

H. CARL McCALL
STATE COMPTROLLER



A.E. SMITH STATE OFFICE BUILDING
ALBANY, NEW YORK 12236

STATE OF NEW YORK
OFFICE OF THE STATE COMPTROLLER

August 28, 1998

Mr. Rudolph F. Crew, Ed.D
Chancellor
New York City Board of Education
110 Livingston Street
Brooklyn, NY 11201

Re: Actions to Address the
Year 2000 Challenge
Report 98-N-7

Dear Chancellor Crew:

Pursuant to the State Comptroller's authority as set forth in Section 1, Article V of the State Constitution and Article 3, Section 33 of the General Municipal Law, we have audited the New York City Board of Education (BE) Year 2000 compliance efforts for the period April 1, 1996 through March 31, 1998.

A. Background

A major challenge that faces government organizations over the next two years is to prepare their computer systems to cope with dates beyond December 31, 1999, otherwise known as the Year 2000 problem. The root of this problem is that, until recently, most computer programs had been designed to use only two digits to designate the year, and therefore, cannot determine the century. This means that a computer in the year 2000 might calculate that a person born in 1997 is 97 years old, rather than 3 years old. Left uncorrected, fundamental operations on computer systems will fail or produce incorrect results.

The problem is imposing, as it encompasses all computer hardware from mainframes to personal computers (PCs) and all computerized programs and processes, including those developed by vendors, programming staff, and end-users. In addition, equipment such as elevators and telephone switching devices may be subject to interruptions by the Year 2000 problem if such equipment contains microprocessors or embedded computer code that controls functioning and is not Year 2000 compliant. Moreover, the time to correct the problem is limited because some systems must process Year 2000 dates well before December 31, 1999. Given these conditions, the risk is

that systems may not be Year 2000 compliant in a timely manner. As a result, management must ensure that the resources it devotes to correcting the problem are applied to important systems on a priority basis and that contingency plans are in place for other systems.

The BE provides primary and secondary education to over one million school-age children. The BE is responsible for more than 1,000 elementary and middle schools in 32 districts. Each district is governed by an elected local school board, and each employs a district superintendent. The BE's high schools (over 180) and services for students with disabilities are administered by the Chancellor and the Central Board of Education. Serving both groups of schools is the BE Headquarters, which provides administrative and support functions, including pupil transportation; breakfast and lunch services; accounting, payroll, and budgeting; and the operation, maintenance, and security of more than 1,200 school and administrative facilities.

BE's Division of Management Information Services (DMIS) operates a large-scale mainframe data center to support some of BE's computer processing needs. In addition, certain BE divisions have their own centralized computer operations and/or their own computer programming personnel. DMIS and the BE divisions have many computer applications that are critical to the New York City school system, including those that support special education, student attendance, school lunch, student transportation, purchasing, accounting, and payroll operations. Increasingly, ancillary systems and equipment such as elevators, heating and air-conditioning equipment, and telephone systems depend on computer programs or embedded programmable chips to operate. The Division of School Facilities, a BE Headquarters unit, operates and maintains the school buildings and any computer-dependent equipment housed within them. Personal computers (PCs) are also used throughout the school system, including more than 36,000 PCs that are used for instructional purposes; some as old as 15 years.

The scope of the BE computing environment and the importance of this environment to the functioning of the educational system in New York City require a well planned and well executed approach to the Year 2000 problem. We believe that the elements of control essential to ensuring a successful Year 2000 correction for the BE would include the following:

- top management involvement to raise awareness of the problem and to define a policy and an organizational approach for correction of the problem,
- an inventory of systems that need to be corrected,
- time frames and resource requirements for correction efforts,
- a command and control organizational structure for managing and accomplishing correction of the problem, and
- procedures for the examination, modification, and testing of noncompliant systems and the implementation of corrected systems.

These elements of control for resolving the Year 2000 problem are consistent with those recommended for large organizations by the United States General Accounting Office and the Gartner Group, a leading information technology consulting organization.

In January 1997, DMIS initiated an agency-wide Year 2000 Project. The DMIS Director of Business Systems Applications became the executive responsible for the Project. The Director established a full-time Project Team (Team) consisting of a manager and four staff. In April 1997, the Team prepared a Project strategy and overview document, estimating that mainframe Year 2000 problem correction costs would total between \$3.3 million and \$6.8 million if done in-house and as much as \$9.8 million if contracted out. The document recommended an in-house approach to correction, with an estimate that all mainframe applications would be Year 2000 compliant by September 1999. The document called for a steering committee to guide the agency-wide effort, a campaign to promote awareness of the problem, and the hiring of a consultant to examine Year 2000 hardware and software issues for instructional computing. The strategy called for the Team to assume direct responsibility for the correction of payroll and personnel systems and to act as facilitator to coordinate correction throughout the rest of the BE. Under this strategy, each of the central offices of the BE and each of the school districts remain ultimately responsible for solving the problem in their organizations.

In October 1997, the Team prepared a "Year 2000 Status and Work Plan." The Team also hired 12 consultant programmers to repair the payroll and human resource systems, established a Year 2000 Steering Committee, hired two consultants to evaluate hardware and software used for instructional purposes, completed significant repair efforts on several DMIS mainframe applications, and started an awareness program by making presentations to various middle management personnel.

B. Audit Scope, Objectives, and Methodology

The scope of our performance audit includes the BE agency-wide efforts to achieve Year 2000 computer system compliance. Our objective is to assess whether BE efforts provide reasonable assurances that important computer processing will continue without material interruptions or inaccuracies due to the Year 2000 problem. To accomplish this objective we reviewed and evaluated the adequacy of BE actions during the period of April 1, 1996 through March 31, 1998 to solve the Year 2000 problem. In conducting our audit, we used guidelines and criteria developed by both the Gartner Group and the United States Government Accounting Office (GAO).

We conducted our audit in accordance with generally accepted government auditing standards. Such standards require that we plan and perform our audit to adequately assess those operations which are included in our audit scope. Further, these standards require that we understand BE's internal control structure and its compliance with those laws, rules and regulations that are relevant to the operations which are included in our audit scope. An audit includes examining, on a test basis, evidence supporting transactions reported in the accounting and operating records and applying such other auditing procedures as we consider necessary in the circumstances. An audit also

includes assessing the estimates, judgments and decisions made by management. We believe that our audit provides a reasonable basis for our findings, conclusions and recommendations.

We use a risk-based approach to select activities for audit. Therefore, we focus our audit efforts on those activities we have identified through a preliminary survey as having the greatest probability for improvement. Consequently, by design, we use finite audit resources to identify where and how improvements can be made. We devote little audit effort to reviewing operations that may be relatively efficient or effective. As a result, we prepare our reports on an "exception basis." This report, therefore, highlights those areas needing improvement and does not address activities that may be functioning properly.

C. Results of Audit

We concluded that BE's efforts provide reasonable assurance for timely correction of the Year 2000 problem for most of its mainframe applications. Continuance of these efforts, as well as attention to certain weaknesses we identified during our examination, should help to ensure that mission-critical mainframe computer applications are corrected in a timely manner. However, we also concluded that BE's efforts to date do not reasonably assure that instructional and administrative functions performed on thousands of PCs throughout the BE and school districts will continue to operate and to produce correct results as the Year 2000 approaches. In addition, we concluded that BE's efforts regarding equipment with embedded computer programming do not offer reasonable assurance that the operation of school and BE facilities will not be significantly impacted by non-compliant computer code. The following sections of this report describe our observations and findings in greater detail.

1. Top Management Direction and Resource Allocations

The accomplishment of an agency-wide Year 2000 initiative is best ensured when top management prepares and issues a Year 2000 policy directive and program charter which formalizes and makes it possible to broadcast support for resolution of the problem. In addition, top management's endorsement of plans and strategies for achieving Year 2000 system compliance can help to ensure timely correction. Also, top management needs to be provided with an accurate estimate of the costs of correcting the problem so that adequate attention can be paid to planning for the resources necessary to do the job.

We have been advised that BE's upper management does support the Year 2000 Project, but we found no documented communication from the Chancellor or the Board announcing the Project or establishing the authority and responsibilities of the Team and of the many districts and BE units that share responsibility for the Project. In addition, we found no documentation attesting to top management approval for the Team's plans, strategies for completing the Project, or standards for reporting progress. Although the Team had prepared a cost estimate of \$3.3 million to \$6.8 million for in-house correction of mainframe applications, we found no single, comprehensive estimate of the costs for addressing correction throughout all of the BE. Each of these conditions

increases the risk that the Project may not be completed on time throughout the BE and the school system. Therefore, the BE should implement more comprehensive cost estimating and provide documented policy direction and Project approval from top management as soon as possible.

2. Awareness Program Efforts

Under the BE's Year 2000 strategy, the Team has direct responsibility for correcting payroll and personnel systems. Each of the school districts and each of the central offices remain ultimately responsible for solving the problem within their organizations, with the Team acting as a coordinator or consultant for these efforts. The Team does not have a formal monitoring role, nor is it expected to oversee the decentralized efforts to achieve Year 2000 compliance throughout the BE. The Team does informally monitor these efforts through meetings with technical staff to discuss testing procedures and problems, and participates in the final testing phase. The Team also responds to requests for advice. However, these decentralized efforts are not reviewed and signed-off by the Team, and progress reports are not prepared and provided to the Team. This strategy is not consistent with the command-and-control structure recommended by many industry experts as necessary for effective correction of the Year 2000 problem. Therefore, to ensure that the BE's Project is successful, we believe that it is particularly important for the Team to conduct effective efforts to promote agency-wide awareness of the Year 2000 problem and to provide a forum in which all stakeholders can communicate about resolving the problem.

We found that the Team began its outreach and awareness campaign for the Year 2000 problem in the Summer of 1997. However, with over 116,000 BE employees, the challenge of promoting agency-wide awareness is significant. To date, the Project Director has written articles about the Year 2000 problem for the Council of Supervisors and Administrators, for a teachers' union magazine and for the DMIS News (a publication circulated within the Board of Education). In addition, the Team has made awareness presentations to computer coordinators, the steering committee, and central office technical staff. We conclude that the Team must accomplish much more comprehensive outreach and awareness activities. For example, the Team needs to employ the BE's Internet site, paycheck flyers or an internal newsletter to promote agency-wide awareness.

A Steering Committee has been established to promote communication about and coordination of efforts to resolve the Year 2000 problem. Although the Committee first met in September 1997, it did not start meeting monthly until December 1997. Consequently, important issues pertaining to the Year 2000 problem may not have been addressed in a timely manner. For example, we noted that it was not until the December 1997 meeting that the legal issues associated with noncompliant Year 2000 systems began to be discussed and addressed. Yet, a widely-reported risk associated with noncompliant systems is the possibility that lawsuits may arise from the failure to process transactions and information correctly or timely. We also noted a lack of school district representation on the Committee, as well as a lack of continuity in central office personnel participation at Committee meetings. (BE officials informed us that the Team meets separately with the school district representation.) Moreover, of 20 participating central offices, just 10 offices were represented, on average, at the first six meetings. If the Committee is to be an effective tool for the

Project, it must meet on a regular basis, have an adequate and consistent representation, and address all important issues that pertain to resolution of the problem.

3. Mainframe Systems

BE efforts to correct most of its mainframe systems should reasonably assure timely compliance with Year 2000 requirements if such efforts are sustained. However, officials should pay particular attention to addressing the following conditions, which we noted during our examination:

- We found that the Student Automated Record Keeping System, which the City University of New York operates and maintains on behalf of BE, is at risk. The Division of High Schools depends on the System to track and report student attendance, transfers, transcripts, grades, and test scoring, among other items. The System uses a two-digit date field and it is not, therefore, Year 2000 compliant. However, the City University has not yet corrected any of the programs in the System. The current contract between the BE and the University regarding the System expires in June 2000, but it does not specify that the University needs to make it Year 2000 compliant. The BE's Team was unaware that the contract did not require the University to make the System compliant and the Team had no formal plan for ensuring the timely and correct processing of functions performed by the System.
- The Team expressed confidence that mainframe applications would be corrected and tested well in advance of the "time horizon to failure" (or earliest date the systems could fail) for these systems. However, the Team had not documented detailed test and implementation plans and time schedules for mainframe systems.

For example, the BE's Accounting/Budgeting System must be Year 2000 compliant by February 1999, at the latest. The Accounting Department is responsible for correcting the System's on-line programs and the Team is responsible for correcting the batch systems. Although the testing/implementation of the System is expected to require six months of effort and the results will be monitored by the Team, no plan existed for ensuring these important steps would be completed by the February 1999 "time horizon to failure."

4. PC Hardware and Software

BE officials indicated to us that they have given priority attention to mainframe systems and have focused less on the PC environment because they have concluded that noncompliant PCs represent a lesser risk to the agency's mission. While it is clear that mainframe payroll, personnel, accounting, and school administrative systems are mission critical and have primary importance, the need for a Year 2000 compliant PC environment at the BE must also be viewed as important. For example, teachers may use PCs as a teaching tool. Students obviously need exposure to properly functioning PCs to enhance their learning experience and to prepare them for the

technological environment they must live in. An official responsible for coordinating instructional computer development informed us that an estimated 48 percent of the PC hardware in use throughout the agency may not be Year 2000 compliant. Should this equipment fail, it may temporarily put at risk computer literacy programs and curriculum projects. Therefore, the failure of PC hardware and software poses some risk.

In response to the PC risk, the BE hired two educational software consultants in December 1997 to review issues related to Year 2000 compliance. In addition, the Team has made awareness presentations to several groups within BE Headquarters and to a group of school level officials. The Team also developed a patch for noncompliant hardware and made it available to the field. However, we found that Year 2000 compliance efforts have not established an inventory of PC hardware and software from the various BE divisions and the schools. The BE Team believes there are very few critical systems on PCs and that most PCs will run on January 1, 2000.

To address this assumption, the Team initiated intensive one-on-one "Readiness Surveys" in March 1998 with each central office and school to determine what applications, software, hardware and equipment they are using, whether they are compliant, actions that should be taken and items that should be followed-up. BE has expanded its Year 2000 Team to expedite this process. However, although BE has more than 1,200 facilities, just 30 surveys had been completed as of April 1998. Moreover, the results of two of the surveys indicated that much research and testing had to be done to determine what was being used and whether it was compliant. The Team has prepared a 42-page list of software and hardware products that indicates the vendor, Year 2000 status, and comments for use by personnel in the field.

We still believe this is a significant problem; an inventory is an essential step for both addressing the magnitude of the PC Year 2000 problem and for designing an effective plan for corrective action. As a result of the more limited efforts that BE has taken with respect to PCs, we conclude that there is a lack of assurance that important PC processing will continue in a timely and correct manner.

5. Computer Dependent Facilities Equipment

BE officials advised us that because most of the facilities in the agency utilize older equipment, very few of its equipment systems are likely to depend on embedded computer chips or computer code. They added that they believe most of the BE's computer-dependent equipment would have a manual operation mode for emergencies. However, as in the case of the PC environment, the BE has yet to establish an inventory of affected equipment so that the risk can be evaluated and adequate plans can be made. BE started addressing this issue in March 1998 by performing the one-on-one "Readiness Surveys." Accordingly, we conclude that management lacks adequate assurances that any of its important computer-based equipment systems will continue to operate acceptably when Year 2000 related processing dates and times are encountered.

Recommendations

1. *Provide a top management policy directive and program charter explaining the agency-wide approach, organizational structure, and responsibilities for the resolution of the Year 2000 problem.*
2. *Establish standards for reporting Year 2000 progress to upper management.*
3. *Establish an agency-wide cost estimate for resolution of the Year 2000 problem.*
4. *Improve the effectiveness of the agency-wide Year 2000 Project by communicating to personnel through such media as paycheck flyers, the Internet, and a newsletter.*
5. *Ensure that the Year 2000 Steering Committee meets regularly, has consistent and comprehensive representation, and addresses all issues that are relevant to correcting the problem.*
6. *Establish a plan for achieving Year 2000 compliance in the functions performed by the Student Automated Record Keeping System.*
7. *Improve monitoring at the agency-wide Year 2000 Project by requiring more formal monitoring over decentralized efforts.*
8. *Prepare documented and detailed test and implementation plans and schedules for mainframe computer systems.*
9. *Obtain inventories of agency-wide PC hardware and software, as well as computer-dependent equipment systems as a basis for assessing Year 2000 compliance risks and designing effective corrective action plans.*

A draft copy of this report was provided to BE officials for their review and comment. Their comments have been considered in the preparation of this report and are included as Appendix A. BE officials agree with all nine of our recommendations. They indicate that recommendations 3, 4, 5, and 9 are already implemented and that recommendations 1, 2, 6, 7, and 8 are slated for implementation.

The BE response to recommendation 3 identifies a \$2 million annual appropriation for the Year 2000 Project Office to primarily support mainframe applications. We continue to urge the BE to address the cost of correction from the broader, agency-wide perspective. The BE response to recommendation 5 does not specifically address the parts of the recommendation requiring the Steering Committee to address all relevant issues and to have comprehensive and consistent representation. We continue to believe that these are important considerations. Although the BE response to recommendation 6 indicates the status of necessary fixes for the Student Automated Record Keeping System, the response does not address the need for a plan for achieving Year 2000 compliance as the recommendation specifies. We reiterate the need for formal plans to cover correction of all critical applications.

Within 90 days after release of the final audit report, the Chancellor of the New York City Board of Education should report to the State Comptroller, advising what steps were taken to implement the recommendations contained herein, and where not implemented, the reasons therefor.

Major contributors to this report were Robert Mehrhoff, Richard Perreault, and Jorge Vazquez.

We wish to thank the management and staff at the Board of Education for the courtesies and cooperation extended to our auditors during this audit.

Very truly yours,

Jerry Barber
Audit Director

cc: Len Davis
David Wolovich



BOARD OF EDUCATION OF THE CITY OF NEW YORK

RUDOLPH F. CREW, Ed. D., Chancellor

LEN L. DAVIS, Auditor General

August 6, 1998

Jerry Barber, Audit Director
New York State Comptroller's Office
Division of Management Audits &
State Financial Services, 13th Floor
A.E. Smith State Office Building
Albany, New York 12236

Re: New York State Comptroller's Draft Audit
Report Assessing Progress Made by BOE in
Addressing Technology Requirements for the
Year 2000 (98-N-7)

Dear Mr. Barber:

Enclosed is the Board of Education's Division of Management Information Services (DMIS) responses to the recommendations in the above report.

DMIS agrees with the nine recommendations made by the auditors, and has already implemented four of them. The remaining five recommendations are slated for implementation by March 1999.

We are pleased the auditors concluded that the efforts undertaken by the Board provide reasonable assurance for timely correction of Year 2000 problem for most of its mainframe applications.

Sincerely,

Judith A. Rizzo
Deputy Chancellor for Instruction

JAR:ma
Enclosures

c: Rudolph F. Crew
Len L. Davis
Elspeth Taylor
David Wolovick

BOARD OF EDUCATION OF THE CITY OF NEW YORK
OFFICE OF AUDITOR GENERAL
External Liaison/Audit Implementation Unit

PAGE 1 OF 9

RESPONSE DATE: _____

AUDIT TITLE: Actions to Address Year 2000 Challenge

AUDITING AGENCY: Office of the State Comptroller

DIVISION: Department of Management Information Services -

DRAFT REPORT DATE: July 7, 1998

AUDIT NUMBER: 98-N-7

**C. RECOMMENDATION WHICH THE AGENCY
AGREES WITH BUT IS PENDING IMPLEMENTATION**

1. Provide a top management policy directive and program charter explaining the agency-wide approach, organizational structure, and responsibilities for the resolution of the Year 2000.

RESPONSE TO RECOMMENDATION

1. A Chancellor's circular for distribution in late August has been prepared and is being reviewed by senior management. Detailed instructions will follow in an Appendix to the SOPM (Standard Operating Procedures Manual) which will be distributed in September.

TARGET IMPLEMENTATION DATE
September, 1998

RESPONSIBILITY CENTER

Signature: _____

Print Name: David Wolovick

Print Title: Director

7/27/98
Date

Updated: July 98

BOARD OF EDUCATION OF THE CITY OF NEW YORK
OFFICE OF AUDITOR GENERAL
External Liaison/Audit Implementation Unit

PAGE 2 OF 9

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**C. RECOMMENDATION WHICH THE AGENCY
AGREES WITH BUT IS PENDING IMPLEMENTATION**

2. Establish standards for reporting Year 2000 progress to upper management.

RESPONSE TO RECOMMENDATION

2. The Chancellor's circular requires each office, district and superintendency to assign a Year 2000 liaison. The Year 2000 Project Office will receive regular status reports from the liaisons and escalate issues to senior management as appropriate.

TARGET IMPLEMENTATION DATE
September, 1998

RESPONSIBILITY CENTER

Signature: _____

Print Name: David Wolovick

Print Title: Director

7/27/98
Date

Updated: July 98

BOARD OF EDUCATION OF THE CITY OF NEW YORK
OFFICE OF AUDITOR GENERAL
External Liaison/Audit Implementation Unit

PAGE 3 OF 9

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**A. RECOMMENDATION WHICH THE AGENCY
HAS IMPLEMENTED**

3. Establish an agency-wide cost estimate for resolution of the Year 2000 problem.

RESPONSE TO RECOMMENDATION - IMPLEMENTATION PLAN

3. There is a \$2 million annual appropriation over 3 years to fund the Year 2000 Project Office, most of which will be applied to the analysis, renovation and testing of mainframe applications. In terms of PC's, networks and Telecommunications, much of the existing equipment is very old (some more than 10 years) and functionally obsolete. Thus, necessary replacement and/or upgrade will be done as part of the Board's commitment to upgrade its technology in support of instruction and administration in schools, not because of Year 2000 problems.

IMPLEMENTATION DATE

May, 1997

RESPONSIBILITY CENTER

Signature: _____

Print Name: David Wolovick

Print Title: Director of the Office of Business Systems

7/27/98
Date

BOARD OF EDUCATION OF THE CITY OF NEW YORK
OFFICE OF AUDITOR GENERAL
External Liaison/Audit Implementation Unit

PAGE 4 OF 9

RESPONSE DATE: _____

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**A. RECOMMENDATION WHICH THE AGENCY
HAS IMPLEMENTED**

4. Improve the effectiveness of the agency-wide Year 2000 Project by communicating to personnel through such media as paycheck flyers, the Internet, and a newsletter.

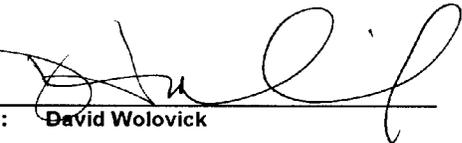
RESPONSE TO RECOMMENDATION - IMPLEMENTATION PLAN

4. Articles have appeared in the widely distributed DMIS Newsletter. Also, articles written by the Year 2000 Project Office have been published in the CSA newsletter and the UFT newsletter. A Year 2000 Website is in test now and we expect to have it linked to the BOE site by September.

IMPLEMENTATION DATE

Ongoing

RESPONSIBILITY CENTER

Signature: 

Print Name: David Wolovick

7/27/98

Date

Print Title: Director

Updated: July 98

BOARD OF EDUCATION OF THE CITY OF NEW YORK
OFFICE OF AUDITOR GENERAL
External Liaison/Audit Implementation Unit

PAGE 5 OF 9

RESPONSE DATE: _____

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**A. RECOMMENDATION WHICH THE AGENCY
HAS IMPLEMENTED**

5. Ensure that the Year 2000 Steering Committee meets regularly, has consistent and comprehensive representation, and addresses all issues that are relevant to correcting the problem.

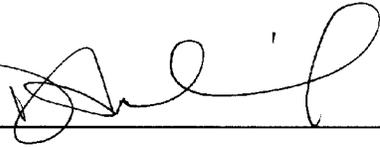
RESPONSE TO RECOMMENDATION - IMPLEMENTATION PLAN

5. The Year 2000 Steering Committee is meeting regularly every month.

IMPLEMENTATION DATE
Ongoing

RESPONSIBILITY CENTER

Signature: _____



Print Name: _____

Print Title: _____

7/27/98
Date

Updated: July 98

BOARD OF EDUCATION OF THE CITY OF NEW YORK
OFFICE OF AUDITOR GENERAL
External Liaison/Audit Implementation Unit

PAGE 6 OF 9

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**B. RECOMMENDATION WHICH THE AGENCY
HAS PARTIALLY IMPLEMENTED**

6. Establish a plan for achieving Year 2000 compliance in the functions performed by the Student Automated Record Keeping System.

WHAT HAS BEEN IMPLEMENTED?

6. UAPC has completed their analysis of the approximately 600 programs.

WHAT HAS TO BE IMPLEMENTED?

6. They have begun making fixes on the 75 which are not Year 2000 complaint. It is expected that they will be completed and tested by year end.

EXPECTED IMPLEMENTATION DATE

January, 1999

RESPONSIBILITY CENTER

Signature: _____

Print Name: David Wolovick

Print Title: Director

7/27/98
Date

Updated: July 98

BOARD OF EDUCATION OF THE CITY OF NEW YORK
OFFICE OF AUDITOR GENERAL
External Liaison/Audit Implementation Unit

PAGE 7 OF 9

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**C. RECOMMENDATION WHICH THE AGENCY
AGREES WITH BUT IS PENDING IMPLEMENTATION**

7. Improve monitoring at the agency-wide Year 2000 Project by requiring more formal monitoring over decentralized efforts.

RESPONSE TO RECOMMENDATION

7. The Chancellor's circular requires each office, district and superintendency to assign a Year 2000 liaison. The Year 2000 Project Office will receive regular status reports from the liaisons and escalate issues to senior management as appropriate.

TARGET IMPLEMENTATION DATE
September, 1998

RESPONSIBILITY CENTER

Signature: _____

Print Name: David Wolovick

Print Title: Director

7/27/98
Date

Updated: July 98

BOARD OF EDUCATION OF THE CITY OF NEW YORK
OFFICE OF AUDITOR GENERAL
External Liaison/Audit Implementation Unit

PAGE 8 OF 9

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**B. RECOMMENDATION WHICH THE AGENCY
HAS PARTIALLY IMPLEMENTED**

8. Prepare documented and detailed test and implementation plans and schedules for mainframe computer systems.

WHAT HAS BEEN IMPLEMENTED?

8. Documented and detailed test plans are available for H-Bank (Administrative payroll) which is scheduled to be completed by October.

WHAT HAS TO BE IMPLEMENTED?

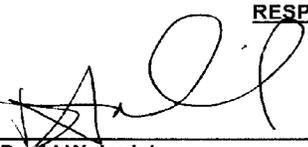
8. As the other systems are ready, similar plans will be created. For building our test beds, we are using a tool from Compuware called Hiperstation which captures and plays back production and test scripts.

EXPECTED IMPLEMENTATION DATE

March, 1999

RESPONSIBILITY CENTER

Signature: _____



Print Name: David Wolovick

Print Title: Director

7/27/98

Date

Updated: July 98

BOARD OF EDUCATION OF THE CITY OF NEW YORK
OFFICE OF AUDITOR GENERAL
External Liaison/Audit Implementation Unit

PAGE 9 OF 9

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**A. RECOMMENDATION WHICH THE AGENCY
HAS IMPLEMENTED**

9. Obtain inventories of agency-wide PC hardware and software, as well as computer-dependent equipment systems as a basis for assessing Year 2000 compliance risks and designing effective corrective action plans.

RESPONSE TO RECOMMENDATION - IMPLEMENTATION PLAN

9. We have developed a comprehensive database of software and hardware commonly found in the school system and we have contacted the vendors, searched the web, etc., to determine what, if any, corrective actions need to be taken. In addition, an inventory has been compiled centrally, including LANs, instructional labs, telephone systems and facility-related equipment. This inventory, combined with the database of hardware and software, will be distributed to the schools and offices and is being made available on the Web. Principals and Office Heads will be required to verify the accuracy of the information and to take whatever actions are indicated.

IMPLEMENTATION DATE

Ongoing

RESPONSIBILITY CENTER

Signature: _____

Print Name: David Wolovick

Print Title: Director of the Office of Business Systems

7/27/98
Date

Updated: July 98