

Audit Report

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**Maryland Higher Education Commission**

January 2017

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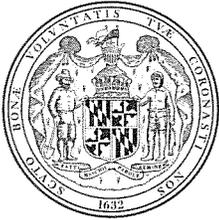
**OFFICE OF LEGISLATIVE AUDITS**  
DEPARTMENT OF LEGISLATIVE SERVICES  
MARYLAND GENERAL ASSEMBLY

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DEPARTMENT OF LEGISLATIVE SERVICES  
OFFICE OF LEGISLATIVE AUDITS  
MARYLAND GENERAL ASSEMBLY

Warren G. Deschenaux  
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Legislative Auditor

January 20, 2017

Senator Craig J. Zucker, Co-Chair, Joint Audit Committee  
Delegate C. William Frick, Co-Chair, Joint Audit Committee  
Members of Joint Audit Committee  
Annapolis, Maryland

Ladies and Gentlemen:

We have conducted a fiscal compliance audit of the Maryland Higher Education Commission (MHEC) for the period beginning August 6, 2012 and ending November 4, 2015. MHEC provides statewide planning, leadership, coordination, and advocacy for Maryland's postsecondary educational institutions. MHEC also administers several aid programs to these institutions and provides financial assistance to students.

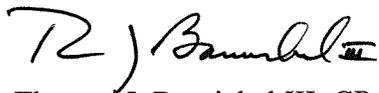
Our audit disclosed that MHEC did not always take the necessary steps, in accordance with MHEC's established policies, to ensure that student service obligations were fulfilled as a condition for certain career-based financial aid awards. Such awards totaled \$4.6 million during fiscal year 2015. In addition, student accounts requiring repayment due to the failure to fulfill service requirements were not always pursued as called for by MHEC's policies and State regulations. As of March 1, 2016, there were 233 accounts, outstanding from 1 to 11 years, with balances totaling approximately \$1.5 million for which MHEC had never received a payment or had not received a payment for more than one year.

MHEC had not established sufficient controls over the transactions recorded on its automated financial aid system, the user accounts and related capabilities activated on the system, and the personally identifiable information (PII) of financial aid applicants. For example, a number of MHEC employees could change information affecting financial aid award decisions and amounts without these changes being reviewed by supervisory personnel. We also identified 1,256,320 unique social security numbers stored in one system database table that were not properly protected.

Furthermore, MHEC had not implemented effective procedures for ensuring that all payments made to community colleges for retirement and pension contributions, which totaled \$54.5 million in fiscal year 2015, as well as payments for certain fee reimbursements totaling \$11.5 million, were proper.

MHEC's response to this audit is included as an appendix to this report. We wish to acknowledge the cooperation extended to us during the course of this audit by MHEC.

Respectfully submitted,

A handwritten signature in black ink, appearing to read "TJ Barnickel III". The signature is written in a cursive style with a horizontal line at the end.

Thomas J. Barnickel III, CPA  
Legislative Auditor

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## Background Information

### Agency Responsibilities

The Maryland Higher Education Commission (MHEC) provides statewide planning, leadership, coordination, and advocacy for Maryland's postsecondary educational institutions. MHEC also administers several aid programs to these institutions and provides financial assistance to students. Student financial aid programs administered by MHEC are primarily State funded.

According to the State's records, during fiscal year 2015, MHEC provided approximately \$340.6 million in financial assistance to public and non-public institutions of higher education (including community colleges) throughout the State. MHEC also made more than 58,617 financial aid awards totaling approximately \$107.8 million to students pursuing postsecondary education (see Table 1 below) and provided approximately \$10.9 million in other educational grants to various State, local, and private institutions during fiscal year 2015. In addition, according to the State's records, MHEC's operating expenditures totaled approximately \$6.7 million during fiscal year 2015.

**Table 1  
Grants and Scholarships to Students  
Fiscal Year 2015**

Grants and Scholarships	Amount (millions)
Need-Based (Guaranteed Access, Educational Assistance, Part-time Grant, Graduate and Professional Scholarship)	\$ 86.1
Legislative (Senatorial and Delegate)	12.1
Career-Based (Riley Fire and Emergency, Hoffman Loan Assistance, Maryland Loan Assistance, Workforce Shortage Assistance, Nurse Support Program)	5.3
Unique Population and Other	3.5
Merit-Based (Distinguished Scholar)	0.8
<b>Total</b>	<b>\$ 107.8</b>

Source: 2017 Executive Budget Book

## **Status of Findings From Preceding Audit Report**

Our audit included a review to determine the status of the nine findings contained in our preceding audit report dated October 29, 2013. We determined that MHEC satisfactorily addressed six of the findings. The remaining three findings are repeated in this report.

# Findings and Recommendations

## Student Financial Aid - Service Obligations

### Background

Certain career-based financial aid awards require fulfillment of a service obligation. For example, recipients of graduate nursing faculty scholarships are required to work as a full-time nurse faculty member, hospital educator, or in an approved educational role for one year for each academic year the award was received. Recipients who do not fulfill their service obligations must repay their awards unless the obligation is forgiven as provided for in the agreements between MHEC and the students receiving the aid (for example, as a result of an unforeseen disability). According to MHEC's records, 836 financial aid awards with service obligation requirements totaling approximately \$4.6 million were awarded in fiscal year 2015.

Each award recipient is placed in *deferral status* while he or she is enrolled as a student, meaning that the service obligation is temporarily deferred. Once a recipient is no longer enrolled, he or she must begin to fulfill the service obligation and is placed in a *pending status*. Under certain circumstances, such as a temporary disability, a deferral status may be extended for a period after leaving school.

MHEC's policy is to send each recipient in pending status an initial service obligation notice to obtain information regarding eligible employment to assess whether the recipient is fulfilling the service obligation. Eligible employment reported by the recipient is subsequently confirmed with the employer using an employment verification notice, and the recipient is then placed into *service status*. These notification and confirmation procedures are repeated on an annual basis for each recipient until the service obligation is fulfilled.

According to MHEC's policy, if MHEC is unable to confirm that a recipient is fulfilling his or her service obligation, the recipient is placed in *repayment status*, which requires repayment of the financial aid award. Awards in repayment status include accounts in MHEC's accounts receivable records and awards pending transfer to the accounting department for inclusion in the accounts receivable records. The balance of an award to be collected through accounts receivable may be less than the original award if a portion of the service obligation has been fulfilled.

According to MHEC's records, as of April 1, 2016, there were 3,516 service obligation award recipients subject to monitoring, with original awards totaling \$31.8 million as detailed in Table 2.

**Table 2**  
**Status of Service Obligation Awards**  
*(as of April 1, 2016)*

Status	Recipients	Award Amount (millions)
Deferral	825	\$7.6
Pending	238	2.2
Service	735	8.0
Repayment	1,718	14.0
<b>Total</b>	<b>3,516</b>	<b>\$31.8</b>

Source: MHEC's Records

**Finding 1**

**MHEC did not adequately monitor student service obligation fulfillment as a condition for certain financial aid awards and did not always place non-responsive recipients into repayment status.**

**Analysis**

MHEC did not adequately monitor student service obligation fulfillment as a condition for certain financial aid awards and did not always place non-responsive recipients into repayment status. In particular, our testing disclosed that the issuance of required service obligation and employment verification notices and the performance of required follow-up action was often delayed well beyond the time frames established by MHEC or were not performed at all. In addition, recipients who failed to respond to such notices were often not placed into repayment status to initiate collection efforts. Timely adherence to MHEC's policies and procedures for recipient and employer notification and verification is critical for ensuring that service obligation requirements are fulfilled, or that the financial aid is repaid.

Initial Service Obligation and Employer Verification Notices

We reviewed 10 judgmentally selected recipients who received financial aid awards during our audit period and had service obligations totaling approximately \$300,000. Our review disclosed delays of 27 to 48 days in sending an initial service obligation notice to 3 recipients, after being placed in pending status, with award amounts totaling \$71,000. In addition, initial employment verification notices had not been sent timely to employers for 7 recipients. For example, as of April 2016, MHEC had not sent an initial employment verification notice for 2 recipients, with award amounts totaling \$74,000, who had provided employment information to MHEC in April and

August of 2015. Since MHEC's policy was to generate required notices on a weekly basis, initial service obligation and employment verification notices should generally be sent no more than seven days after a recipient is placed in pending status or employment information is received from a recipient.

#### Follow-up Notices

Our review of the same 10 recipients also disclosed delays in sending required follow-up notices. MHEC did not send timely follow-up notices to 4 recipients who did not respond to the initial service obligation notice. For example, one recipient who failed to respond to the initial service obligation notice was not sent a follow-up notice until 92 days after the first notice was sent, rather than within the required 21 days. A third notice was sent 34 days later; the student finally responded 139 days after the first notice was sent. Furthermore, MHEC had not followed up with 5 employers that were sent initial employment verification notices even though, as of April 1, 2016, no responses had been received from the employers for 42 to 548 days. These delays were well past the time frame in MHEC's policy, which specifies that MHEC is to send two follow-up notices at 21-day intervals to recipients or employers that do not respond. If there is no response after the third notice, MHEC's policy requires the recipient be placed into repayment status, requiring the recipient to repay the aid received.

#### Repayment Status

Our test of 10 other recipients of financial aid awards with service obligations totaling approximately \$130,000, who were sent their third and final service obligation notices between October and December 2015, disclosed that 9 had not been placed into repayment status even though no responses had been received from them as of April 1, 2016. These 9 recipients had received financial aid totaling \$119,000. Consequently, these accounts were not transferred to MHEC's accounting department to initiate collection efforts. MHEC's policy is that a recipient is to be placed into repayment status if no response is received within 21 days of the final notice. The remaining recipient tested did respond to MHEC and did not need to be placed into repayment status.

Based on our review and discussions with MHEC personnel, we determined that these conditions occurred for various reasons. For example, reports of recipients and employers requiring an initial or follow-up notice and monthly repayment reports, which identify accounts that need to be placed in repayment status, were not always generated within the required time frame, such as weekly. Consequently, these recipients and employers were not being promptly identified to promote compliance with MHEC's policies. MHEC also advised that certain problems with its automated system, such as problems with the status change function, have contributed to delays in identifying recipients who should be placed into repayment status.

Similar conditions regarding the timeliness of issuance of service obligation notices and placement of accounts in repayment status were commented upon in our two preceding audit reports. Although considerable efforts were made to improve, issues continued to exist regarding certain aspects of the process and additional steps need to be taken to ensure timely oversight of service obligations.

**Recommendation 1**

**We recommend that MHEC**

- a. generate reports of recipients and employers requiring an initial or follow-up notice, as well as repayment reports, on a timely basis;**
- b. ensure that service obligation and employer verification notices are sent and followed-up on in a timely manner (repeat);**
- c. take steps to correct any system deficiencies; and**
- d. place accounts into repayment status and transfer them to the accounting department to initiate collection efforts when the applicable recipients and employers do not confirm that service obligations are being performed (repeat).**

**Finding 2**

**Delinquent service obligation accounts were not properly pursued for collection and referred to the Department of Budget and Management's Central Collection Unit.**

**Analysis**

Delinquent service obligation accounts were not adequately pursued for collection and referred to the Department of Budget and Management's Central Collection Unit (CCU) in accordance with its regulations. According to MHEC's records, as of March 1, 2016, there were 233 accounts, outstanding from 1 to 11 years, with balances totaling approximately \$1.5 million for which MHEC had never received a payment or had not received a payment for more than one year.

Furthermore, our test of 10 past due accounts in repayment status, totaling approximately \$69,400, disclosed that none of the 10 accounts had been adequately pursued for collection. As of March 1, 2016, no payments had been received on these 10 accounts for periods ranging from 174 to 868 days. For 4 accounts, MHEC had sent only two demand for payment notices. Although MHEC sent three demand notices for another 4 accounts, the unpaid accounts had not been forwarded to CCU for collection as required. For one of the remaining two accounts, no demand for payment had been sent, while one payment demand was sent for the other account. In this regard, MHEC did not generate periodic aging reports to identify delinquent accounts for appropriate action but, rather, identified accounts based on manual

reviews. As of June 30, 2015, MHEC's accounts receivable totaled approximately \$6.2 million.

CCU regulations generally require that three written demands for payment be made on accounts at 30-day intervals and, if no payments are received, the accounts be considered delinquent and immediately referred to CCU for collection assistance. Similar conditions were commented upon in our three preceding audit reports.

## **Recommendation 2**

**We recommend that MHEC**

- a. ensure that written payment demands are sent at 30-day intervals (repeat),**
- b. ensure that delinquent accounts are referred to CCU for collection assistance as required (repeat), and**
- c. generate periodic aging reports to assist in these efforts.**

## **Student Financial Aid – Automated Systems**

### **Background**

MHEC uses its Maryland College Aid Processing System (MDCAPS) to determine and monitor student financial aid awards based upon information recorded in the system and to maintain and track related information. MDCAPS stores certain personal, academic, and financial information for individuals applying for financial aid to attend Maryland colleges. MHEC staff use information from several sources, including the application for financial aid—the United States Department of Education's Free Application for Federal Student Aid (FAFSA)—and data received from the colleges to determine whether applicants are eligible for one of MHEC's financial aid programs. According to the State's records, MHEC processed 58,617 financial aid awards totaling approximately \$107.8 million in fiscal year 2015. MDCAPS also includes the Service Obligation Loan Repayment (SOLR) module, which is used to monitor the fulfillment of service obligations by individuals who, as students, received financial aid with service obligation requirements (as commented upon in Findings 1 and 2).

### **Finding 3**

**Sufficient controls were not established over critical financial aid data recorded on MDCAPS, as well as over the issuance and monitoring of user access to MDCAPS.**

### **Analysis**

Sufficient controls were not established to ensure the propriety of critical financial aid data recorded in MDCAPS. Additionally, controls over the issuance and monitoring

of user access capabilities in MDCAPS were also not adequate. System access capabilities were granted to MHEC employees as well as to certain external users, such as employees of higher education institutions. As of March 10, 2016, there were 1,209 active user accounts on the system, of which 1,172 were external user accounts.

- Changes made to critical information recorded in MDCAPS were not reviewed by supervisory personnel using available audit trails and activity reports. Consequently, MHEC lacked assurance that all such changes were authorized and accurately processed. We identified 18 MHEC employees with access capabilities that allowed them to change critical financial aid award data, including 2 employees who did not need these capabilities to perform their job duties. Specifically, these employees could change information in critical screens that could affect financial aid award decisions as well as award amounts, such as adjustments to family income and student grade point average. We noted that 14 of these employees could also make direct adjustments to financial aid award amounts without subsequent review.
- MHEC did not require that requests for the assignment or modification of system user access capabilities be authorized. Although an authorization request form was to be prepared by MHEC employees, the form did not require supervisory approval, and our review of five active employee user accounts disclosed no form was on file for two of the accounts. Similarly, external users were required to submit a signed user agreement to MHEC to establish or modify an account; however, documented approval by authorized personnel at the applicable entity was not required.

Our review of 15 active external user accounts (financial aid employees at higher education institutions) revealed that MHEC did not have user agreements on file for 11 of the accounts. Access granted to external users was generally limited to financial aid awards within the user's institution; nevertheless, the access allowed these users to certify financial aid awarded for disbursement to students within the user's institution. In addition, we noted that 9 of the 11 external users without agreements on file had been granted access that provided them with the capability to establish a user account for another individual within the same institution without requesting the access through MHEC.

- Periodic reviews of access granted to MHEC employees and external users were not effectively performed to identify inappropriate or unnecessary access so that corrective action could be taken, such as removing unnecessary access. Quarterly reviews performed of the propriety of system access granted to MHEC employees were not independent because the employee who conducted them was also the employee responsible for establishing, modifying, and disabling user accounts.

Although MHEC sent requests to external entities in July 2015 to review their user accounts to ensure the propriety of individual access capabilities, MHEC did not require that documentation be returned to evidence that the reviews had been completed. As of May 2016, there were 471 active external user accounts and 5 MHEC user accounts that had not logged into MDCAPS for at least six months, the oldest of which had not logged in since January 2010; therefore, many of these accounts may no longer be needed and should be deleted.

The State of Maryland's *Information Security Policy* requires proper account management practices, such as obtaining authorization from appropriate officials to issue user accounts to intended individuals and disabling user accounts when no longer needed, which is immediately upon user exit from employment or 60 days for inactive accounts. Without adequate monitoring of accounts and transactions, improper awards could be issued to ineligible students.

### **Recommendation 3**

**We recommend that MHEC**

- a. ensure that employees who do not have the access capabilities to modify data in MDCAPS use available audit trails and activity reports to verify that critical changes recorded are accurate and properly authorized;**
- b. require independent authorization for the establishment or modification of all user access accounts, and retain authorization forms on file;**
- c. ensure that periodic reviews of employee access are performed by an employee independent of the process of establishing or modifying user accounts, and that documentation of access reviews performed by external entities is received and reviewed; and**
- d. remove unnecessary or improper user accounts or access capabilities.**

### **Finding 4**

**Critical adjustments to recipient accounts were processed on SOLR without independent verification.**

### **Analysis**

Controls over recipient account information recorded in SOLR were not sufficient since 20 employees were assigned system capabilities that allowed them to process adjustments in SOLR without independent supervisory review. As a result, these employees could improperly forgive or defer a recipient's service obligation, or record a recipient's service obligation as fulfilled. In this regard, automated output reports of adjustments processed in SOLR were not generated for verification to supporting documentation, and there was no on-line approval function. While the aforementioned

20 employees generally needed access to perform their job duties, this lack of control allowed them to process adjustments without review.

During the period from July 1, 2015 through April 1, 2016, MHEC made 1,041 adjustments in SOLR to designate a recipient's service obligation status as fulfilled, forgiven, or deferred; these 1,041 recipients had been awarded financial aid totaling approximately \$8.2 million. During our testing, we did not note any improper status adjustments.

#### **Recommendation 4**

**We recommend that MHEC establish procedures, including the use of output reports, to independently verify the propriety of critical adjustments to recipient service obligation accounts on SOLR based on a review of supporting documentation.**

### **Aid to Community Colleges**

#### **Finding 5**

**MHEC did not ensure the State's retirement and pension contributions for community college employees, which totaled approximately \$54.5 million for fiscal year 2015, were proper.**

#### **Analysis**

MHEC did not ensure that the State's retirement and pension contributions for community college employees were proper. Although MHEC received from the colleges certain audited data relating to the State's required contributions, MHEC did not adequately review and evaluate these data to ensure the propriety of contributions made. Our review of the audited data and MHEC's records disclosed certain unexplained differences that MHEC had not resolved.

The State, through MHEC, directly funds the employers' portions of the retirement and pension costs for community college employees who are members of the Maryland State Teachers Retirement and Pension Systems (MSTRPS). Subsequently, community colleges are required to reimburse MHEC for retirement and pension costs paid for employees for whom the college later received federal financial assistance. In fiscal year 2015, State funding for these employees enrolled in MSTRPS totaled approximately \$40.3 million, and the community colleges reimbursed MHEC \$2.7 million for costs covered by federal financial assistance. In addition, the State, through MHEC, funds an optional private retirement plan for certain community college employees as a way to attract and retain qualified professors; these employer

contributions are initially made by the colleges, then reimbursed by MHEC, and totaled approximately \$14.2 million during fiscal year 2015.

MHEC's failure to ensure the State's retirement and pension contributions were proper has been commented upon in numerous audit reports since 2001. In response to our preceding audit report, MHEC established procedures, beginning with fiscal year 2015, that required the community colleges to provide certain assurances from the colleges' independent auditors regarding these retirement and pension costs, as a means for MHEC to ensure their propriety. Specifically, the auditors were required to provide assurances that (1) the federally funded reimbursement amounts for MSTRPS retirement and pension costs initially funded by MHEC, as determined and reported by the colleges, are complete and accurate; and that (2) the amounts billed to MHEC by the colleges for employees in the optional retirement plan are based on actual costs incurred by the colleges, and that the employees are eligible for the State's reimbursement.

As required, the audited amounts due to and from MHEC for fiscal year 2015 were included in each college's annual financial report to MHEC. The auditors' reports compared these amounts to the actual amounts paid to MHEC for employees in the MSTRPS and the amounts received by the colleges from MHEC for optional retirement plan employees during the year. In the aggregate, the annual financial reports for fiscal year 2015 concluded that \$384,292 was due from the colleges to MHEC for employees in the MSTRPS, and \$2,858,555 was due from MHEC to the colleges for employees in the optional retirement plan.

However, MHEC did not adequately review the audited data received and did not take appropriate action to ensure the propriety of retirement and pension contributions made. In this regard, MHEC noted certain differences between the audited data and MHEC's records but did not investigate and resolve those differences. For example, according to the audited data, the amounts received by the colleges from MHEC for fiscal year 2015 for employees in the optional retirement plan totaled \$13,309,247. According to MHEC's records, however, fiscal year 2015 payments to the colleges totaled \$14,216,154, representing a difference of \$906,907. Similar differences were noted between the audited data and MHEC's records for the reimbursement amounts for MSTRPS retirement and pension costs. Although there may legitimate reasons for differences in these amounts, such as timing differences in when transactions are recorded or paid, MHEC did not investigate these differences and, therefore, took no further action to settle the previously noted amounts due to (\$2,858,555) or from (\$384,292) the colleges for fiscal year 2015 retirement and pension contributions.

### **Recommendation 5**

**We recommend that MHEC ensure that the amounts paid for the State's share of community college employees' retirement and pension costs are proper.**

**Specifically, we recommend that MHEC**

- a. thoroughly review audited retirement and pension contribution data received from community colleges and resolve, on a timely basis, differences between the audited data and corresponding amounts in its own records, including the aforementioned differences;**
- b. take appropriate actions to pay or collect differences in amounts owed; and**
- c. document the actions taken.**

### **Finding 6**

**MHEC did not have adequate procedures to ensure the propriety of State funding to reimburse community colleges for certain nonresident fees and for grants for the English for Speakers of Other Languages program. Such payments totaled \$11.5 million in fiscal year 2015.**

### **Analysis**

MHEC did not have adequate procedures to ensure the propriety of State payments to community colleges for reimbursements of certain nonresident student fees as well as for grants for the English for Speakers of Other Languages (ESOL) program. Supervisory personnel who reviewed the payment calculations prior to final processing did not review supporting enrollment data received from the colleges, and there was no documentation that the enrollment data received from the colleges had been independently verified. According to the State's records, nonresident student fees and ESOL program payments to community colleges totaled \$6 million and \$5.5 million, respectively, in fiscal year 2015.

For students who are State residents and who are enrolled in certain instructional programs, such as programs designated by MHEC as a health manpower shortage or high demand occupation, State law provides that MHEC shall pay any applicable nonresident (out-of-county) fees. State law also provides that MHEC shall pay a community college \$800 for each full-time equivalent student enrolled in the community college and in the county's ESOL program.

At the end of each semester for nonresident fees and annually for ESOL grants, colleges submitted the necessary enrollment data to MHEC, including a list of students, and MHEC used the data to calculate and process the payments due. Independent supervisory personnel within MHEC reviewed the payment calculations for mathematical accuracy prior to final processing, but did not review the supporting enrollment data received from the colleges. MHEC advised us that it later reviewed

the enrollment data for nonresident fees, after the data had been subject to the colleges' independent audits, and compared these data to the enrollment data supporting the payment calculations; however, there was no documentation of this review. Our comparison of the supporting enrollment data and the audited enrollment data for fiscal year 2015 nonresident fees disclosed certain minor differences that MHEC had not identified. The ESOL program enrollment data received from the colleges was not subject to audit, and MHEC did not have a procedure to independently verify these data.

### **Recommendation 6**

**We recommend that MHEC**

- a. ensure that the supervisory review of the calculation of nonresident fee and ESOL program payments includes a review of the supporting enrollment documentation received from the colleges;**
- b. document its review of audited enrollment data for the purpose of ensuring the propriety of nonresident fee payments; and**
- c. establish procedures to verify, at least on a test basis, that ESOL enrollment data received from the colleges were accurate.**

## **Information System Security and Control**

### **Background**

MHEC's Office of Information Technology (OIT) was solely responsible for the MHEC's information technology support up to November 2015. However, beginning in November 2015, MHEC began a conversion to use the State of Maryland Department of Information Technology's (DoIT) centralized IT support services, which include the following functions:

- IT Service Desk
- Hardware Support
- Software Support
- Network and IT Security Services (malware protection and firewall and intrusion detection prevention systems operations and maintenance)
- IT Procurement Services

MHEC has a local area network with connections to multiple virtual servers used for file and print sharing, application processing, and Internet connectivity. MHEC's key system, MDCAPS, stores personal, academic, and financial information for individuals applying for financial aid to attend Maryland colleges. MHEC relies upon a vendor for support of the MDCAPS application and database while DoIT supports the related hosting server. The conditions noted below existed at the time of our audit,

which was after MHEC began using DoIT's centralized support services. Going forward, the actions taken by MHEC to address certain of these conditions will need to be coordinated with DoIT.

**Finding 7**

**The MHEC network was not sufficiently secured in that effective intrusion detection prevention system coverage did not exist.**

**Analysis**

The MHEC network was not sufficiently secured in that effective intrusion detection prevention system (IDPS) coverage did not exist.

- IDPS inspection only applied to outbound traffic from the MHEC internal network to the Internet. Accordingly, no other traffic (including all inbound traffic) was subject to IDPS inspection.
- IDPS coverage for encrypted traffic from untrusted sources to five critical MHEC servers did not exist. Specifically, network-based IDPS coverage for encrypted traffic did not exist since the IDPS appliance (which could decrypt encrypted traffic) was not configured to decrypt encrypted network traffic. Furthermore, host-based IDPS coverage was not enabled on the five aforementioned MHEC servers that processed encrypted traffic.

Similar conditions were commented upon in our preceding audit report. The absence of IDPS coverage for such traffic created a network security risk as such traffic could contain malicious exploits which are not detected. The State of Maryland's *Information Security Policy* requires that agencies protect against malicious code and attacks by implementing protections including the use of IDPS to monitor system events, detect attacks, and identify unauthorized use of information systems and/or confidential information.

**Recommendation 7**

**We recommend that adequate IDPS coverage be applied to the MHEC network (repeat). Specifically, we recommend that**

- a. a documented review and assessment of network security risks from network traffic (including encrypted traffic) to/from untrusted entities be performed to identify how IDPS coverage should be best applied; and**
- b. based on the review and assessment of security risks, IDPS coverage be implemented to address the aforementioned concerns.**

**Finding 8**

**Sensitive personally identifiable information (PII) in the MDCAPS database was not properly protected.**

**Analysis**

Sensitive PII (related to individuals applying for financial aid to attend Maryland colleges) in the MDCAPS database was not properly protected. Specifically, we noted that PII (full names and associated social security numbers) was stored in clear text within the MDCAPS database. With the assistance of the MDCAPS vendor, we identified 1,256,320 unique social security numbers stored in one database table. We were advised by the MDCAPS vendor that the database contained 28 separate production database tables which may contain social security numbers. Separately, we determined that this sensitive PII was not protected by other substantial mitigating controls.

This sensitive PII, which is commonly sought by criminals for use in identity theft, should be protected by appropriate information system security controls. The State of Maryland's *Information Security Policy* requires each agency to protect confidential data using encryption technologies and/or other substantial mitigating controls.

**Recommendation 8**

**We recommend that MHEC, with assistance of its MDCAPS vendor**

- a. identify all social security numbers contained in the MDCAPS database; and**
- b. delete those that are not needed, and ensure all remaining social security numbers are properly protected by encryption.**

## **Audit Scope, Objectives, and Methodology**

We have conducted a fiscal compliance audit of the Maryland Higher Education Commission (MHEC) for the period beginning August 6, 2012 and ending November 4, 2015. The audit was conducted in accordance with generally accepted government auditing standards. 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.

As prescribed by the State Government Article, Section 2-1221 of the Annotated Code of Maryland, the objectives of this audit were to examine MHEC's financial transactions, records, and internal control, and to evaluate its compliance with applicable State laws, rules, and regulations.

In planning and conducting our audit, we focused on the major financial-related areas of operations based on assessments of significance and risk. The areas addressed by the audit included financial aid, grants to nonpublic and community colleges, cash receipts, accounts receivable, and information systems. We also determined the status of the findings contained in our preceding audit report.

To accomplish our audit objectives, our audit procedures included inquiries of appropriate personnel, inspections of documents and records, observations of MHEC's operations, and tests of transactions. Generally, transactions were selected for testing based on auditor judgment, which primarily considers risk. Unless otherwise specifically indicated, neither statistical nor non-statistical audit sampling was used to select the transactions tested. Therefore, the results of the tests cannot be used to project those results to the entire population from which the test items were selected.

We also performed various data extracts of pertinent information from the State's Financial Management Information System (such as revenue and expenditure data) and the State's Central Payroll Bureau (payroll data). The extracts are performed as part of ongoing internal processes established by the Office of Legislative Audits and were subject to various tests to determine data reliability. We also extracted data from the Maryland College Aid Processing System (MDCAPS) for examining user access and the monitoring of certain conditions of financial aid. We determined that the data extracted from these various sources were sufficiently reliable for the purposes the data were used during this audit. Finally, we performed other auditing procedures that we considered necessary to achieve our objectives. The reliability of data used in this report for background or informational purposes was not assessed.

MHEC's management is responsible for establishing and maintaining effective internal control. Internal control is a process designed to provide reasonable assurance that objectives pertaining to the reliability of financial records, effectiveness and efficiency of operations including safeguarding of assets, and compliance with applicable laws, rules, and regulations are achieved.

Because of inherent limitations in internal control, errors or fraud may nevertheless occur and not be detected. Also, projections of any evaluation of internal control to future periods are subject to the risk that conditions may change or compliance with policies and procedures may deteriorate.

Our reports are designed to assist the Maryland General Assembly in exercising its legislative oversight function and to provide constructive recommendations for improving State operations. As a result, our reports generally do not address activities we reviewed that are functioning properly.

This report includes findings relating to conditions that we consider to be significant deficiencies in the design or operation of internal control that could adversely affect MHEC's ability to maintain reliable financial records, operate effectively and efficiently, and/or comply with applicable laws, rules, and regulations. Our report also includes findings regarding significant instances of noncompliance with applicable laws, rules, or regulations. Other less significant findings were communicated to MHEC that did not warrant inclusion in this report.

MHEC's response to our findings and recommendations is included as an appendix to this report. As prescribed in the State Government Article, Section 2-1224 of the Annotated Code of Maryland, we will advise MHEC regarding the results of our review of its response.

## APPENDIX



Larry Hogan  
Governor

Boyd K. Rutherford  
Lt. Governor

Anwer Hasan  
Chairperson

James D. Fielder, Jr., Ph. D.  
Secretary

January 18, 2017

Thomas J. Barnickel, CPA  
Legislative Auditor  
Department of Legislative Services  
Office of Legislative Audits  
301 West Preston Street  
Room 1202  
Baltimore, MD 21201

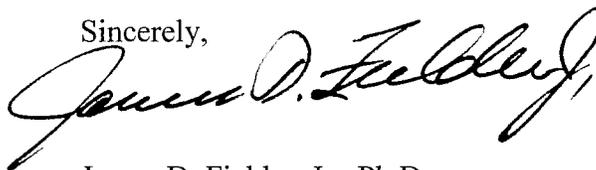
Dear Mr. Barnickel:

Thank you for providing the Maryland Higher Education Commission (MHEC) the opportunity to respond to the findings addressed in the Office of Legislative Audits (OLA) draft audit report issued for the period beginning August 6, 2012 and ending November 4, 2015.

Enclosed in Exhibit I, you will find our revised responses to the draft audit report, outlining our positions and our plans to eliminate these findings. I wish to acknowledge MHEC's staff in their efforts addressing these findings and want to reiterate MHEC has made significant progress rectifying these issues. Please feel free to contact Geoffrey Newman, Assistant Secretary of Finance and Administration at [geoff.newman@maryland.gov](mailto:geoff.newman@maryland.gov) or Jeffrey Cann, Director of Budget at [jeff.cann@maryland.gov](mailto:jeff.cann@maryland.gov), if you have any questions or concerns regarding our responses.

We look forward to a positive and productive dialogue.

Sincerely,



James D. Fielder, Jr., Ph.D.  
Secretary

**Finding 1**

**MHEC did not adequately monitor student service obligation fulfillment as a condition for certain financial aid awards and did not always place non-responsive recipients into repayment status.**

**Recommendation 1**

**We recommend that MHEC**

- a. generate reports of recipients and employers requiring an initial or follow-up notice, as well as repayment reports, on a timely basis;**
- b. ensure that service obligation and employer verification notices are sent and followed-up on in a timely manner (repeat);**
- c. take steps to correct any system deficiencies; and**
- d. place accounts into repayment status and transfer them to the accounting department to initiate collection efforts when the applicable recipients and employers do not confirm that service obligations are being performed (repeat).**

**MHEC Response:**

MHEC concurs with this finding. MHEC does not dispute the specific instances outlined in the analysis, but due to the transition to new collections software, the Service Obligation and Loan Repayment (SOLR) module within MDCaps software, we are still working on production issues within the system.

MHEC continues to carry out the corrective actions noted in the audit dated October 29, 2013 and requests OLA recognize the significant progress MHEC has made in this area.

MHEC will, however, continue to take the following corrective actions to resolve this finding:

- A. MHEC will review its current policy to develop a realistic timeline, given agency staffing levels, for service obligation notifications and reports to generate for both initial and follow-up notices;
- B. MHEC will continue to work with its system vendor for MDCAPS and SOLR to ensure the systems are working accurately and system enhancements have been completed in order to identify all recipients with service obligations. This is a necessary enhancement to ensure that timely notifications are sent;
- C. MHEC has reported this issue to its system vendor, who is currently working to enhance MDCAPS with the capability to record when employer verifications are generated to service obligation recipients;
- D. MHEC will review all reports currently used to identify service obligation recipients to determine what enhancements are necessary, in order to accurately capture all recipients, their status, and to identify when service and employer notifications have been sent and received.

MHEC will also continue with its internal review of SOLR accounts to ensure that all statuses are correct and required information has been received.

**Finding 2**

**Delinquent service obligation accounts were not properly pursued for collection and referred to the Department of Budget and Management's Central Collection Unit.**

**Recommendation 2**

**We recommend that MHEC**

- a. ensure that written payment demands are sent at 30-day intervals (repeat),**
- b. ensure that delinquent accounts are referred to CCU for collection assistance as required (repeat), and**
- c. generate periodic aging reports to assist in these efforts.**

**MHEC Response:**

MHEC concurs with this finding and does not dispute the findings outlined in the analysis, however the specific examples cited were individuals who had either not responded to initial requests, or had incorrect addresses on file. MHEC uses all resources at its disposal to track down students prior to sending them to collections. This takes additional time to access the MVA's databases for updated address information. If no updates are found MHEC sends the individuals to collections. As of Dec 19 2016, the individuals noted in the analysis were either sent to collections or in the process (que) to be sent to collections.

Please note that MHEC continues to carry out the agreed upon corrective actions noted in the prior audit and has made significant progress in this area. In FY 2014, MHEC forwarded 297 clients (students) to collections. In FY 2015 and FY 2016, MHEC submitted 279 and 678 clients to collections, respectively. The amounts submitted to central collections from FY 2014 through November 2016 were over \$8.125 million. For FY 2015 and FY 2016, respectively, MHEC collected over \$2.6 million and placed over 2,200 individuals into repayment. These are milestones that should be acknowledged.

2(b) Submitting delinquent accounts to CCU is a time consuming process. MHEC's goal is to ensure all students have the opportunity to submit the necessary paperwork prior to their CCU submission. There have been many instances where the agency was aggressive in sending students to collections only to pull them out due to late service obligation paperwork or late employer verification. While MHEC has the authority to send individuals to CCU if they are one (1) day late on their paperwork, MHEC tries to resolve the issue prior to CCU placement. This avoids future litigation in small claims court, which would remove already overextended staff from the agency and negatively impact our financial resources.

2(c) MHEC will work with our vendor to generate aging reports as requested, assuming the resources are available to pay for these enhancements.

**Finding 3**

**Sufficient controls were not established over critical financial aid data recorded on MDCAPS, as well as over the issuance and monitoring of user access to MDCAPS.**

**Recommendation 3**

**We recommend that MHEC**

- a. ensure that employees who do not have the access capabilities to modify data in MDCAPS use available audit trails and activity reports to verify that critical changes recorded are accurate and properly authorized;**
- b. require independent authorization for the establishment or modification of all user access accounts, and retain authorization forms on file;**
- c. ensure that periodic reviews of employee access are performed by an employee independent of the process of establishing or modifying user accounts, and that documentation of access reviews performed by external entities is received and reviewed; and**
- d. remove unnecessary or improper user accounts or access capabilities.**

**MHEC Response:**

MHEC concurs with the recommendation and will take the following corrective actions to resolve this finding:

- A. MHEC will continue to work with the vendor to modify the existing critical change report to only capture critical changes recorded in MDCAPS and then have them reviewed for accuracy by an independent reviewer.
- B. MHEC is currently in the process of amending its existing MDCAPS user permission forms to require the independent authorization at the institution level prior to modifying or creating accounts. Additionally, MHEC is working with our vendor to prevent institutions from creating or modifying MDCAPS user accounts.
- C. MHEC has already transitioned the review of employee user access for MDCAPS to be performed by an employee independent of the process and will continue to monitor user accounts on a quarterly base. Additionally, MHEC has amended its user permission form to require independent authorization before creating or modifying user accounts.
- D. MHEC will follow the Department of Information and Technology's (DoIT) policy of requiring MDCAPS passwords for financial aid offices to be changed every 90 days. Failure to do so will result in the account becoming deactivated. MHEC will work with its vendor to perform the necessary changes.

**Finding 4**

**Critical adjustments to recipient accounts were processed on SOLR without independent verification.**

**Recommendation 4**

**We recommend that MHEC establish procedures, including the use of output reports, to independently verify the propriety of critical adjustments to recipient service obligation accounts on SOLR based on a review of supporting documentation.**

**MHEC Response:**

MHEC concurs with the recommendation and is currently developing procedures to independently verify critical adjustments to recipient service obligation accounts in SOLR based on the documentation received. The procedures will require independent reviewers to verify a sufficient sampling size of records to ensure the accuracy in SOLR.

**Finding 5**

**MHEC did not ensure the State's retirement and pension contributions for community college employees, which totaled approximately \$54.5 million for fiscal year 2015, were proper.**

**Recommendation 5**

**We recommend that MHEC ensure that the amounts paid for the State's share of community college employees' retirement and pension costs are proper. Specifically, we recommend that MHEC**

- a. thoroughly review audited retirement and pension contribution data received from community colleges and resolve, on a timely basis, differences between the audited data and corresponding amounts in its own records, including the aforementioned differences;**
- b. take appropriate actions to pay or collect differences in amounts owed; and**
- c. document the actions taken.**

**MHEC Response:**

MHEC Concur.

The October 29, 2013 audit required MHEC to develop and require from the community colleges an exhibit within the community college's annual independently audited (CC-4) financial report. This report provides specific financials of the retirement program. At the time the auditors were reviewing the new CC-4 exhibit; MHEC was in the process of summarizing the exhibits and initiated the reconciliation process. We have since received FY 2016 exhibits and are reaching out to the institutions to verify the auditors audited exhibit if MHEC determines a reconciliation issue.

**Finding 6**

**MHEC did not have adequate procedures to ensure the propriety of State funding to reimburse community colleges for certain nonresident fees and for grants for the English for Speakers of Other Languages program. Such payments totaled \$11.5 million in fiscal year 2015.**

**Recommendation 6**

**We recommend that MHEC**

- a. ensure that the supervisory review of the calculation of nonresident fee and ESOL program payments includes a review of the supporting enrollment documentation received from the colleges;**
- b. document its review of audited enrollment data for the purpose of ensuring the propriety of nonresident fee payments; and**
- c. establish procedures to verify, at least on a test basis, that ESOL enrollment data received from the colleges were accurate.**

**MHEC Response**

MHEC concurs

In order to receive reimbursement under the ESOL Program, community colleges are required to submit ESOL Reports. The ESOL FTE student enrollment reported are actual enrollments for eligible ESOL courses for the fiscal year 2 years prior (i.e., FY 2015 FTE is the base of the FY 2017 ESOL payment). Payment is made annually at the beginning of the fiscal year.

The processing of State ESOL payments occurs as follows:

- All ESOL reports for the eligible year for all colleges must be submitted to and collected by MHEC before payments are processed.
- The reports must be signed by the preparer and certified by signature of the president of the college.
- The totals as reported are reviewed and confirmed by totaling the FTE Generated column.
- If the total arrived at during the recalculation/confirmation differs from the total reported on the ESOL report, the college is notified immediately.
- Once the totals have been reconciled and determined to be accurate, the MHEC Staff reviewer indicates that the totals are correct by signing the report.
- The totals are entered in the MHEC ESOL master spreadsheet.
- The report is then submitted to the Assistant Secretary for Finance and Administration for review and reconciliation.
- Once the FTES enrollment has been verified and ESOL FTES Eligible Certification letters and distribution spreadsheet for all community colleges, including Baltimore City Community College, have been generated, copies are sent to the DBM budget analyst.
- Invoices are produced in the first week of the next fiscal year.

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- The invoices are reviewed and signed by the Assistant Secretary of Finance and Administration and forwarded to MHEC Budget and Administration. Copies of the signed invoices are filed in Finance Policy.
- The MHEC Budget & Administration Office processes the invoices for payment by the Comptroller's Office.
- MHEC Notifies the colleges of ESOL payments by letter to the Presidents' offices.

The reporting of ESOL enrollments from two years prior following year-end closeout and review by the independent auditor and the certification by the report preparer and college President provide certification of the enrollments to MHEC. Additionally, every year, the independent auditors report certified ESOL revenues received by the colleges in Exhibit VII of the annual MHEC CC-4 Financial Report. It is unnecessary to add another level of review and verification to the enrollments being reported for ESOL reimbursement.

Nonetheless, MHEC agrees to the following:

- A. MHEC will document the review of audited enrollment data for the purpose of ensuring the propriety of nonresident fee payments in the Statewide programs,
- B. MHEC will request the community colleges to create and add an additional "Funding of ESOL Programs" Exhibit to the annual MHEC CC-4 Report in which Total Students Enrolled, Total Credit Hours and Total State Aid Received for ESOL Programs will be reported, reconciled and certified by the independent auditors each year at additional expense to the community colleges, and
- C. The supervisor will review the supporting ESOL enrollment documentation received from the colleges when reviewing and approving payments of ESOL funds.

**Finding 7**

**The MHEC network was not sufficiently secured in that effective intrusion detection prevention system coverage did not exist.**

**Recommendation 7**

**We recommend that adequate IDPS coverage be applied to the MHEC network (repeat). Specifically, we recommend that**

- a. a documented review and assessment of network security risks from network traffic (including encrypted traffic) to/from untrusted entities be performed to identify how IDPS coverage should be best applied; and**
- b. based on the review and assessment of security risks, IDPS coverage be implemented to address the aforementioned concerns.**

**MHEC Response:**

MHEC concurs with this recommendation and notes that MHEC was in full compliance with a properly configured and enabled network based IDPS, supplemented by HIPS until the launch of the November 2015 DoIT Enterprise Model. At the time of the audit and in preparation for the

enterprise solution, DoIT instructed MHEC to remove HIPS from all servers, which they later replaced with an alternate malware protection product. HIPS deployment has occurred for our financial aid management system, and further deployment will be underway for other web servers identified in the audit analysis.

Regarding a documented review and assessment of network security risks, when budgetary allowances are made, MHEC will work with DoIT to perform an assessment and any adjustments to IDPS coverage would occur accordingly.

**DoIT Response:**

IDPS features protecting MHEC network assets include sandboxing, antivirus, anti-spyware, vulnerability protection, and denial of service protection. These features are enabled at this time.

DoIT will deploy decryption services for the Secure Sockets Layer and Secure Shell protocols as part of baseline firewall ruleset revision 1. In practical terms, agencies migrate into the 'fort' architecture with revision 0 rule sets applied, and will apply revision 1 features approximately six months thereafter.

As far as HIPS supplementation, DoIT has deployed HIPS protection to select MHEC servers, and is testing more robust endpoint security solutions to include HIPS for deployment across MHEC's user base later in 2017.

**Finding 8**  
**Sensitive personally identifiable information (PII) in the MDCAPS database was not properly protected.**

**Recommendation 8**

**We recommend that MHEC, with assistance of its MDCAPS vendor**

- a. identify all social security numbers contained in the MDCAPS database; and**
- b. delete those that are not needed, and ensure all remaining social security numbers are properly protected by encryption.**

**MHEC Response:**

MHEC concurs with this recommendation and will work with our vendor to examine and take the initial steps to implement database encryption. While it is agreed that encryption is of critical importance, MHEC is working to assess the best approach given the comprehensive database, existing enhancements and funding challenges.

Based on a general assessment by our MDCAPS vendor, it has been determined that Transparent Database Encryption (TDE) could be used to meet database encryption requirements and is the most cost-effective approach. As a feature implemented at the database level, it could satisfy each recommendation by encrypting all instances of social security numbers. Enabling TDE would avoid extensive and expensive coding changes; result in minimal impact on end user performance and all data would be encrypted.

**DoIT Response:**

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Response to Audit Findings

DoIT is in agreement with TDE as an option and has recommended that it is configured in a way that can be undone quickly should there be an issue.

AUDIT TEAM

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