. Staff in Instructional Technology contacts schools prior to placing orders for computers and the school administration has the opportunity to indicate any special readiness concerns at that time. Going forward, information obtained from ITS with respect to readiness will also be utilized for this purpose.

As indicated in the audit report, staff in Instructional Technology does not believe that readiness assessments are typically required because the vast majority of computers purchased are to replace exiting classroom computers. A cursory review of Phase I schools indicates that of the 88

schools that received computers, **three schools** ended up with more computers than they had in previous years. In Phase II, approximately 200 schools received computers and **fewer than 20 schools** ended up with more computers than they had in previous years. Therefore, clearly the need for readiness assessments is limited and should be confined to instances where new computers will increase the overall inventory of computers at the site. A less resource intensive solution to visiting schools to perform readiness assessments may be to ask site administrators, when they are contacted about options for computer replacement, to confirm with their technicians that the school's infrastructure can accommodate the additional computers.

As for the specific examples of site readiness issues included in the audit report, management proffers explanations for the delays that support the position that there are plausible reasons for changing the actual use of technology from the original plan that would not have been discovered through readiness checks. For instance, the audit report indicates that according to the school administration, deployment of teacher laptops at Ernest Graham Elementary was delayed due to the need for wireless access points. While additional wireless access points may have been desired, wireless access should not have delayed deployment of the laptops since connectivity could have been achieved through existing classroom data drops and wireless access points which were already in place. Every classroom at Ernest Graham is equipped with data drops and the corresponding electrical outlets at the front of the classroom for a teacher station. All laptops purchased through the refresh program contained both internal network interface cards (NIC) and wireless cards. Even if infrastructure checks had been in place, a lack of wireless connectivity would not have been viewed as an issue which merited delaying deployment for the reasons already provided. Equipment was purchased with NIC cards to facilitate a wired connection. The majority of district schools do not have building-wide wireless access and it was never anticipated that wireless connectivity would be the norm. Even new schools do not have building-wide wireless networks, as a standard. Another explanation is that the computers were delivered late in the school year, and some teachers opted to wait until school started the following school year to begin utilization. Ultimately, the 50 computer surplus which was detected during this audit was the result of a significant decline in student enrollment the following school year which resulted in the need for fewer teachers and therefore fewer teacher laptops. Rather than utilizing the extra teacher laptops with students or in some other capacity, laptops

were left in storage and staff in Instructional Technology was not apprised of the issue when follow-up contacts were made.

As for readiness issues at Palm Springs Elementary, the audit report states that the school received computers in May, but they were not installed until September; however, the report did not mention that Palm Springs Elementary was not an open center during the summer of 2008 and the school may have chosen not to install the computers until the beginning of the next school year. Furthermore, while power deficiencies were cited as the rationale for the three computers found in storage in June of 2009, the principal authorized the purchase of 26 additional computers from Microsoft Settlement funds later that same month. While management agrees that there were delays in technology use, at present, a site visit by district staff confirmed that the computers received in August of 2009 are deployed and currently in use.

A review of computer inventory data for Palm Springs Elementary over the last decade and prior to initiation of the refresh initiative indicates that the school had 245 modern instructional computers in use during the 2004-2005 school year. In the year in which the teacher computers were purchased, the school reported 200 instructional computers, 20 of which were obsolete. Sixty-one computers were purchased for teachers. Replacing the 20 obsolete computers and adding 41 additional computers would not have placed any additional burden on the school's infrastructure, since the school had capacity for at least 245 computers. Since that time, the school has continued to add to their inventory of student computers. The current student computer inventory, as indicated on the Fall 2009 Innovates Survey, exceeds 300 computers. This number does not take into account the teacher computers.

It should be noted that when data drops at schools are insufficient for the quantity of instructional computers needed to allow adequate student access to digital resources, mini-switches and hubs have been utilized to expand the capacity. While the solution is, again, less than ideal, schools would, in most cases, have to wait a year or more for infrastructure upgrades, assuming funding was available for such. In most cases school administrators do not have the financial resources to make those types of improvements to their buildings.

5.3 Develop a plan to identify an alternate resource pool to assist schools where equipment setup is delayed due to technology staff availability shortages.

Responsible Department: **Information Technology Services**

Management Response: This process already exists. The District now has the SBT Support Model, which provides ITS the flexibility to assign and send SBTs to schools with technology related needs. Upon receiving computer orders, school principals or SBTs should notify ITS via a HEAT work order if assistance is needed with the installation. Additionally, if "Management's Response" under Recommendation 5.1 is accepted and implemented, ITS would be monitoring the HEAT work-order queues and reviewing all work orders with a status of "open." ITS will be pro-actively looking for open tickets and will identify any ticket with a prolonged open status.

6. CRITERIA AND METHODOLOGY USED TO DISTRIBUTE TECHNOLOGY ARE SOUND, BUT COULD BE ENHANCED

One of the responsibilities of Instructional Technology is to purchase and distribute technology equipment and software to schools. The stated goal of this effort is to achieve a 1:4 ratio of modern computers to students. According to Instructional Technology, the primary data used to determine the needs of each school were the yearly technology surveys completed by schools for the Florida Department of Education (FDOE). That survey data may be adjusted by other known information about computer purchases. Instructional Technology developed a set of criteria and methodology, which it applies to the data collected, in order to prioritize the ranking of sites which will receive computers. Although those criteria and methodology were not documented, we found them to be sound. Moreover, the methodology followed in prioritizing school sites for computer placement generally ensured equity in the placement of computers among the District's schools.

Although the methodology followed in prioritizing school sites for computer placement is sound, the process could be strengthened by ensuring that when asked to distribute technology to schools other than the ones identified through application of the established criteria and methodology, the reasons for the decisions is thoroughly documented. In addition, the individual or district department requesting any variance should be noted. Some requests were not documented with consistency. These requirements could be incorporated into the general guidelines and procedures developed to manage instructional computer technology implementation.

Our analysis of the data provided by Instructional Technology and our cross-comparison with the purchase orders (PO's) Instructional Technology issued, showed that Instructional Technology made a concerted effort toward achieving the 1:4 ratio, which was generally met for the majority of schools. According to Instructional Technology, to achieve this equalization, it was determined that during Phase I, the most technology-needed elementary and secondary schools would receive 60 and 120 computers, respectively, and during Phase II whatever quantity the available funds could purchase. However, while a substantial level of relative equalization occurred, a greater level of equalization could have been achieved at some schools through Phase I purchases if the quantity of computer purchased for each school was based on each school's specific needs rather than the standard 60 or 120. We found that even after these purchases, some schools had a greater need for additional computers, whereas, other schools had an excess of computers (i.e., the number of "additional computers needed" was a

negative number).

RECOMMENDATIONS

6.1 To improve the computer purchase and placement process, and to ensure consistency, document the criteria and methodology used to prioritize the ranking of sites, which will receive instructional hardware, and the reasons for deviating from the established criteria and methodology. In addition, consistently adhere to criteria used to allocate and distribute computers across the District to ensure fair and equitable distribution of resources.

Responsible Department: Division of Instructional Technology

Management Response: Management agrees to thoroughly document criteria and methodology used to identify sites which will receive instructional hardware. It should be noted that in some situations, staff in Instructional Technology has been directed to give priority to specific schools based on extenuating circumstances and needs such as Differentiated Accountability, remedial program needs, and other programmatic needs. With any establishment of criteria for selection extenuating circumstances arise that cause the criteria to be reprioritized. In the future, the Division will closely track and document any exceptions which cause deviation from the set criteria.

7. ENHANCED FOLLOW-UP TO COMPUTER PLACEMENT COULD REDUCE DELAYS

To effectively execute the goals of the District's technology refresh initiative, the process must be comprehensive and complete. This would involve ensuring that follow-up is done to verify delivery, timely installation, and appropriate use of equipment.

Follow-ups should include:

- Verification of receipt of all line items, including vendor setup
- Verification of timely installation of equipment
- Identification of difficulties with vendor, delivery, or equipment
- Verification that equipment purchased with grant funding is being properly used as defined by the grant contract

Where problems are discovered, an appropriate solution should be sought and appropriate additional follow-up provided as needed.

Information provided by Instructional Technology indicated that the department does perform a measure of follow-up. For example, they provided us sample copies of *Teacher Laptops 2007-2008 Survey,* which sought to determine the schools' experiences with the teacher laptop initiative, among other things. They also provided us a copy of a handwritten call log of follow-up calls made to various schools on December 5, 2008. Despite these efforts, the conditions noted and representations made to us by school staff during our site visits suggest that the process is in need of further improvement. This was especially evident due to the extended period between the genesis and detection of the problems and their resolution. It is important to note that responsibility for the apparent breakdowns in the system may not lie solely with any single department that is involved in the process, but in most cases, shared.

- **Consistent, timely, and adequate follow-up is needed and could reduce delays in placing computers into service.**

    - Six of the 22 (27%) schools sampled reported delays in installation of equipment. According to staff at Miami Southridge Senior High, lack of security equipment (laptop carts) delayed installation and use of 96 laptop computers, valued at $90,144. These computers were received in May, 2008, but the laptop carts were not received until late July,

2009. In fact, on May 28, 2008, the school provided the following comments on the *Teacher Laptops 2007-2008 Survey*: "We are given [$]225,000 of technology, but our principal could not find [$]7-[$]8,000 for lockdowns necessary to secure them to the desktop, since the school was written up for lax security procedures. The lockdown is available through Dell and should be included in the package." In that same survey, the school rated the "Teacher rollout" and "Teacher use after rollout" as poor (the worst rating). We observed this problem during our site visit. Furthermore, as of the end of our fieldwork, the computers had not been imaged and fully distributed.

According to Instructional Technology, the computer installation was delayed for two reasons. First, the teachers at that school did not want the new computers when the school administration tried to distribute them to the staff. Second and subsequently, the school's administration changed the intended use of the computers from "teacher's use" to "student's use"; thereby, necessitating the laptop carts. The unclaimed computers remained unused until other arrangements could be made.

- As previously mentioned, at Ernest Graham Elementary, 50 laptop teacher computers, valued at $46,950 ($939 each) remained unused for over a year following their delivery. The condition was noted during our site visit. While the original number of computers requested might have been proper at the time of placing the order, subsequent changes at the school site would have been discovered with proper follow-up. In fact, on May 28, 2008, the school provided the following comments on the *Teacher Laptops 2007-2008 Survey* regarding additional training or support that would enhance the teacher's use of the laptops: "More wireless areas throughout our school." On the same survey, the school also commented that, "Funding for Access points would be helpful." It should also be noted that an entry regarding Ernest Graham Elementary, in the December 5, 2005 handwritten telephone log Instruction Technology prepared indicated that "All [132 laptops are] being used and [are] a benefit." As such, Instructional Technology cannot be held fully responsible for the breakdown in the process. These computers have since

been re-allocated to another location.

- **Vendor paid for installation services that were not provided.**

  - At Palm Springs Elementary and West Miami Middle, a vendor was paid $10,480 for installation services included in the equipment bid. However, those schools did not receive these services in full value. This resulted in an overpayment to the vendor in the same amount. The cause for this overpayment falls primarily on the schools' administration, as they are responsible for receipting the purchase order online and certifying that the goods and services were received in full, prior to payment. In fact, in the case of Palm Springs Elementary, Instructional Technology provided us documents, which showed that the installation (i.e., powering-up the system and verifying the functionality of the hardware) had been completed for 37 systems. However, M-DCPS was invoiced and paid installation costs on 61 machines.

    Notwithstanding, adequate follow-up (including matching of the two inconsistent documents), by Instructional Technology with the school could have alerted staff that the school did not fully receive the services invoiced and, therefore, necessitated adjusting the amount paid to the vendor. This condition remained undetected until we brought it to the attention of the administration.

RECOMMENDATIONS

7.1 While a documented approach to follow-up is in place, a more robust monitoring of original purchasing plan should be implemented.

Responsible Department: Division of Instructional Technology, District/School Operations, and Information Technology Services

Management Response:
Division of Instructional Technology – Management did implement follow-up procedures through the Teacher Laptops Survey, emails, and phone calls, when applicable. However, staff agrees to work with staff in School Operations and Information Technology Services to develop more extensive follow-up monitoring processes. However, this is another example of decisions that are made at the school site level based on changing needs or other extenuating circumstances that are not under the

purview of the Division of Instructional Technology. In conjunction with the Office of School Operations steps will be taken to insure that regional level monitoring occurs and that documentation will be provided to track changes in technology use that differ from the original purchasing plan.

In order to better address the issue of installation or setup services cited in the audit report and to protect the district when schools make these kind of mistakes, staff in Instructional Technology and Information Technology has initiated conversations with computer hardware vendors and staff in Accounts Payable to establish a process which makes the vendors responsible for tracking setup services performed and crediting the district in cases where services are paid for and not received.

District/School Operations – District/School Operations will cooperatively with the Division of Instructional Technology enforce the pre-existing process of generating HEAT tickets upon purchasing, delivery, and installation of new/replacement computers. District/School Operations, in collaboration with Information Technology Services, will work together towards developing a more extensive follow-up process.

Information Technology Services – This process already exists; schools should open a HEAT ticket advising the ITS Project Manager that computers are being purchased. If a HEAT ticket is generated, the entire process will be documented from the time the principal begins to plan purchasing computers, to the purchase, delivery, and installation. Additionally, if the purchase will replace existing computers and not add new computers, no survey will be required; however, the generation of a HEAT ticket will ensure that the process is documented and computers are installed.

MANAGEMENT'S RESPONSE (Full Text – Division of Instructional Technology)

M E M O R A N D U M **February 16, 2010**

TO: Mr. Jose Montes de Oca, Chief Auditor

FROM: Milagros R. Fornell, Associate Superintendent
Curriculum and Instruction

SUBJECT: **REVIEW OF DRAFT REPORT – DISTRICT'S ELECTRONIC INSTRUCTIONAL TECHNOLOGY PURCHASING AND PLACEMENT PRACTICES**

Staff from the Division of Instructional Technology has completed a review of the Draft Report – District's Instructional Technology Purchasing and Placement Practices. Responses to the specific recommendations of the audit team follow. Whenever appropriate, responses to the individual audit recommendations contain additional information designed to clarify and/or provide a different perspective on the findings for that specific audit report section. Additionally, included as part of management's response is an introduction detailing concerns about the audit process itself as well as concerns about information in the audit report. This information has been included in this manner so that it will be included in the final report and made available for the Audit Committee's consideration.

Please contact me at 305 995-1451 if there are any additional questions or concerns.

MRF:jc
M828

cc: Mr. Freddie Woodson
Ms. Ava Byrne
Mr. Joseph Gomez
Ms. Deborah Karcher
Ms. Connie Pou
Dr. Sylvia J. Diaz
Ms. Cynthia Gracia
Mr. Javier Perez

Management Response to Audit Report: District's Electronic Instructional Technology Purchasing and Placement Practices

Responses to Recommendations

1.1 Continue working towards increasing the number of schools that have met the District's stated goal of 'one modern computer for every four students'.

Responsible Department: Division of Instructional Technology

Management Response: The Division of Instructional Technology will continue to purchase classroom computers for schools with a goal of one modern computer for every four students; however, this will not be an attainable goal unless the district is able to invest approximately $18 million dollars annually to replace one fifth (assuming a five year life span for classroom computers) of the district's approximate 127,000 instructional computers. Short of that, computers will be replaced based on funds available and instructional priorities as identified by Senior Staff.

2.1 Expand the existing written general guidelines Instructional Technology provided to document the department's processes in implementing and managing electronic technology initiatives/projects for which it is responsible. Those guidelines and procedures should be comprehensive and should include identifying critical points of coordination, staff responsibilities, required documentation and authorization, protocol required to document exceptions, follow-up, project closeout, etc.

Responsible Department: Division of Instructional Technology

Management Response: The Division of Instructional Technology will expand upon existing guidelines in order to more clearly delineate roles and responsibilities of schools and the district offices involved in future technology projects. Development of these guidelines will occur prior to initiating any new purchase projects. However, it should be noted that staff did maintain comprehensive documentation including spreadsheets containing technology statistics for each school at the time of the purchases and for the schools selected for inclusion in the projects, as well as surveys showing follow-up with schools after the delivery of the computers. In Phase I, Regional Centers made some decisions about which schools to include in the project which were exceptions to the documented statistical and survey data but were based on other criteria of need such as Differentiated Accountability category. In the future, set procedures for documentation of exceptions will be established and adhered to.

2.2 Develop a quality control process to ensure consistent adherence to approved procedures and processes. This process may include developing checklists to verify the process and cross-training staff.

Responsible Department: Division of Instructional Technology

Management Response: Management will develop a quality control process in conjunction with the development of expanded procedures prior to initiating any new purchasing projects.

3.1 Collaborate with Procurement Management Services and Instructional Technology Services and expand the bid specification review team to include at least one School Based Technician with current hands-on school site experience relative to the needs of the schools. As the team reviews the specifications for computers to be included in the shopping cart, their efforts should include identifying the typical uses and needs of classroom and laboratory computers; developing one or more standard baseline system configurations, based on intended application; including only needed hardware and software in the packages; and providing adequately tested, institutional grade peripherals and accessories, and upgrade to factory installed memory as options.

Responsible Department: Division of Instructional Technology, Procurement Management Services, and Information Technology Services

Management Response: The Division of Instructional Technology will work with Information Technology Services and Procurement Management Services to expand the bid review team. While the suggestion to include personnel with current school site experience has merit, the inclusion of instructional personnel who function as school site technology coordinators at various school levels might be more valuable than the inclusion of school site technicians. Technical expertise is provided by district staff; what would be a more relevant addition to the bid review team is school site instructional personnel with knowledge of what system components are most useful in the classroom for the end users. This type of information is not typically ascertained from technical staff but rather from instructional staff who are charged with using the technology with students for instructional purposes.

This recommendation also seems to suggest that when computer specifications are developed they do not take into account typical uses of classroom and lab computers. What has not transpired since the 2006-2007 school year, when the five-year bid was issued and the full bid committee was convened, is the reconsideration of bundled accessories such as headsets and microphones. With each reissuance of the bid, computer hardware specifications were updated, but the bundled accessories remained as when the bid was originally issued. The decisions were valid at the time they were made, as expensive headsets were being destroyed and stolen at the same rate as inexpensive ones and patch cables were in short supply district-wide. Going forward, the inclusion of these items will be reconsidered with each reissuance of the bid in order to ensure that bundled accessories are still valid and appropriate.

It should also be noted that, historically, Miami-Dade County has paid less for classroom computers than other districts in the state and that the bundled accessories are standard items included with classroom computers across the state. However, items which do not have a viable role in the classroom should be eliminated and this has already taken place. Classroom bundles on the latest refresh of the current bid were changed to allow for either speakers or a headset, but not both. Freestanding microphones are no longer

included, nor are patch cables. Additional changes can be made in subsequent refreshes of the bid based on the group's decisions.

On page 22, the audit report states that eleven of the purchase orders (PO's) in the sample included desktop speakers, speaker bars, and headsets. While shipments did include all of the items mentioned, this was due to an error in the bid and it should be noted that there was no charge for the speakers. The error was due to the transition from cathode ray tube (CRT) monitors to flat-panel monitors that could be equipped with a speaker bar as an upgrade. On the Dell units in question, speakers continued to be included with the CPU purchase though this was not apparent on the district's shopping cart used to place these orders. In addition, it needs to be noted that this was the beginning of the five year bid, which was reviewed by the entire bid committee, not solely staff from Information Technology Services and Instructional Technology. These computers were the first batch of orders placed in the district utilizing that bid. It should be noted that this issue has been corrected.

3.2 Encourage school site technicians and administrators to use the Vendor Performance Survey or another reporting mechanism to share information regarding the effectiveness and durability of computer technology, in order to improve equipment specifications for items on the shopping cart. This could be accomplished when notifying schools about planned technology purchases or during follow-up to such purchases and placement.

Responsible Department: **Division of Instructional Technology**

Management Response: When notifying schools of pending computer shipments, the Division of Instructional Technology will remind schools to complete the Vendor Performance Survey after the receipt of goods. Staff recommends that Information Technology Services (ITS) share in this responsibility and that they encourage school site technicians, who report to ITS, to provide this type of firsthand feedback as applicable.

3.3 Complete a cost-benefit analysis regarding the feasibility of providing a full-system lockdown kit that protects both computer and monitor with each system installed at school sites. If deemed cost effective, include the system(s) as options on the shopping cart.

Responsible Department: Information Technology Services

Management Response:

3.4 Collect unused excess computers and accessories (speakers, microphones and patch cables) stored at schools and maintain them at a central location for redistribution to schools and departments with identified needs in lieu of purchasing the same or similar items to fill those needs.

Responsible Department: Information Technology Services

Management Response:

3.5 Consider discontinuing vendor imaging and set-up services in favor of an M-DCPS team performing this function, or redefining this purchased service to include complete on-site set-up and imaging of systems according to each location's needs.

Responsible Department: Procurement Management, Division of Instructional Technology, and Information Technology Services

Management Response:

In this case, "vendor imaging" references the installation of Microsoft Office. Pre-installation of the Office suite was added to district computer purchases to minimize the management of software licensing issues which arise when software intended for one computer is installed on additional computers. Before considering discontinuing this service, district staff in Information Technology Services and Instructional Technology, who are responsible for Microsoft licensing issues, need to research the issue further to determine if there are potential liabilities for the district. Additionally, while Dell had previously charged $20 for the service, the current cost is $10 and the other two manufacturers, Lenovo and Hewlett Packard, do not charge at all for this service.

While comprehensive imaging services designed to meet individual school needs could be included in the bid, historically the cost of these services has been prohibitive. A custom image was part of the teacher laptop deployment strategy and that effort was met with mixed results and, based on feedback from school site technicians, was discontinued.

As for the setup services, these optional services help to ensure that computers are taken out of boxes, plugged-in, and turned on by the vendor. This helps to avoid warranty disputes since the manufacturer's representative is doing the un-boxing and the reporting of out-of-box failures. Noting out-of-box failures ensures that schools are not saddled with computers that arrive with a factory defect, and that they receive brand new replacement computers. When computers are repaired, they are frequently outfitted with refurbished parts, depending on the defect. Additionally, at a time when the district is losing school based technicians through attrition and district staff has been greatly reduced, these optional setup services are needed more than ever. Management recommends that the imaging and set up services be continued to avoid greater delays in computer deployments and lessen the possibility of warranty disputes.

4.1 Instruct all schools to properly surplus and remove excess and obsolete equipment from school locations in accordance with establish procedures and rules.

Responsible Department: School Operations

Management Response:

4.2 Consider developing alternate processes, outside of the District's Property

Accounting System, to track and account for certain type of equipment, which is below the $1,000 inventory threshold and is susceptible to theft, such as some desktop and laptop computers.

Responsible Department: Office of the Controller

Management Response:

5.1 In collaboration with School Operations and Information Technology Services, develop a quality control process, including use of checklist to ensure that preliminary site assessments are consistently performed and documented by the appropriate district department(s) prior to purchasing equipment for school sites. Adequate follow-up to noted deficiencies should be included in the process.

Responsible Department: Information Technology Services

Management Response:

5.2 When new equipment is purchased as add-on to current inventory, readiness assessment of infrastructure should be conducted prior to purchasing the equipment.

Responsible Department: **Division of Instructional Technology**

Management Response: While Management agrees that purchases should be delayed due to infrastructure and space issues, this can only be accomplished if district staff is notified of such issues. Staff in Instructional Technology contacts schools prior to placing orders for computers and the school administration has the opportunity to indicate any special readiness concerns at that time. Going forward, information obtained from ITS with respect to readiness will also be utilized for this purpose.

As indicated in the audit report, staff in Instructional Technology does not believe that readiness assessments are typically required because the vast majority of computers purchased are to replace exiting classroom computers. A cursory review of Phase I schools indicates that of the 88 schools that received computers, **three schools** ended up with more computers than they had in previous years. In Phase II, approximately 200 schools received computers and **fewer than 20 schools** ended up with more computers than they had in previous years. Therefore, clearly the need for readiness assessments is limited and should be confined to instances where new computers will increase the overall inventory of computers at the site. A less resource intensive solution to visiting schools to perform readiness assessments may be to ask site administrators, when they are contacted about options for computer replacement, to confirm with their technicians that the school's infrastructure can accommodate the additional computers.

As for the specific examples of site readiness issues included in the audit report, management proffers explanations for the delays that support the position that there are plausible reasons for changing the actual use of technology from the original plan that would not have been discovered through readiness checks. For instance, the audit

report indicates that according to the school administration, deployment of teacher laptops at Ernest Graham Elementary was delayed due to the need for wireless access points. While additional wireless access points may have been desired, wireless access should not have delayed deployment of the laptops since connectivity could have been achieved through existing classroom data drops and wireless access points which were already in place. Every classroom at Ernest Graham is equipped with data drops and the corresponding electrical outlets at the front of the classroom for a teacher station. All laptops purchased through the refresh program contained both internal network interface cards (NIC) and wireless cards. Even if infrastructure checks had been in place, a lack of wireless connectivity would not have been viewed as an issue which merited delaying deployment for the reasons already provided. Equipment was purchased with NIC cards to facilitate a wired connection. The majority of district schools do not have building-wide wireless access and it was never anticipated that wireless connectivity would be the norm. Even new schools do not have building-wide wireless networks, as a standard. Another explanation is that the computers were delivered late in the school year, and some teachers opted to wait until school started the following school year to begin utilization. Ultimately, the 50 computer surplus which was detected during this audit was the result of a significant decline in student enrollment the following school year which resulted in the need for fewer teachers and therefore fewer teacher laptops. Rather than utilizing the extra teacher laptops with students or in some other capacity, laptops were left in storage and staff in Instructional Technology was not apprised of the issue when follow-up contacts were made.

As for readiness issues at Palm Springs Elementary, the audit report states that the school received computers in May, but they were not installed until September; however, the report did not mention that Palm Springs Elementary was not an open center during the summer of 2008 and the school may have chosen not to install the computers until the beginning of the next school year. Furthermore, while power deficiencies were cited as the rationale for the three computers found in storage in June of 2009, the principal authorized the purchase of 26 additional computers from Microsoft Settlement funds later that same month. While management agrees that there were delays in technology use, at present, a site visit by district staff confirmed that the computers received in August of 2009 are deployed and currently in use.

A review of computer inventory data for Palm Springs Elementary over the last decade and prior to initiation of the refresh initiative indicates that the school had 245 modern instructional computers in use during the 2004-2005 school year. In the year in which the teacher computers were purchased, the school reported 200 instructional computers, 20 of which were obsolete. Sixty-one computers were purchased for teachers. Replacing the 20 obsolete computers and adding 41 additional computers would not have placed any additional burden on the school's infrastructure, since the school had capacity for at least 245 computers. Since that time, the school has continued to add to their inventory of student computers. The current student computer inventory, as indicated on the Fall 2009 Innovates Survey, exceeds 300 computers. This number does not take into account the teacher computers.

It should be noted that when data drops at schools are insufficient for the quantity of instructional computers needed to allow adequate student access to digital resources, mini-switches and hubs have been utilized to expand the capacity. While the solution is,

again, less than ideal, schools would, in most cases, have to wait a year or more for infrastructure upgrades, assuming funding was available for such. In most cases school administrators do not have the financial resources to make those types of improvements to their buildings.

5.3 Develop a plan to identify an alternate resource pool to assist schools where equipment setup, including re-imaging, is delayed due to technology staff availability shortages.

Responsible Department: **Information Technology Services**

Management Response:

6.1 To improve the computer purchase and placement process, and to ensure consistency, document the criteria and methodology used to prioritize the ranking of sites which will receive instructional hardware and the reasons for deviating from the criteria and methodology. In addition, consistently adhere to criteria used to allocate and distribute computers across the district to ensure fair and equitable distribution of resources.

Responsible Department: Division of Instructional Technology and School Operations

Management Response: Management agrees to thoroughly document criteria and methodology used to identify sites which will receive instructional hardware. It should be noted that in some situations, staff in Instructional Technology has been directed to give priority to specific schools based on extenuating circumstances and needs such as Differentiated Accountability, remedial program needs, and other programmatic needs. With any establishment of criteria for selection extenuating circumstances arise that cause the criteria to be reprioritized. In the future, the Division will closely track and document any exceptions which cause deviation from the set criteria.

7.1 While a documented approach to follow-up is in place, a more robust monitoring of original purchasing plan should be implemented.

Responsible Department: Division of Instructional Technology, School Operations**,** and information Technology Services

Management Response: Management did implement follow-up procedures through the Teacher Laptops Survey, emails, and phone calls, when applicable. However, staff agrees to work with staff in School Operations and Information Technology Services to develop more extensive follow-up monitoring processes. However, this is another example of decisions that are made at the school site level based on changing needs or other extenuating circumstances that are not under the purview of the Division of Instructional Technology. In conjunction with the Office of School Operations steps will be taken to insure that regional level monitoring occurs and that documentation will be provided to track changes in technology use that differ from the original purchasing plan.

In order to better address the issue of installation or setup services cited in the audit report and to protect the district when schools make these kind of mistakes, staff in

Instructional Technology and Information Technology has initiated conversations with computer hardware vendors and staff in Accounts Payable to establish a process which makes the vendors responsible for tracking setup services performed and crediting the district in cases where services are paid for and not received.

In closing, the information provided by Management was intended to clarify or provide a different perspective on the findings for each audit report section. Overall, Management has identified two key general concerns with the audit report process and will address these in the closing section.

The Technology Refresh Program was a district initiative which involved several district offices which included School Operations, Information Technology Services and Instructional Technology. When the focus of the audit was determined to be purchasing and placement practices the scope should have been broadened to include the other district departments involved in these aspects of the Technology Refresh Program.

Lastly, the audit finding regarding the storage or lack of use of purchased technology through this program is not under the control of the Division of Instructional Technology. The management response showed that this office identified the schools to receive added technology based on set criteria and input from Regional Center Administrators. Once delivered and placed at the school the Division of Instructional Technology did conduct follow-up to checks on the usage of the newly purchased technology. The decision to store the technology was a decision made at the school level which is not under the purview of the Division of Instructional Technology. That said, it should be noted that excess computer inventory (computers and monitors) in storage at the 22 schools identified on page 20 has been deployed. This has been confirmed by the school technicians and staff at Information Technology Services. Specifically, laptop computers at Southridge Senior cited as unused in the report are currently being used on mobile carts with students, laptops from Ernest Graham were moved by staff in Instructional Technology to Edison Senior High school for use and monitors at Jack Gordon and Hialeah Senior High have been deployed and are in use.

MANAGEMENT'S RESPONSE (Full Text – Information Technology Services)

MEMORANDUM

February 16, 2010
DCK# 30/09-10

TO: Mr. José Montes de Oca, Chief Auditor

FROM: Deborah C. Karcher, Chief Information Officer
Information Technology Services

SUBJECT: **REVIEW OF DRAFT REPORT – DISTRICT'S ELECTRONIC INSTRUCTIONAL TECHNOLOGY PURCHASING AND PLACEMENT PRACTICES**

Staff from the Division of Information Technology Services (ITS) has completed a review of the Draft Report – District's Instructional Technology Purchasing and Placement Practices. Responses to the specific recommendations of the audit team which were specifically assigned to ITS, follow.

Please contact me at 305 995-3751 if there are any additional questions or concerns.

DK/GF:ig

cc: Mr. Freddie Woodson
Dr. Richard Hinds
Ms. Ava Byrne
Mr. Joseph Gómez
Ms. Connie Pou
Dr. Sylvia J. Díaz
Ms. Cynthia Gracia
Mr. Javier Pérez

3.1 Collaborate with Procurement Management Services and Instructional Technology Services and expand the bid specification review team to include at least one School Based Technician with current hands-on school site experience relative to the needs of the schools. As the team reviews the specifications for computers to be included in the shopping cart, their efforts should include identifying the typical uses and needs of classroom and laboratory computers; developing one or more standard baseline system configurations, based on intended application; including only needed hardware and software in the packages; and providing adequately tested, institutional-grade peripherals and accessories, and upgrade to factory installed memory as options.

Responsible Department: Division of Instructional Technology, Procurement Management Services, and Information Technology Services

Management Response: Agree. As a replacement for one School Based Technician (SBT) from a school site, we suggest that two Supervisors from ITS' Infrastructure and Systems Support division be added to the committee. One of these individuals is an engineer and the other is in constant contact with all SBTs and has access to highly technical staff. The addition of an engineer and an individual who works closely with all SBTs will lend itself to having all new platforms thoroughly tested and evaluated prior to updating the shopping cart. Additionally, we recommend that one individual from Management Audits also be added as a participating member in this committee.

3.2 Encourage school site technicians and administrators to use the Vendor Performance Survey or another reporting mechanism to share information regarding the effectiveness and durability of computer technology, in order to improve equipment specifications for items on the shopping cart. This could be accomplished when notifying schools about planned technology purchases or during follow-up to such purchases and placement.

Responsible Department: Division of Instructional Technology

Management Response: Instead of the "Vendor Performance Survey," if the "Management Response" from Recommendation 3.1 is implemented, the report generated by the committee will be the "reporting mechanism" referred to in 3.2. This report will act as a guide for all school-site administrators and assist them in purchasing the most effective equipment for their schools' respective use. Using the report from the review team may provide similar results to the Survey results; furthermore, it is difficult to implement and monitor surveys, especially given the loss of staff resources.

3.3 Complete a cost-benefit analysis regarding the feasibility of providing a full-system lockdown kit that protects both computer and monitor with each system installed at school sites. If deemed cost effective, include the system(s) as options on the shopping cart.

Responsible Department: Information Technology Services

Management Response: Agree. Using the District-owned, BigFix patch management application, ITS can select the active computer inventory for a specific time period at a randomly sample of schools and produce a report for each school's inventory. At a later date and for the same schools, there would be another inventory with the respective report. The information in the reports from the same school would be compared to review the exceptions and determine if computers are missing at a rate that would warrant the expense of purchasing costly and troublesome lock-downs.

3.4 Collect unused excess computers and accessories (speakers, microphones, and patch cables) stored at schools and maintain them at a central location for redistribution to schools and departments with identified needs in lieu of purchasing the same or similar items to fill those needs.

Responsible Department: Information Technology Services

Management Response: Collecting and sending to one central location may not guarantee that equipment will be used in a timely fashion. This centralization will demand collaboration and time from several departments and lead to loss of productivity. We suggest the SBT be given the opportunity to send an announcement, via email to the "All MST" distribution list asking to reply if anyone is in need of a specific piece of equipment; for example, headsets. SBTs currently follow this procedure and we have seen very good results. Sometimes the advertised items are requested by another school within minutes of the announcement. ITS requests that SBTs alert ITS of any obsolete or unused computers, but this only applies to obsolete computers and it occurs at the beginning and end of the school year. ITS will either request pick-up by the Education Fund or the computers will be picked up by ITS staff and redistributed.

3.5 Consider discontinuing vendor imaging and set-up services in favor of an M-DCPS team performing this function, or redefining this purchased service to include complete on-site set-up and imaging of systems according to each location's needs.

Responsible Department: Procurement Management, Division of Instructional Technology, and Information Technology Services

Management Response: This needs to be researched because is not known the extent to which the software is overwritten; we will investigate if this is the case and adjust accordingly. Due to the District's budget constraints, which affect resources and the use of over-time, it is recommended that "on-site" set-up by the vendor remain an allowable option without vendor imaging.

5.1 In collaboration with School Operations and Information Technology Services, develop a quality control process, including use of a checklist to ensure that preliminary site assessments are consistently performed and documented by the appropriate district department(s) prior to purchasing equipment for school sites. Adequate follow-up to noted deficiencies should be included in the process.

Responsible Department: Information Technology Services

Management Response: ITS already has in place a work-order system called HEAT. We recommend that prior to schools placing an order for computers, a HEAT work order be created by the principal or SBT and assigned to the school's respective ITS, ISS Project Manager. If the purchase is for new, additional computers that add to the overall total computers count, ITS will survey the school and determine if the school currently possesses the required infrastructure to accommodate the additional computer purchase. If the purchase is for replacement computers, the same practice should be followed, except the survey will not be necessary. However, in either the new computer or replacement purchases, ITS is notified and the HEAT ticket will be left in the "open" status until computers are installed and active. As Instructional Technology has traditionally ordered most of the Districts' computers for schools, we would like to have them follow the same procedure when the overall total computer count is increased.

5.3 Develop a plan to identify an alternate resource pool to assist schools where equipment setup is delayed due to technology staff availability shortages.

Responsible Department: Information Technology Services

Management Response: This process already exists. The District now has the SBT Support Model, which provides ITS the flexibility to assign and send SBTs to schools with technology related needs. Upon receiving computer orders, school principals or SBTs should notify ITS via a HEAT work order if assistance is needed with the installation. Additionally, if "Management's Response" under Recommendation 5.1 is accepted and implemented, ITS would be monitoring the HEAT work-order queues and reviewing all work orders with a status of "open." ITS will be pro-actively looking for open tickets and will identify any ticket with a prolonged open status.

7.1 While a documented approach to follow-up is in place, a more robust monitoring of original purchasing plan should be implemented.

Responsible Department: Division of Instructional Technology, District/ School Operations**,** and information Technology Services

Management Response: This process already exists; schools should open a HEAT ticket advising the ITS Project Manager that computers are being purchased. If a HEAT ticket is generated, the entire process will be documented from the time the principal begins to plan purchasing computers, to the purchase, delivery, and installation. Additionally, if the purchase will replace existing computers and not add new computers, no survey will be required; however, the generation of a HEAT ticket will ensure that the process is documented and computers are installed.

MANAGEMENT'S RESPONSE (Full Text – Procurement Management Services)

M E M O R A N D U M

March 3, 2010
JAG/M0035
JAG/995-2414

TO: Mr. José Montes de Oca, Chief Auditor
Office of Management and Compliance Audits

THROUGH: Richard H. Hinds, Associate Superintendent and Financial Officer
Financial Services

FROM: Joseph A. Gomez, Assistant Superintendent
Procurement Management Services

SUBJECT: **AUDIT REVIEW OF DRAFT FINDINGS OF DISTRICT'S INSTRUCTIONAL TECHNOLOGY PURCHASING AND PLACEMENT PRACTICES**

Procurement Management Services has reviewed the above-referenced audit report and is providing responses, where appropriate.

3.1 Collaborate with Procurement Management Services and Instructional Technology Services and expand the bid specification review team to include at least one school-based technician with current hands-on school site experience relative to the needs of the schools. As the team reviews the specifications for computers to be included in the shopping cart, their efforts should include identifying the typical uses and needs of classroom and laboratory computers; developing one or more standard baseline system configurations, based on intended application; including only needed hardware and software in the packages; and providing adequate tests, institutional-grade peripherals and accessories, and upgrade to factory-installed memory as options.

Management Response:

Procurement Management Services will include one school-based technician identified by the Division of Instructional Technology, and Information Technology Services in the bid specification review.

3.5 Consider discontinuing vendor imaging and set-up services in favor or an M-DCPS team performing this function, or redefining this purchased service to include complete on-site set-up and imaging of systems according to each location's needs

Management Response:

Procurement Management Services, as the facilitator for this process, will bid systems as requested by the originating office. However, this office does not agree with the recommendation: not to include the setup for all units. Any computer failure that is not reported within 30 days may be treated as a repair and may not be replaced with a new unit, but with one that may include refurbished parts. Additionally, proper documentation for out-of-the-box failures will not be evident, since these problems will be noted as warranty repairs. This information is vital to identify systems that should not be procured, due to repetitive failures.

JAG:crl

cc: Mr. Barry Meltz

MANAGEMENT'S RESPONSE (Full Text – District/School Operations)

M E M O R A N D U M **February 23, 2010**

TO: Mr. Jose Montes de Oca, Chief Auditor
Office of Management and Compliance Audits

FROM: Freddie Woodson, Deputy Superintendent
District/School Operations

SUBJECT: **AUDIT RESPONSE TO DISTRICT'S INSTRUCTIONAL TECHNOLOGY PURCHASING AND PLACEMENT PRACTICES**

The following corrective actions have been taken to prevent the recurrence of the noted audit finding:

RECOMMENDATIONS:

4.1. Instruct all schools to properly surplus and remove excess and obsolete equipment from school locations in accordance with established procedures and rules.

Department Responsible: **District/School Operations**

Management Response: In order to ensure the appropriate removal of surplus, excess and/or obsolete equipment from school locations in accordance with established procedures and rules in the Manual of Property Control Procedures, the Deputy Superintendent of District/School Operations reviewed the findings in the Office of Management and Compliance District's Instructional Technology Purchasing and Placement Practices Report as it pertains to the appropriate disposal of unused and obsolete equipment with all of the Region Superintendents.

As a corrective and preventive measure, each principal was directed to complete an online survey identifying all obsolete equipment, excessive equipment and identify the location of said equipment. Furthermore, the principals were directed to forward copies of their completed Outgoing Forms (FM1670) to their respective regions. Regions will coordinate with Richard's Warehouse a schedule and plan for removal and storage of this equipment.

A Weekly Briefing was disseminated to all principals and Regions summarizing the proper procedures outlined in Section 3 Recording Property Movement 3.3 Surplus Property.

7.1 While a documented approach to follow-up is in place, a more robust monitoring of original purchasing plan should be implemented.

Department Responsible: **Division of Instructional Technology, District/School Operations, and Information Technology Services**

Management Response: District/School Operations will cooperatively with the Division of Instructional Technology enforce the pre-existing process of generating HEAT tickets upon purchasing, delivery, and installation of new/replacement computers. District/School Operations, in collaboration with Information Technology Services, will work together towards developing a more extensive follow-up process.

District/School Operations will continue to work with principals to promote efficient fiscal practices. Should you have any questions, please contact me at (305) 995-2938.

FW:cg
M393

FW

cc: Dr. Daniel Tosado
Region Superintendents

Ms. Cynthia Gracia
Region Administrative Directors

MANAGEMENT'S RESPONSE (Full Text – Office of the Controller)

M E M O R A N D U M

RHH:076
March 2, 2010
305-995-1225

TO: Mr. Jose F. Montes de Oca, Chief Auditor
Office of Management and Compliance Audits

FROM: Richard H. Hinds, Associate Superintendent and Chief Financial Officer
Financial Services

BY: Connie Pou, Controller
Office of the Controller

SUBJECT: RESPONSE TO THE INTERNAL AUDIT – DISTRICT'S INSTRUCTIONAL TECHNOLOGY PURCHASING AND PLACEMENT PRACTICES

Attached is a response to the above mentioned audit report.

Should you have any questions or need clarifications, please do not hesitate to contact me at 305-995-1225, or Ms. Connie Pou, Controller, Office of the Controller, at 305-995-2001.

RHH:as

Attachment

cc: Ms. Connie Pou

Findings and Recommendations #4: APPROPRIATE REDISTRIBUTION OR DISPOSAL OF UNUSED AND OBSOLETE EQUIPMENT IS NOT PERFORMED IN ALL CASES

4.2 *Consider developing alternate processes, outside of the District's Property Accounting System, to track and account for certain types of equipment, which are below the $1,000 inventory threshold and are susceptible to theft.*

Staff has discussed this recommendation with the ERP team. Using the Business Intelligence module (BI) of the recently implemented SAP financial system, information can be requested using specific parameters. Each location can create a report containing the purchasing details for categories such as laptops and desktops computers that can be used to track and account for selected equipment. Action to this recommendation is pending subsequent meetings with School Operations and the Office of Management and Compliance Audits to establish monitoring procedures.

The School Board of Miami-Dade County, Florida, adheres to a policy of nondiscrimination in employment and educational programs/activities and programs/activities receiving Federal financial assistance from the Department of Education, and strives affirmatively to provide equal opportunity for all as required by:

Title VI of the Civil Rights Act of 1964 - prohibits discrimination on the basis of race, color, religion, or national origin.

Title VII of the Civil Rights Act of 1964, as amended - prohibits discrimination in employment on the basis of race, color, religion, gender, or national origin.

Title IX of the Education Amendments of 1972 - prohibits discrimination on the basis of gender.

Age Discrimination in Employment Act of 1967 (ADEA), as amended - prohibits discrimination on the basis of age with respect to individuals who are at least 40.

The Equal Pay Act of 1963, as amended - prohibits sex discrimination in payment of wages to women and men performing substantially equal work in the same establishment.

Section 504 of the Rehabilitation Act of 1973 - prohibits discrimination against the disabled.

Americans with Disabilities Act of 1990 (ADA) - prohibits discrimination against individuals with disabilities in employment, public service, public accommodations and telecommunications.

The Family and Medical Leave Act of 1993 (FMLA) - requires covered employers to provide up to 12 weeks of unpaid, job-protected leave to "eligible" employees for certain family and medical reasons.

The Pregnancy Discrimination Act of 1978 - prohibits discrimination in employment on the basis of pregnancy, childbirth, or related medical conditions.

Florida Educational Equity Act (FEEA) - prohibits discrimination on the basis of race, gender, national origin, marital status, or handicap against a student or employee.

Florida Civil Rights Act of 1992 - secures for all individuals within the state freedom from discrimination because of race, color, religion, sex, national origin, age, handicap, or marital status.

School Board Rules 6Gx13- 4A-1.01, 6Gx13- 4A-1.32, and 6Gx13- 5D-1.10 - prohibit harassment and/or discrimination against a student or employee on the basis of gender, race, color, religion, ethnic or national origin, political beliefs, marital status, age, sexual orientation, social and family background, linguistic preference, pregnancy, or disability.

Veterans are provided re-employment rights in accordance with P.L. 93-508 (Federal Law) and Section 295.07 (Florida Statutes), which stipulate categorical preferences for employment.

Revised 5/9/03

INTERNAL AUDIT REPORT

MIAMI-DADE COUNTY PUBLIC SCHOOLS
Office of Management and Compliance Audits
1450 N. E. 2nd Avenue, Room 415
Miami, Florida 33132
Tel: (305) 995-1318 ♦Fax: (305) 995-1331
http://mca.dadeschools.net

District's Electronic Instructional Technology Purchasing and Placement Practices