



# **MOSQUITO CONTROL COMMISSION PERFORMANCE AUDIT**



**FISCAL YEARS 2004 & 2005**

**CITY OF CHESAPEAKE, VIRGINIA  
AUDIT SERVICES DEPARTMENT**

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March 17, 2005

The Honorable Dalton S. Edge and  
Members of the City Council  
City of Chesapeake  
City Hall—6<sup>th</sup> Floor  
Chesapeake, Virginia 23328

Dr. Nancy M. Welch and  
Members of the Board of Commissioners  
Chesapeake Mosquito Control Commission  
900 Hollowell Lane  
Chesapeake, Virginia 23320

Dear Mayor Edge, Members of the City Council, Dr. Welch, and  
Members of the Board of Commissioners:

We have completed our review of the Chesapeake Mosquito Control Commission (Mosquito Control) for the period July 1, 2003 to February 28, 2005. Our review was conducted for the purpose of determining whether Mosquito Control was providing services in an economical, efficient, and effective manner, whether its goals and objectives were being achieved, and whether it was complying with its policies and procedures in revenues, payrolls, expenditures, fixed assets, staffing, and other areas. We specifically addressed financial issues related to Fiscal Year (FY) 2005 and beyond and operational concerns for FY 2004 and FY 2005. The review was conducted in accordance with Government Auditing Standards and included such tests of records and other audit procedures as we deemed necessary in the circumstances.

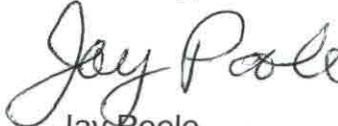
The Mosquito Control Commission was created in FY 2003 through the merger of five independent mosquito commissions that previously served various portions, but not all, of the City. The newly reorganized Mosquito Control had 3 operational districts - Deep Creek, Greenbrier, and Southern Chesapeake - that provided services to the entire City. Mosquito Control was funded through real estate and personal property tax rates specifically enacted to support mosquito control programs in the City. The goal of Mosquito Control was to reduce and control the mosquito population using the safest and most effective means available in order to protect the public's health and welfare.

Based on our review, we determined that Mosquito Control had been extremely effective in executing the reorganization plan. Services had been extended to the southern end of the City, the consolidated entity continued to respond to service requests and provide services in an effective manner, and Mosquito Control had developed and instituted a number of organizational and operational changes to enhance its effectiveness in servicing the entire City. Also, we found that Mosquito Control generally complied with its own policies and procedures. Consequently, our recommendations were made for the purpose of assisting Mosquito Control as it continued to implement the reorganization.

Because Mosquito Control was likely to receive revenues in future years that exceeded its foreseeable expenditure requirements, we recommended that it transfer excess funds to the City on an annual basis. Also, as positions become vacant, Mosquito Control should attempt to identify situations where part-time staff can be substituted for full-time staff. Finally, we identified a number of administrative and operational conditions that should be addressed to ensure the continued success of the reorganization.

This report, in draft, was provided to Mosquito Control officials for review and response. Their comments have been considered in the preparation of this report. These comments have been included in the Managerial Summary, the Audit Report, and in Appendix A. The Mosquito Control staff was very helpful throughout the course of this audit, and we appreciate their courtesy and cooperation on this assignment.

Sincerely,



Jay Poole  
City Auditor  
City of Chesapeake, Virginia

C: Dr. Clarence V. Cuffee, Chesapeake City Manager  
Gene R. Payne, Director, Chesapeake Mosquito Control Commission

## **Managerial Summary**

### **A. Objectives, Scope, and Methodology**

We have completed our review of the Chesapeake Mosquito Control Commission (Mosquito Control) for the period July 1, 2003 to February 28, 2005. Our review was conducted for the purpose of determining whether Mosquito Control was providing services in an economical, efficient, and effective manner, whether its goals and objectives were being achieved, and whether it was complying with its policies and procedures in revenues, payrolls, expenditures, fixed assets, staffing, and other areas. We specifically addressed financial issues related to Fiscal Year (FY) 2005 and beyond and operational concerns for FY 2004 and FY 2005. The review was conducted in accordance with Government Auditing Standards and included such tests of records and other audit procedures as we deemed necessary in the circumstances.

The Mosquito Control Commission was created in FY 2003 through the merger of five independent mosquito commissions that previously served various portions, but not all, of the City. Effective July 1, 2004, the Chesapeake City Council appointed 6 Commissioners and designated the City's Health Director to be the Chairperson of the Board of Commissioners that provided oversight to Mosquito Control operations. Mosquito Control employed a work force of over 60 full-time employees and a few part-time employees that included a Director appointed by the Commissioners, an Operations Director, district and field supervisors, administrative staff, biologists, mechanics, and technicians. The newly reorganized Mosquito Control had 3 operational districts - Deep Creek, Greenbrier, and Southern Chesapeake - that provided services to the entire City. Mosquito Control was required to manage resources to ensure that regular operations, emergency responses, and capital equipment and improvements could be funded from its annual operating revenues and available reserves. Mosquito Control was funded through real estate and personal property tax rates specifically enacted to support mosquito control programs in the City.

The goal of Mosquito Control was to reduce and control the mosquito population using the safest and most effective means available in order to protect the public's health and welfare. Specifically, mosquitoes can transmit diseases to humans and animals and they are an annoyance. During FY 2004, Mosquito Control responded to over 2,350 citizens' requests, cleaned 105 miles of ditches, removed 105 tons of debris, trapped over 289,000 mosquitoes, larvicided (application of chemicals to kill mosquito larvae and pupae in water) 18,106 acres, and adulticided (spraying pesticide to kill adult mosquitoes) 509,235 acres in the City.

To conduct this audit, we reviewed State, City, and Mosquito Control administrative policies and procedures; analyzed the Recommendations for the

Reorganization of Mosquito Control Services for the City of Chesapeake approved by the City Council in 2003; and evaluated annual budgets and other financial documents, revenue streams and operating expenses, payroll records, and other management and operations documents and reports. Also, we interviewed Mosquito Control's Director, Operations Director, district and field supervisors, and administrative staff. In addition, we conducted a survey of several cities and counties to develop basic comparative information on budgets, staffing, and operations for mosquito control programs.

## **Major Observations and Conclusions**

Based on our review, we determined that Mosquito Control had been extremely effective in executing the reorganization plan. Services had been extended to the southern end of the City, the consolidated entity continued to respond to service requests and provide services in an effective manner, and Mosquito Control had developed and instituted a number of organizational and operational changes to enhance its effectiveness in servicing the entire City. Also, we found that Mosquito Control generally complied with its own policies and procedures. Consequently, our recommendations were made for the purpose of assisting Mosquito Control as it continued to implement the reorganization.

Because Mosquito Control was likely to receive revenues in future years that exceeded its foreseeable expenditure requirements, we recommended that it transfer excess funds to the City on an annual basis. Also, as positions become vacant, Mosquito Control should attempt to identify situations where part-time staff can be substituted for full-time staff. Finally, we identified a number of administrative and operational conditions that should be addressed to ensure the continued success of the reorganization.

This report, in draft, was provided to Mosquito Control officials for review and response. Their comments have been considered in the preparation of this report. These comments have been included in the Managerial Summary, the Audit Report, and in Appendix A. Mosquito Control management and staff were very helpful throughout the course of this audit, and we appreciate their courtesy and cooperation on this assignment.

## **B. Mosquito Control Practices and Procedures**

While we were not able to analyze all Mosquito Control operations and practices in detail, we noted that Mosquito Control generally had sound practices and procedures in place to accomplish its overall mission. We also noted that it had developed and instituted a number of practices to enhance its operations and provide decision-making information. Overall, Mosquito Control had been extremely effective in consolidating five independent Mosquito Control Commissions into one and extending its coverage into the southern area of the City. As part of the reorganization and in an effort to become more efficient in its operations, Mosquito Control had purchased property and begun to design the facilities to house its service operations in Southern Chesapeake, and had

consolidated its small equipment (chain saws and weed eater) purchases and repairs. Also, Mosquito Control had established an on-line reverse auction system to purchase chemicals, budgeted annually at \$500,000, at the lowest cost.

Mosquito Control had begun to use aerial spraying to control mosquitoes in both larvae and adult stages. This practice proved to be very effective over large areas and areas that were hard to reach by trucks or hand-held spraying equipment. In addition, Mosquito Control had received approval to use Special Conservator of the Peace status to enforce requirements to reduce mosquito infestation and the transmission of diseases to humans and animals on private property.

Finally, Mosquito Control had requested potential vendors to provide an automated pesticide/chemical delivery control-data logging and reporting system that would be mounted on Mosquito Control vehicles. The system would provide management with a tool to better manage chemical resources and personnel by 1) reducing instances where some neighborhood streets were treated multiple times while other streets were missed entirely, 2) verifying the timing, placement, and quantity of chemical applications needed, 3) managing risk, and 4) bringing together functions such as surveillance, larviciding, adulticiding, service request tracking, and mosquito borne disease tracking into one database for analytical review and trend analysis purposes.

### **C. Excess Revenues and Staffing Changes**

Mosquito Control received its revenues from general property taxes on real estate (\$0.02/\$100) and personal property (\$0.08/\$100) and from interest income on its unspent cash balances. We found that Mosquito Control's current and projected revenues exceeded corresponding expenditures, which may cause Mosquito Control to accumulate excessive reserve balances in future years. Finally, Mosquito Control used full-time staff in situations where the use of part-time staff may have been more optimal.

#### **1. Excess Revenues Projected in Future Years**

**Finding** – Mosquito Control was likely to receive revenues in future years that exceeded its foreseeable expenditure requirements.

**Recommendation** – Mosquito Control should consider transferring funds not needed for mosquito control expenditures to the City.

**Response** – We have reviewed the finding and we concur. We plan to work with the City's budget office annually to determine amounts of future transfers.

#### **2. Staffing Levels and Deployment**

**Finding** – Mosquito Control utilized full-time staff in situations where the use of part-time staff may have been more optimal.

**Recommendations** - As vacancies occur, Mosquito Control should explore opportunities for converting full-time positions to part-time positions.

**Response** – The Commission is already in the process of recruiting more part-time staff; ads and notices have been posted. Most of these staff would be utilized as ULV Operators for the night time truck spraying during the mosquito season (this is where Virginia Beach utilizes their part-time staff).

#### **D. Other Administrative and Operational Issues**

As previously noted, we determined that Mosquito Control had been extremely effective in executing the reorganization plan. While Mosquito Control appeared to be effectively accomplishing its overall mission, we did identify some areas where administrative and operational practices could be enhanced. Mosquito Control did not have an operations manual to guide day-to-day activities. Some required workload indicators were not being tracked and recorded. Answers to service requests were not fully documented. There were procedural inconsistencies in the recording and documentation of work hours. Supervisors had not received substance abuse detection training. Finally, there was a salary line item error in the FY 2005 budget. We have developed a number of recommendations to assist Mosquito Control in addressing these issues as it continues to implement the reorganization.

##### **1. Operations Manual**

**Findings** – Mosquito Control had not yet developed a formal operations manual.

**Recommendation** – Mosquito Control should develop an operations manual as soon as feasibly possible.

**Response** – The Mosquito Control staff are and have been working to develop an Operations Manual and have recently attended a training seminar on February 24, 2005 with Public Works emphasizing how to properly develop an Operations Manual. The development will proceed and will hopefully be completed in the near future.

##### **2. Tracking Workload Indicators**

**Finding** - Due to changes in data collection procedures, Mosquito Control did not track and record data separately for one workload indicator and had not recorded all pertinent data for three other indicators.

**Recommendation** – Mosquito Control should take steps to ensure that the Commissioners are aware of changes that impact workload indicators.

**Response** - Mosquito Control is already taking the steps indicated, Information Technology's staff are working with us to make changes in our data base to help track these needed indicators. Also, in a RFP that is currently out for proposals, we hope to

help address this issue in a great way. These indicators are reported to the Board of Commissioners monthly via our monthly work report and the additional indicators will be included as soon as the changes in the data base are completed.

### **3. Responding to Service Requests**

**Finding** - Mosquito Control had not developed a formal policy requiring a response to all service requests within 48 hours. In addition, the database system was not configured to collect information verifying response times.

**Recommendation** – Mosquito Control should develop a formal policy statement implementing the 48 hour response requirement, and should ensure that its database system is configured to record and report response times.

**Response** – Though the Commission has always taken pride in being able to respond to service requests within the first 48 working hours, a written policy will be proposed to the Board in the near future to establish what an unwritten policy is already. Information Technology staff are also working with us to develop a reporting mechanism to track these responses through our service request database.

### **4. Documentation of Work Hours**

**Finding** – Mosquito Control did not always document time worked as required and did not use uniform documentation and recordation procedures when recording employees' regular and overtime work hours.

**Recommendation** – Mosquito Control should take steps to ensure that 1) time worked is documented as required and 2) payroll documentation and recordation procedures are consistent throughout Mosquito Control.

**Response** – The reporting procedures for the previous five (5) commissions were dramatically different and though most of these reporting procedures have been standardized, we are still making changes in the process to assure that all time is accounted for in a standard way. The aforementioned RFP will also help with this endeavor as some of the options requested is for a database designed to track our control efforts.

### **5. Compliance with Substance Abuse Policies**

**Finding** – We found that Mosquito Control supervisors had not been formally trained to detect drug and alcohol abuse by employees. Also, the custodian of the Random (drug test) Selection Spreadsheet participated as a witness to the random number selection process which was not permitted under substance abuse policy and procedures.

**Recommendation** – Mosquito Control should take steps to ensure that 1) supervisors receive the appropriate drug and alcohol abuse detection training and 2) the custodian

of the Random Selection Spreadsheet does not participate as a witness to future random number selection processes for drug testing.

**Response** – 1) There are steps already underway to have the supervisory staff trained for abuse detection. We have recently again contacted the Human Resources staff and they state that they are developing such training and will include us when it is completed. Additionally we have contacted the Police Department who have stated that they will provide us with training in the interim and 2) this was allowed to happen in error. The custodian was allowed to observe the process and inadvertently signed the witness sheet. This will not happen again!

## **6. Budget Error**

**Finding** – Mosquito Control's FY 2005 operating budget contained an error related to supervisory salary estimates.

**Recommendation** – Mosquito Control should take steps to ensure that budgeting errors do not recur.

**Response** – Steps have already been taken to ensure that such an error does not occur again. FY 2005 was our first fully consolidated budget. We just made an error in calculations; but, this has already been corrected and is so indicated by our FY 2006 budget.

MOSQUITO CONTROL COMMISSION

PERFORMANCE AUDIT

FISCAL YEARS 2004 & 2005

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## **A. Objectives, Scope, and Methodology**

We have completed our review of the Chesapeake Mosquito Control Commission (Mosquito Control) for the period July 1, 2003 to February 28, 2005. Our review was conducted for the purpose of determining whether Mosquito Control was providing services in an economical, efficient, and effective manner, whether its goals and objectives were being achieved, and whether it was complying with its policies and procedures in revenues, payrolls, expenditures, fixed assets, staffing, and other areas. We specifically addressed financial issues related to Fiscal Year (FY) 2005 and beyond and operational concerns for FY 2004 and FY 2005. The review was conducted in accordance with Government Auditing Standards and included such tests of records and other audit procedures as we deemed necessary in the circumstances.

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## **Methodology**

To develop our projections of revenues and expenditures for Mosquito Control, we reviewed annual budgets and other financial documents, revenue streams, and operating expenses. To project revenues, we obtained data from the Real Estate Assessor's Office and the Commissioner of the Revenue's Office, utilizing preliminary assessment information and historical assessment increase information to estimate FY 2006 revenues and project revenues for FY 2007 to FY 2010. To project expenditures, we evaluated Mosquito Control's budgets for FY 2005 and FY 2006, using the proposed FY 2006 budget as the base year to project future budgets. Additional details of our analysis are provided in Appendix B.

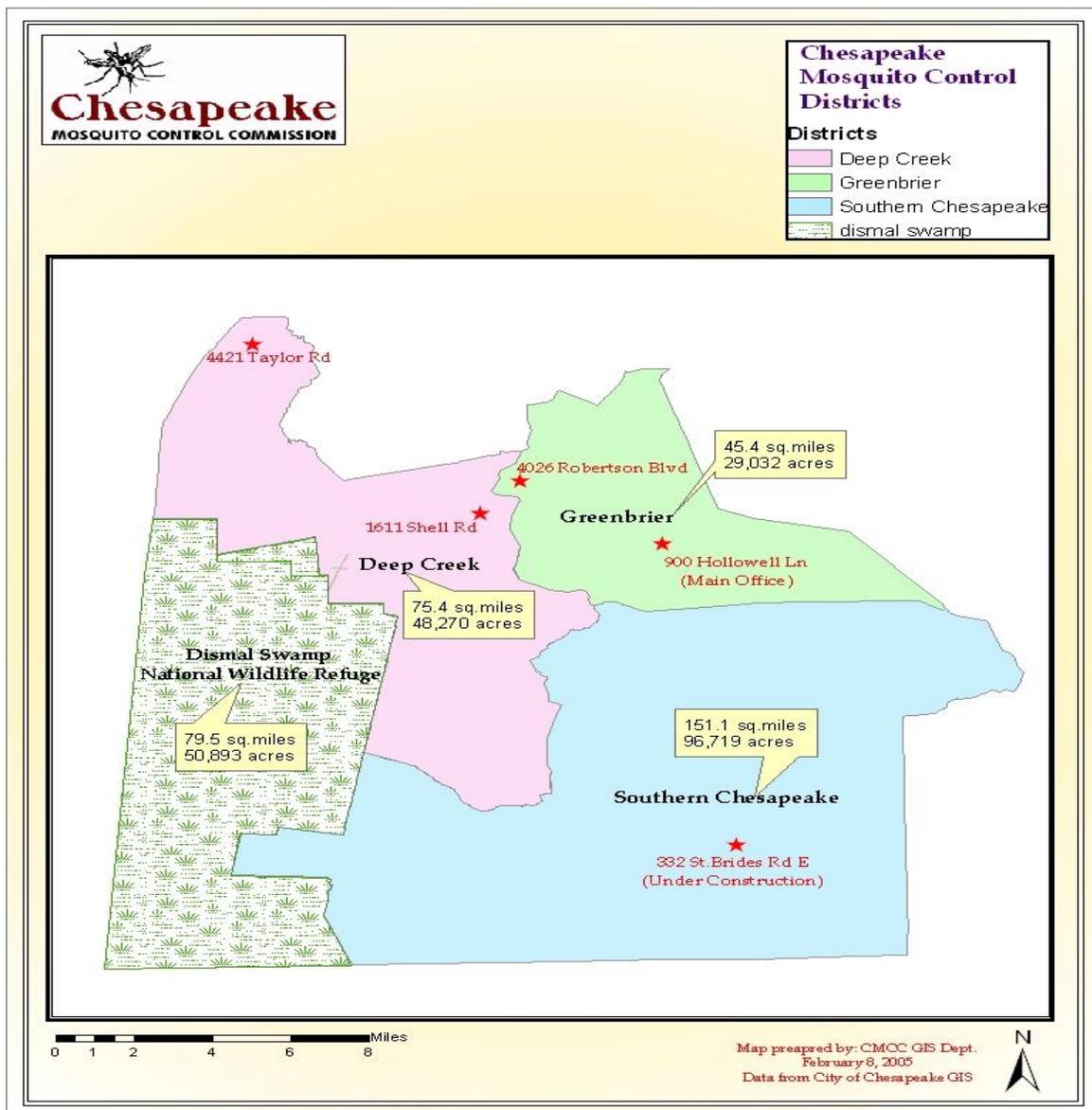
To comparatively analyze Mosquito Control's use of field staff, salary structure and operational practices, we obtained pertinent program information from several Hampton Roads localities and reviewed annual operating budgets and business practices. From this information we developed unit cost per service acre, analyzed job descriptions and salary ranges for similar positions, and reviewed job titles, number of full-time and part-time employees, and pay scales. We also evaluated operating practices for early morning and evening spraying and the use of seasonal employees, overtime, split work schedules, and contract spraying, and reviewed the source of program funding. Further details of this analysis are provided in Appendix C.

Finally, to determine how well Mosquito Control transitioned to its present organization and how effective and efficient it was operating, we reviewed the recommended actions approved by the City Council in the Recommendations for the Reorganization of Mosquito Control Services for the City of Chesapeake. In addition, we reviewed Mosquito Control administrative and operational policies and procedures, and

management and operations documents and reports pertaining to staffing, payroll, safety, fixed assets, and procurement, and tested certain payroll transactions from a randomly selected one week period. Finally, we interviewed Mosquito Control management, administrative, and field staff to obtain an understanding of overall operations.

## B. Mosquito Control Practices and Procedures

While we were not able to analyze all Mosquito Control operations and practices in detail, we noted that Mosquito Control generally had sound practices and procedures in place to accomplish its overall mission. We also noted that it had developed and instituted a number of practices to enhance its operations and provide decision-making information. Overall, Mosquito Control had been extremely effective in consolidating five independent Mosquito Control Commissions into one and extending its coverage into the southern area of the City. The following narrative highlights various accomplishments and practices that we believe enhanced or will enhance Mosquito Control's effectiveness in servicing the entire City.



Map of Mosquito Control's Three Districts in Square Miles and Acres

## 1. Transition to New Organization

### a. Unit Cost Improvement

Mosquito Control's expansion into the southern end of the City had the effect of reducing its overall per acre service cost. While cost comparisons of mosquito control entities tend to be questionable because of wide variations in the type and level of services provided, we noted that Chesapeake's overall cost per acre had declined significantly since the consolidation, and were in a similar range to those of other area localities. The following table shows the improvement in Mosquito Control's cost per service area acre as well as a comparison to other localities.

Exhibit #1  
Overall Per Acre Service Costs

	Chesapeake FY 2002	Chesapeake FY 2003	Chesapeake FY 2004	Portsmouth FY 2004	Va. Beach* FY 2004
Expenditures	\$2,898,167	\$3,871,801	\$3,577,716	\$545,392	\$1,909,206
Service Area (Acres)	113,761	175,045	175,045	18,560	164,400
Cost per Acre	\$25.48	\$22.12	\$20.44	\$29.39	\$11.61

\* Unserved areas, such as the Back Bay Wildlife Refuge, were subtracted from the Virginia Beach acreage totals

### b. New Facility

As part of the reorganization, and in an effort to become more efficient in its operations, Mosquito Control purchased property at 332 St. Brides Road and began to design the facilities to house its service operations in Southern Chesapeake. The facilities will include one metal building with two offices and a work area, a shop area, a separate chemical building, and a shelter area for vehicles and equipment. The property will be enclosed with a chain link fence. Mosquito Control expects to have the facilities completed in April/May 2005, in time for the beginning of the mosquito season. The estimated cost of the property and building was \$600,000. The facility will house 20 staff including a district supervisor, 2 field supervisors, and 17 applicators.

### c. Small Equipment Purchases and Repairs

The consolidation of small equipment (chain saws and weed eaters) purchases and repairs benefited Mosquito Control by allowing them to utilize a single vendor for these purchases that provided better service and prices. Also, as shown below, the consolidation of small equipment repairs at the Deep Creek location resulted in faster repair turnaround. Prior to the consolidation, each district out-sourced most of the repair work or had to use an employee to work on the small equipment repair.



Small Equipment Repair Shop at Deep Creek Location

## **2. Aerial Spraying**

The Director and the Operations Director indicated that the use of aerial spraying to reduce mosquito populations in both larvae and adult stages was an important tool for Mosquito Control. Aerial spraying was very effective over large areas and reached areas that were difficult or nearly impossible to reach with trucks or hand-held spraying equipment. The City's topography and environment was ideal for use of fixed-wing planes and helicopters.

During late March/early April 2004, Mosquito Control used a helicopter and a fixed-wing plane for the first time. Aerial larviciding covering 14,759 acres was completed in the Northwest River Basin, the Intercoastal watershed, and along the Dismal Swamp. The kill rate was 90 – 95% as determined by biologists doing pre-aerial and post-aerial larvae counts. The 5 – 10% not killed was caused by tree root ball holes and the direction of the aerial spray as compared to fallen trees. The Director saw the potential for reducing manpower with more use of aerial spraying.

## **3. Enforcement - Special Conservators of the Peace**

As of February 2005, Mosquito Control's Operations Director and two district supervisors were approved by the Virginia Department of Criminal Justice Services and were awaiting appointment by the Circuit Court as Special Conservators of the Peace. These appointments will authorize Mosquito Control to write up or issue citations to residents that refuse to remove or eliminate structures that collect standing water and

allow mosquito infestation. Enforcement should result in reducing mosquito infestation and the transmission of diseases to humans and animals. They anticipate that enforcement would start by the beginning of the 2005 mosquito season.

#### **4. Chemical Purchases**

In 2004, the City's Purchasing Division established an on-line reverse auction contract that allowed Mosquito Control to purchase its chemicals at the lowest cost. For FY 2005 and FY 2006, Mosquito Control has budgeted \$500,000 for the purchase of chemicals. The purchasing process began when Mosquito Control identified the specific chemicals and quantities needed for the upcoming mosquito season. This information was forwarded to chemical suppliers participating in the on-line auction. The vendor with the lowest price for a particular chemical was then compared to the chemical price on the state contract. Mosquito Control would purchase the chemical from either the vendor or the state, whichever had the lowest price. The Director indicated that this process had provided and should continue to provide substantial savings.



Mosquito Control Chemical Storage Facility at Hollowell Location

## **5. New Technology for Spray Vehicles**

In February 2005, Mosquito Control expected to send out a Request for Proposal for the procurement of an automated pesticide/chemical delivery control-data logging and reporting system to enhance and expand the effectiveness of the services that it provides. The system would utilize Geographic Information System (mapping) and Global Positioning System (positioning) technology and be mounted on Mosquito Control's Ultra Low Volume spray trucks, All-Terrain Vehicles (as shown below), and other support vehicles. The system would provide management with a tool to better manage chemical resources and personnel by 1) reducing instances where some neighborhood streets were treated multiple times while other streets were missed entirely, 2) verifying the timing, placement, and quantity of chemical applications are needed, 3) managing risk, and 4) bringing together functions such as surveillance, larviciding, adulticiding, service request tracking, and mosquito borne disease tracking, into one database for analytical review and trend analysis purposes.



Mosquito Control's All Terrain Vehicle

### **C. Excess Revenues and Staffing Changes**

Mosquito Control received its revenues from general property taxes on real estate (\$0.02/\$100) and personal property (\$0.08/\$100) and from interest income on its unspent cash balances. We found that the Mosquito Control's current and projected revenues exceeded corresponding expenditures, which may cause Mosquito Control to accumulate excessive reserve balances in future years. Finally, Mosquito Control used full-time staff in situations where the use of part-time staff may have been more optimal.

#### **1. Excess Revenues Projected in Future Years**

**Finding – Mosquito Control was likely to receive revenues in future years that exceeded its foreseeable expenditure requirements.**

According to Section 32-1-196 of the Code of Virginia “Whenever funds accumulated by a mosquito control district are determined by the commission to no longer be needed for the control of mosquitoes, such commission may transfer such funds as follows: (1) funds contributed by the Board to the state treasury, (2) funds contributed by a county, city or town to the treasury of such county, city or town, and (3) funds contributed by a levy of a special tax upon property, to the treasury of the county, city, or town wherein such property lies.” The code provision had been incorporated into the Financial Services Agreement between Chesapeake and Mosquito Control.

To analyze Mosquito Control's cash flows, we obtained and analyzed their existing FY 2005 budget and proposed FY 2006 budget. We also analyzed revenue increase history information provided by the Real Estate Assessor and the Commissioner of the Revenue. Based upon these items, we then prepared projections for FY 2006 to FY 2010. We found that the revenues Mosquito Control was receiving in FY 2005 and was scheduled to receive in future years appeared to exceed their expenditure requirements. The results are shown in Exhibit # 2, with additional details provided in Appendix B.

#### **Exhibit # 2 Calculation of Projected Excess Revenues**

	<b>FY 2005 Budgeted</b>	<b>FY 2006 Proposed</b>	<b>FY 2007 Estimated</b>	<b>FY2008 Estimated</b>	<b>FY 2009 Estimated</b>	<b>FY 2010 Estimated</b>
<b>Total Revenues</b>	<b>\$ 4,085,500</b>	<b>4,486,640</b>	<b>4,697,201</b>	<b>4,918,539</b>	<b>5,151,249</b>	<b>5,395,959</b>
<b>Total Expenditures</b>	<b>\$ 3,840,103</b>	<b>4,082,834</b>	<b>4,226,703</b>	<b>4,353,504</b>	<b>4,484,109</b>	<b>4,618,632</b>
<b>5% Capital Reserve</b>	<b>\$ 204,275</b>	<b>224,332</b>	<b>234,860</b>	<b>245,927</b>	<b>257,562</b>	<b>269,798</b>
<b>Total Funds Required</b>	<b>\$ 4,044,378</b>	<b>4,307,166</b>	<b>4,461,563</b>	<b>4,599,431</b>	<b>4,741,671</b>	<b>4,888,430</b>
<b>Excess Revenue</b>	<b>\$ 41,122</b>	<b>179,474</b>	<b>235,638</b>	<b>319,109</b>	<b>409,578</b>	<b>507,528</b>

This situation arose due to growth in the City's real estate and personal property tax bases. Consistent with the historical information we analyzed, total property taxes in the City had increased from \$134,115,947 in FY 1995 to \$207,286,286 in FY 2004. Since Mosquito Control received \$0.02 per \$100 on the real estate tax and \$0.08 per \$100 on the personal property tax, they had benefited from these past increases, and the increases were likely to continue in future years.

While, at least initially, it did not appear that the projected excess revenues were by themselves sufficient to support reductions in the mosquito control tax levy they, taken together with the capital reserve deposits, were likely to result in significant increases to fund balances. Analysis of the projected increases to fund balance is shown in Exhibit # 3, and the cumulative capital and undesignated balances are shown in Exhibit # 4. A more detailed fund balance analysis is provided in Appendix B.

**Exhibit # 3  
Projected Increases to Fund Balance**

	<b>FY 2005 Budgeted</b>	<b>FY 2006 Proposed</b>	<b>FY 2007 Estimated</b>	<b>FY2008 Estimated</b>	<b>FY 2009 Estimated</b>	<b>FY 2010 Estimated</b>
<b>Opening Fund Bal. \$</b>	<b>3,600,643</b>	<b>3,846,040</b>	<b>4,249,846</b>	<b>4,720,344</b>	<b>5,285,380</b>	<b>5,952,520</b>
<b>5% Capital Reserve \$</b>	204,275	224,332	234,860	245,927	257,562	269,798
<b>Excess Revenue \$</b>	41,122	179,474	235,638	319,109	409,578	507,528
<b>Ending Fund Bal. \$</b>	<b>3,846,040</b>	<b>4,249,846</b>	<b>4,720,344</b>	<b>5,285,380</b>	<b>5,952,520</b>	<b>6,729,846</b>

**Exhibit # 4  
Projected Increases in Reserves and Undesignated Balances**

	<b>FY 2005 Budgeted</b>	<b>FY 2006 Proposed</b>	<b>FY 2007 Estimated</b>	<b>FY2008 Estimated</b>	<b>FY 2009 Estimated</b>	<b>FY 2010 Estimated</b>
<b>Cumulative Capital Reserve \$</b>	389,930	614,262	849,122	1,095,049	1,352,611	1,622,409
<b>Other Reserves \$</b>	2,956,296	3,017,956	3,070,596	3,125,931	3,184,108	3,245,286
<b>Undesignated Bal. \$</b>	499,814	617,628	800,626	1,064,400	1,415,800	1,862,151
<b>Ending Fund Bal. \$</b>	<b>3,846,040</b>	<b>4,249,846</b>	<b>4,720,344</b>	<b>5,285,380</b>	<b>5,952,520</b>	<b>6,729,846</b>

**Recommendation – Mosquito Control should consider transferring funds not needed for mosquito control expenditures to the City.**

Starting in FY 2006, Mosquito Control should consider transferring the amount identified as excess revenues to the City treasury. The amount to be transferred should be established in consultation with the City's budget office and approved by the Commissioners on an annual basis. Should an unusual circumstance arise that potentially impacts the amount designated for transfer, Mosquito Control should notify the City so that any necessary budget adjustments can be made.

In addition to transferring excess revenue amounts, Mosquito Control should evaluate the level of capital reserves or undesignated fund balances required and consider establishing a policy to transfer funds from these reserves once they reach a certain level, such as five years of reserves or \$1,000,000 each. Such actions will help ensure that Mosquito Control can maintain sufficient reserves for operations, capital replacement, and emergencies without accumulating excessive balances.

**Response – We have reviewed the finding and we concur. We plan to work with the City's budget office annually to determine amounts of future transfers.**

## **2. Staffing Levels and Deployment**

**Finding – Mosquito Control utilized full-time staff in situations where the use of part-time staff may have been more optimal.**

According to Section 7.1 of the Recommendations For the Reorganization of Mosquito Control Services for the City of Chesapeake, "As the organization evolves, the Mosquito Control Commission and its employees may see areas and positions that are needed or job duties and descriptions that need to be updated...As the evolutionary process of the organization begins to take hold, changes and updates to the structure and duties are expected and encouraged. These changes should be systematic, calculated, and deliberate."

To analyze Mosquito Control's staffing levels and deployment, we developed an analysis that compared salary ranges and full-time and part-time positions among five area localities. In reviewing these positions, we noted that Chesapeake had a significant number of full-time applicator-related and source reduction-related positions when compared to some of the other localities. The other localities used part-time employees as part of their compliment. The results of this comparison are shown in Exhibit # 5. Comparisons for other similar positions and related salary ranges are shown in Appendix C.

**Exhibit # 5**  
**Staffing for Applicator- and Source Reduction-Related Positions**

<u>Positions</u>	<u>Chesapeake Positions</u>	<u>Virginia Beach Positions</u>	<u>Portsmouth Positions</u>	<u>James City County Positions</u>	<u>Suffolk Positions</u>
Applicator III	5				
Spray Technicians			2 (4)		
Applicator II	6				
Applicator I	6				
Mosquito Ctrl. Tech.				(4)	1 (6)
ULV Driver	2				
Field Tech II	16				
Maintenance Worker		22 (9)			
Field Tech I	4				
Labor		1			
<b>Total</b>	<b>39</b>	<b>23 (9)</b>	<b>2 (4)</b>	<b>(4)</b>	<b>1 (6)</b>

( ) - denotes part-time employees

This situation appears to have occurred because Chesapeake preferred to use full-time applicators and source reduction employees instead of part-time employees due to concerns about training. However, the other localities that we selected, most notably Virginia Beach, indicated that they were able to successfully train and utilize part-time applicator staff on an ongoing basis. Finally, the Director expressed concern that Mosquito Control would not be able to maintain the levels of service required by the reorganization plan with a reduced number of full-time applicators.

As part of the consolidation, Mosquito Control agreed not to eliminate any filled full-time positions. However, as full-time positions become vacant over time, the continued use of these positions in situations where part-time staff could perform the tasks may add an unnecessary cost burden to Mosquito Control's operations.

**Recommendations - As vacancies occur, Mosquito Control should explore opportunities for converting full-time positions to part-time positions.**

Mosquito Control should consider substituting part-time applicators for full-time applicators as the full-time positions become vacant. Mosquito Control is already utilizing several part-time biologists on a seasonal basis and should also consider this strategy for other positions. The information in Appendix C should provide some assistance in determining the areas where the use of part-timers could be considered.

**Response – The Commission is already in the process of recruiting more part time staff; ads and notices have been posted. Most of these staff would be utilized as ULV Operators for the night time truck spraying during the mosquito season (this is where Virginia Beach utilizes their part time staff). In the report a comparison was made to Virginia Beach's staffing as being entirely part time, this**

should be studied further as Virginia Beach maintains a full-time staff of 28 certified applicators who are hired under a job description for their Public Works field staff as Maintenance Workers but perform the same tasks as CMCC Applicators positions. It is my feeling that in order to maintain our current level of service, a strong full-time staff is necessary. If not we would be constantly training and re-training part-time staff for what is a very important part of our program. Larviciding in the summer season is very important in reducing the number of breeding sites and reducing the amount of aduiciding required to control the adult mosquitoes. The individuals that perform this task must have a great understanding of what, where, when, how, and why certain techniques are used for the environment being accessed, and this is not something that is easily or quickly learned for all circumstances and the products available to be used in an IPM (integrated pest management) based program.

## **D. Other Administrative and Operational Issues**

As previously noted, we determined that Mosquito Control had been extremely effective in executing the reorganization plan. While Mosquito Control appeared to be effectively accomplishing its overall mission, we did identify some areas where administrative and operational practices could be enhanced. Mosquito Control did not have an operations manual to guide day-to-day activities. Some required workload indicators were not being tracked and recorded. Answers to service requests were not fully documented. There were procedural inconsistencies in the recording and documentation of work hours. Supervisors had not received substance abuse detection training. Finally, there was a salary line item error in the FY 2005 budget. We have developed a number of recommendations to assist Mosquito Control in addressing these issues as it continues to implement the reorganization.

### **1. Operations Manual**

#### **Findings – Mosquito Control had not yet developed a formal operations manual.**

Mosquito Control recognized the need to establish and maintain performance standards and best practices in an operations manual to guide its three operating districts. However, Mosquito Control had not yet created this manual.

During the two years prior to our audit, the Director indicated that Mosquito Control's major effort had been to consolidate the five former districts into one consolidated operating entity. These efforts left few resources to develop an operations manual.

The Mosquito Control Director recognized the need for an operating manual and indicated that plans were in place to develop one in the near future. However, until a manual is developed to guide day-to-day operations at the central office and its three districts, inconsistent practices and lack of continuity may occur.

#### **Recommendation – Mosquito Control should develop an operations manual as soon as feasibly possible.**

The manual should include or reference the environmental permits, regulations and licenses required for applying pesticides or biological controls; address training/certification schedule for employees; and strategies to prevent emergence of mosquitoes and dealing with mosquitoes that do emerge from the larval stage. It should also document the decision matrix that specifies what events will trigger a given level of response and document activities that would occur during pre/off season, early season and mid/late season. Finally, the manual can be used as a training guide for new employees on how to perform their jobs, complete production reports and operate equipment on a day-to-day basis.

**Response – The Mosquito Control staff are and have been working to develop an Operations Manual and have recently attended a training seminar on February 24, 2005 with Public Works emphasizing how to properly develop an Operations Manual. The development will proceed and will hopefully be completed in the near future.**

## **2. Tracking Workload Indicators**

**Finding - Due to changes in data collection procedures, Mosquito Control did not track and record data separately for one workload indicator and had not recorded all pertinent data for three other indicators.**

According to Section 5.3 of the Recommendations for the Reorganization of Mosquito Control Services for the City of Chesapeake, “Specific workload indicators have been established to assist The Chesapeake Mosquito Control Commission in determining efficient resource allocation. These indicators will assist the leadership of the organization to identify trends, patterns and emerging challenges with which the organization will be faced...Data and statistics should be tracked to establish benchmarks to identify the types of services needed during heavy, moderate, and low amounts of rain.”

In 2004, Mosquito Control began collecting and recording workload indicators as required in FY 2003. As shown in Exhibit #6, Mosquito Control had collected and recorded most of the workload indicators. However, Mosquito Control had not collected and had decided not to collect data specifically for the Larval Dipping Surveys workload indicator. Also, Mosquito Control has not recorded staff hours spent to complete work requested by citizens for ditch cleaning, backyard inspections & special fogging, and inspections for non-mosquito insects in FY 2004.

**Exhibit # 5  
Workload Indicator Table – FY 2004**

<b>WORKLOAD INDICATORS</b>	<b>STAFF HOURS</b>	<b>QUANTITY</b>
<b>Surveillance/Collection</b>		
New Jersey Light & CDC Traps	2,740	289,455 Species
Larval Dipping Surveys	Not Collected	Not Collected
Geographical Information System	2,252	N/A
Ditch Drainage Requests	Not Tracked In 2004	254 Requests
Backyard Inspections & Special Fogging Requests	Not Tracked In 2004	2,027 Requests
Other – Non-Mosquito Insects Requests	Not Tracked In 2004	71 Requests
<b>Source Reduction</b>		
Ditch Cleaning & Grading	25,253.75	105 Miles/30,177 Cu. Ft.
Refuse Removal	1,904.25	105 Miles
<b>Larviciding</b>		
Inspections & Applications	22,417	18,106 Acres
<b>Adulticiding</b>		
Applications	4,168	509,235 Acres
<b>Training</b>		
Professional Organizations, Certifications, Safety	2,695	N/A
<b>Public Education</b>		
Displays, Symposiums, Public Service Announcements	106	N/A
<b>Administration</b>		
Staff & Office Support	11,440	N/A

The Director stated that the Larval Dipping Surveys indicator did not provide pertinent stand alone data; thus, the data pertaining to staff hours spent was included in the Larviciding Inspections and Applications workload indicator. Finally, the number of species for the Surveys indicator was not collected and recorded because the species number was not significant enough to record. In FY 2004, Mosquito Control did not have procedures in place to collect and record the staff hours spent to complete work requested by citizens. However the Director indicated that, beginning in 2005, they would track the staff hours worked for the three workload indicators on citizens' requests.

According to the Director, separately collecting and recording the staff hours and number of species for the Larval Dipping Surveys workload indicator would have no impact on the development of trends and patterns to use in future operational decisions. However, without collecting and recording the staff hours spent to complete the citizens' requests, Mosquito Control had no baseline data to identify trends and patterns for future decisions related to the requests.

**Recommendation – Mosquito Control should take steps to ensure that the Commissioners are aware of changes that impact workload indicators.**

While Mosquito Control appeared to have a valid reason to eliminate the “Larval Dipping Survey” workload indicator, the Board of Commissioners should be consulted to advise them of the removal of the workload indicator. Beginning in FY 2005, Mosquito Control should collect and record the staff hours spent on the three workload indicators on citizens’ requests to establish a baseline for use in future operational decisions. Keeping the Commissioners aware of workload indicator changes will assist them in conducting their oversight function.

**Response – Mosquito Control is already taking the steps indicated, Information Technology’s staff are working with us to make changes in our data base to help track these needed indicators. Also, in a RFP that is currently out for proposals, we hope to help address this issue in a great way. These indicators are reported to the Board of Commissioners monthly via our monthly work report and the additional indicators will be included as soon as the changes in the data base are completed.**

### **3. Responding to Service Requests**

**Finding - Mosquito Control had not developed a formal policy requiring a response to all service requests within 48 hours. In addition, the database system was not configured to collect information verifying response times.**

According to Section 6.1 of the Recommendations For The Reorganization Of Mosquito Control Services For The City Of Chesapeake, “A primary objective of the reorganization efforts is to maintain a high level of service for the citizens of Chesapeake. Minimum levels of service have been established for the consolidated organization.” The minimum standard for service states, “All complaints, from citizens and/or other City departments will be answered with a response within a 24-48 hour timeframe.”

Mosquito Control had developed and maintained a computerized database system to record and collect information on service requests received from citizens, and recorded 2,352 requests that included larviciding infested standing water, adulticiding active mosquitoes, and cleaning ditches. However, there was no formal policy requirement that Mosquito Control answer all service requests within 48 hours of receipt. Also, the database system used to collect the service request information did not have the ability to collect and/or report on Mosquito Control’s response time to the service request.

This situation occurred because Mosquito Control had not yet developed a formal policy statement to include in its policy manual. Furthermore, the data system used to collect the service request was not configured to record and report service request resolution.

Although there was no documentation that Mosquito Control responded to the citizens' requests within 48 hours, the Director believed that it did. Mosquito Control had also contacted Information Technology to make the necessary system configuration changes to address this problem. However, until the formal statement is developed and the system changes are implemented, Mosquito Control can not conclusively demonstrate compliance with the 48 hour service request requirement.

**Recommendation – Mosquito Control should develop a formal policy statement implementing the 48 hour response requirement and should ensure that its database system is configured to record and report response times.**

Mosquito Control should develop the required policy statement as soon as is practical. Also, Mosquito Control should continue to work with Information Technology to ensure that the system configuration issue is addressed in a timely manner. These actions will allow Mosquito Control to be able to demonstrate compliance with the reorganization directive.

**Response – Though the Commission has always taken pride in being able to respond to service requests within the first 48 working hours, a written policy will be proposed to the board in the near future to establish what an unwritten policy is already. Information Technology staff are also working with us to develop a reporting mechanism to track these responses through our service request database.**

#### **4. Documentation of Work Hours**

**Finding – Mosquito Control did not always document time worked as required and did not use uniform documentation and recordation procedures when recording employees' regular and overtime work hours.**

Administrative Regulation CMCC 20.4 (Time Clock Policy) required that all employees other than the administrative staff, professionals (biologists) and supervisors use time cards and the time clock to punch in and out for hours worked. In addition, uniform documentation and recordation procedures should be used by all supervisors when submitting employees' hours worked to assure that accurate payroll information was maintained for each employee.

We selected the week ending August 1, 2004 to review payroll documentation and recordation for hourly employees receiving overtime and regular pay. Of the 22 employees that we sampled, 15 employees did not punch in and/or out at least one time for regular hours worked, and 13 employees did not punch in and/or out for overtime hours worked. Also, two of the three district offices used time cards to record overtime worked; one district did not use time cards for overtime worked. Thus, documentation was not available for us to verify some employees' regular and overtime hours worked.

We also identified inconsistencies in the methods used by the district offices to submit payroll information to the central office for processing and recordation. For example, the Deep Creek supervisor e-mailed and hard copied their Weekly Payroll Sheet; the South Chesapeake office submitted a hand-written Daily Supervisor Report that included payroll information; and the Greenbrier supervisor sent a hand written Weekly Payroll Sheet.

The time card issue arose because supervisors did not always ensure that employees punched in and out as required. The inconsistencies in payroll submission occurred because there were no written procedures established for the district office to provide uniform payroll data to the central office.

Unless time cards are completed as required, Mosquito Control cannot assure that all employees are being appropriately paid for actual hours worked. Also because the central office had to enter payroll information for the district offices that submitted handwritten payroll information, there was a risk of data entry errors as well.

**Recommendation – Mosquito Control should take steps to ensure that 1) time worked is documented as required and 2) payroll documentation and recordation procedures are consistent throughout Mosquito Control.**

Mosquito Control should develop written procedures detailing the proper use of time cards to record regular and overtime hours worked and establish consistent procedures for district offices to follow when submitting and certifying hours worked by employees. Supervisors should also monitor employees' proper use of the time cards for regular and overtime work. Finally, Mosquito Control should encourage electronic submission of Weekly Payroll Sheets and other payroll documentation, to both enhance process consistency and reduce the potential for errors.

**Response – The reporting procedures for the previous five (5) commissions were dramatically different and though most of these reporting procedures have been standardized, we are still making changes in the process to assure that all time is accounted for in a standard way. The aforementioned RFP will also help with this endeavor as some of the options requested is for a database designed to track our control efforts.**

## **5. Compliance with Substance Abuse Policies**

**Finding – Mosquito Control supervisors had not been formally trained to detect drug and alcohol abuse by employees. Also, the custodian of the Random (drug test) Selection Spreadsheet participated as a witness to the random number selection process which was not permitted under substance abuse policy and procedures.**

Administrative Regulation CMCC 23.4 required that Mosquito Control supervisors be trained to address illegal alcohol and other drug use by employees, to recognize

facts that give rise to a reasonable suspicion, and to document facts and circumstances to support finding the reasonable cause. In addition, Administrative Regulation CMCC 23.5 stated that the individual (custodian) that maintained the Random Selection Spreadsheet shall be excluded from participating in the random number selection process.

Mosquito Control had policies, procedures, and practices in place to detect and deter its employees from the use of alcohol, illegal drugs and other control substances. However, the supervisors responsible for carrying out these policies and procedures were not formally trained to detect and deter their subordinates from using illegal substances. In addition, Mosquito Control performed three random tests with 6 employees selected in each test during 2004. The custodian of the Random Selection Spreadsheet used to select the tested employees participated as a witness to the random number selection process for one test, thus violating the policy.

This situation occurred because supervisors had not been adequately trained to detect and deter the use of alcohol and illegal drugs in the workplace. Also, the custodian of the Random Selection Spreadsheet's participation in the random number generation process was an oversight.

Because the supervisors were not properly trained, employees may have substance abuse problems that are not detected. In addition, allowing the custodian of the Random Selection Spreadsheet to participate in the selection process could compromise the integrity of the program.

**Recommendation – Mosquito Control should take steps to ensure that 1) supervisors receive the appropriate drug and alcohol abuse detection training and 2) the custodian of the Random (drug test) Selection Spreadsheet does not participate as a witness to future random number selection processes for drug testing.**

Mosquito Control should utilize the City's Human Resources Department to assist it with providing the required formal training to its supervisors. Also, the Mosquito Control Director should ensure that the Spreadsheet custodian does not participate in future random number selection processes. These steps will help ensure that the drug and alcohol abuse policy has its desired effect.

**Response – 1) There are steps already underway to have the supervisory staff trained for abuse detection. We have recently, again contacted the Human Resources staff and they state that they are developing such training and will include us when it is completed. Additionally we have contacted the Police Department who have stated that they will provide us with training in the interim and 2) this was allowed to happen in error. The custodian was allowed to observe the process and inadvertently signed the witness sheet. This will not happen again!**

## **6. Budget Error**

### **Finding – Mosquito Control’s FY 2005 operating budget contained an error related to supervisory salary estimates.**

Mosquito Control’s submissions for the individual line items in its operating budget should reflect the best cost estimate information available for the line item in question. In preparing the FY 2005 operating budget, Mosquito Control estimated that the budget appropriation for the “Supervisors” salaries line item (Code 1110) would be \$179,340. Subsequent to the approval of the budget, the Director realized that he had under budgeted the “Supervisors” salaries line item by approximately \$253,257; the correct amount should have been \$432,597.

The FY 2005 budget was just the second fiscal year budget developed for the consolidated Mosquito Control as a single organization. The Director indicated that he did not become aware of the lack of sufficient funds for the “Supervisors” salaries line item until after the budget was approved and funds were appropriated.

To address the shortfall, the Director indicated that Mosquito Control would reduce expenditures and move funds from other line items to cover the shortage. These actions should certainly address the problem in FY 2005. However, if the same problem were to recur in future years after Mosquito Control began transferring excess funds to the City, such an error could impact not only Mosquito Control’s budget but the City’s budget as well.

### **Recommendation – Mosquito Control should take steps to ensure that budgeting errors do not recur.**

Mosquito Control should maintain a program or spreadsheet that would flag pre-determined variances in proposed fiscal year expenditures from realized prior year expenses. In addition to ensuring that any variances are addressed, Mosquito Control may wish to have additional staff internally review the budget submissions. Such action will ensure the submission are accurate and prevent errors that affect multiple City-related budgets.

**Response – Steps have already been taken to ensure that such an error does not occur again. FY 2005 was our first fully consolidated budget. We just made an error in calculations; but, this has already been corrected and is so indicated by our FY 2006 budget.**

# **APPENDIX A**

## **RESPONSES FROM MOSQUITO CONTROL COMMISSION OFFICIALS**

**CHESAPEAKE**  
**MOSQUITO CONTROL COMMISSION**

Dr. Nancy Welch, Commission Chair  
Gene R. Payne, Director  
900 Hollowell Lane, Chesapeake, Virginia 23320  
757-382-3450 - fax 757-382-3466

Mr. Jay Poole  
City Auditor  
City of Chesapeake  
PO Box 15525  
Chesapeake, Va. 23320

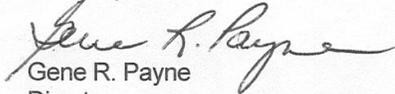
Dear Mr. Poole:

This letter is to confirm that I am in receipt of the draft copy of the Chesapeake Mosquito Control Performance Audit.

I have read the report and have attached our responses to the issues of concern.

It was indeed a pleasure and a learning experience facing our first performance audit. You and your staff display the professionalism and courtesy that eased our pre-audit apprehension.

Sincerely,

  
Gene R. Payne  
Director

**MOSQUITO CONTROL COMMISSION RESPONSES for Fiscal Year 2005  
PERFORMANCE AUDIT  
Conducted by City of Chesapeake Audit Services Department**

**C. Excess Revenues and Staffing Changes**

**1. Excess Revenues Projected in Future Years**

**Finding** – Mosquito Control was likely to receive revenues in future years that exceeded its foreseeable expenditure requirements.

**Recommendation** – Mosquito Control should consider transferring funds not needed for mosquito control expenditures to the City.

**Response** – **We have reviewed the finding and we concur. We plan to work with the City’s budget office annually to determine amounts of future transfers.**

**2. Staffing Levels and Deployment**

**Finding** – Mosquito Control utilized full-time staff in situations where the use of part-time staff may have been more optimal.

**Recommendations** - As vacancies occur, Mosquito Control should explore opportunities for converting full-time positions to part-time positions.

**Response** – **The Commission is already in the process of recruiting more part-time staff. Ads and notices have been posted. Most of these staff would be utilized as ULV Operators for the night time truck spraying during the mosquito season (this is where Virginia Beach utilizes their part-time staff). In the report a comparison was made to Virginia Beach’s staffing as being entirely part time, this should be studied further as Virginia Beach maintains a full-time staff of 28 certified applicators who are hired under a job description for their Public Works field staff as Maintenance Workers but perform the same tasks as CMCC Applicators positions. It is my feeling that in order to maintain our current level of service, a strong full-time staff is necessary. If not, we would be constantly training and re-training part-time staff for what is a very important part of our program. Larviciding in the summer season is very important in reducing the number of breeding sites and reducing the amount of adulticiding required to control the adult mosquitoes. The individuals that perform this task must have a great understanding of what, where, when, how, and why certain techniques are used for the environment being accessed, and this is not something that is easily or quickly learned for all circumstances and the products available to be used in an IPM (integrated pest management) based program.**

## **D. Other Administrative and Operational Issues**

### **1. Operations Manual**

**Findings** – Mosquito Control had not yet developed a formal operations manual.

**Recommendation** – Mosquito Control should develop an operations manual as soon as feasibly possible.

**Response** – Mosquito Control staff are and have been working to develop an Operations Manual and have recently attended a training seminar on February 24, 2005 with Public Works emphasizing how to properly develop an Operations Manual. The development will proceed and will hopefully be completed in the near future.

### **2. Tracking Workload Indicators**

**Finding** - Due to changes in data collection procedures, Mosquito Control did not track and record data separately for one workload indicator and had not recorded all pertinent data for three other indicators.

**Recommendation** – Mosquito Control should take steps to ensure that the Commissioners are aware of changes that impact workload indicators.

**Response** – Mosquito Control is already taking the steps indicated, Information Technology's staff are working with us to make changes in our data base to help track these needed indicators. Also, in a RFP that is currently out for proposals, we hope to help address this issue in a great way. These indicators are reported to the Board of Commissioners monthly via our monthly work report and the additional indicators will be included as soon as the changes in the data base are completed.

### **3. Responding to Service Requests**

**Finding** - Mosquito Control had not developed a formal policy requiring a response to all service requests within 48 hours. In addition, the database system was not configured to collect information verifying response times.

**Recommendation** – Mosquito Control should develop a formal policy statement implementing the 48 hour response requirement, and should ensure that its database system is configured to record and report response times.

**Response** – Though the Commission has always taken pride in being able to respond to service requests within the first 48 working hours, a written policy will be proposed to the board in the near future to establish what an unwritten policy is already. Information Technology staff are also working with us to develop a reporting mechanism to track these responses through our service request database.

#### **4. Documentation of Work Hours**

**Finding** – Mosquito Control did not always document time worked as required and did not use uniform documentation and recordation procedures when recording employees' regular and over time work hours.

**Recommendation** – Mosquito Control should take steps to ensure that 1) time worked is documented as required and 2) payroll documentation and recordation procedures are consistent throughout Mosquito Control.

**Response** – **The reporting procedures for the previous five (5) commissions were dramatically different and though most of these reporting procedures have been standardized, we are still making changes in the process to assure that all time is accounted for in a standard way. The aforementioned RFP will also help with this endeavor as some of the options requested is for a database designed to track our control efforts.**

#### **5. Compliance with Substance Abuse Policies**

**Finding** – We found that Mosquito Control supervisors had not been formally trained to detect drug and alcohol abuse by employees. Also, the custodian of the Random Selection Spreadsheet participated as a witness to the random number selection process which was not permitted under substance abuse policy and procedures.

**Recommendation** – Mosquito Control should take steps to ensure that 1) supervisors receive the appropriate drug and alcohol abuse detection training and 2) the custodian of the Random Selection Spreadsheet does not participate as a witness to future random number selection processes for drug testing.

**Response** – **1) There are steps already underway to have the supervisory staff trained for abuse detection. We have recently again contacted the Human Resources staff and they state that they are developing such training and will include us when it is completed. Additionally we have contacted the Police Department who have stated that they will provide us with training in the interim and 2) this was allowed to happen in error. The custodian was allowed to observe the process and inadvertently signed the witness sheet. This will not happen again!**

#### **6. Budget Error**

**Finding** – Mosquito Control's FY 2005 operating budget contained an error related to supervisory salary estimates.

**Recommendation** – Mosquito Control should take steps to ensure that budgeting errors do not recur.

**Response – Steps have already been taken to ensure that such an error does not occur again. FY 2005 was our first fully consolidated budget. We just made an error in calculations; but, this has already been corrected and is so indicated by our FY 2006 budget.**

# **APPENDIX B**

## **MOSQUITO CONTROL COMMISSION**

### **REVENUES AND EXPENSES**

### **FISCAL YEARS 2005 TO 2010**

MOSQUITO CONTROL COMMISSION  
PROJECTED REVENUES AND EXPENSES  
FISCAL YEARS 2005 TO 2010

	<b>FY 2005</b>	<b>FY 2006 Proposed</b>	<b>FY 2007 Proposed</b>	<b>FY2008 Proposed</b>	<b>FY 2009 Proposed</b>	<b>FY 2010 Proposed</b>
<b>Revenues:</b>						
Real Property	\$2,688,500	\$3,001,979	\$3,119,056	\$3,240,699	\$3,367,087	\$3,498,403
Personal Property	\$1,159,000	\$1,238,044	\$1,322,478	\$1,412,671	\$1,509,016	\$1,611,930
Public Service Corp.	\$172,000	\$180,617	\$189,666	\$199,168	\$209,147	\$219,625
Interest Income	\$66,000	\$66,000	\$66,000	\$66,000	\$66,000	\$66,000
<b>Total Revenues</b>	<b>\$4,085,500</b>	<b>\$4,486,640</b>	<b>\$4,697,201</b>	<b>\$4,918,539</b>	<b>\$5,151,249</b>	<b>\$5,395,959</b>
<b>Expenses:</b>	<b>Appropriated</b>	<b>Proposed</b>	<b>*Projected</b>	<b>*Projected</b>	<b>*Projected</b>	<b>*Projected</b>
Department Head	\$69,010	\$72,421	\$74,594	\$76,831	\$79,136	\$81,510
Salaries	\$1,100,000	\$1,151,514	\$1,186,059	\$1,221,641	\$1,258,290	\$1,296,039
Administrative	\$134,971	\$143,729	\$148,041	\$152,482	\$157,057	\$161,768
Supervisors	\$179,340	\$453,464	\$467,068	\$481,080	\$495,512	\$510,378
Overtime Salaries	\$75,000	\$63,000	\$64,890	\$66,837	\$68,842	\$70,907
Part-time Salaries	\$61,800	\$54,061	\$55,683	\$57,353	\$59,074	\$60,846
FICA	\$123,939	\$148,271	\$152,719	\$157,301	\$162,020	\$166,880
VRS	\$237,644	\$295,574	\$304,441	\$313,574	\$322,982	\$332,671
Group Insurance	\$381,658	\$333,000	\$342,990	\$353,280	\$363,878	\$374,794
Life Insurance	\$15,583	\$0	\$21,384	\$22,025	\$22,686	\$23,367
Unemployment Insurance	\$5,000	\$5,000	\$5,150	\$5,305	\$5,464	\$5,628
Worker's Comp.	\$65,000	\$58,000	\$59,740	\$61,532	\$63,378	\$65,280
Professional Services	\$1,000	\$2,000	\$2,060	\$2,122	\$2,185	\$2,251
Doctors Fee	\$2,000	\$2,000	\$2,060	\$2,122	\$2,185	\$2,251
Drug & Alcohol Screening	\$7,000	\$5,000	\$5,150	\$5,305	\$5,464	\$5,628
Audit Expenses	\$10,000	\$10,000	\$10,300	\$10,609	\$10,927	\$11,255
Legal Fees	\$5,000	\$5,000	\$5,150	\$5,305	\$5,464	\$5,628
Laboratory Services	\$5,000	\$5,000	\$5,150	\$5,305	\$5,464	\$5,628
Public Relations	\$8,000	\$8,000	\$8,240	\$8,487	\$8,742	\$9,004
Contractual Services	\$228,500	\$155,000	\$159,650	\$164,440	\$169,373	\$174,454
Temporary Help	\$1,000	\$7,000	\$7,210	\$7,426	\$7,649	\$7,879
Repairs and Maintenance	\$15,000	\$8,000	\$8,240	\$8,487	\$8,742	\$9,004
Repairs - Building	\$5,000	\$5,000	\$5,150	\$5,305	\$5,464	\$5,628
Maintenance Service Contract	\$3,500	\$2,500	\$2,575	\$2,652	\$2,732	\$2,814
Advertising	\$1,000	\$1,000	\$1,030	\$1,061	\$1,093	\$1,126
Information Technology	\$62,965	\$65,000	\$66,950	\$68,959	\$71,027	\$73,158
City Garage	\$1,000	\$1,000	\$1,030	\$1,061	\$1,093	\$1,126

<b>Expenses:</b>	<b>FY 2005 Appropriated</b>	<b>FY 2006 Proposed</b>	<b>FY 2007 *Projected</b>	<b>FY2008 *Projected</b>	<b>FY 2009 *Projected</b>	<b>FY 2010 *Projected</b>
Electricity	\$20,000	\$20,000	\$20,600	\$21,218	\$21,855	\$22,510
Water & Sewer	\$3,000	\$3,000	\$3,090	\$3,183	\$3,278	\$3,377
Natural Gas	\$5,000	\$5,000	\$5,150	\$5,305	\$5,464	\$5,628
Postage, Freight	\$1,200	\$1,200	\$1,236	\$1,273	\$1,311	\$1,351
Telephone	\$14,640	\$14,000	\$14,420	\$14,853	\$15,298	\$15,757
Public Official	\$5,000	\$4,600	\$4,738	\$4,880	\$5,027	\$5,177
General Liability Ins.	\$100,000	\$75,000	\$77,250	\$79,568	\$81,955	\$84,413
Equipment Insurance	\$80,000	\$80,000	\$82,400	\$84,872	\$87,418	\$90,041
Building Insurance	\$18,000	\$30,000	\$30,900	\$31,827	\$32,782	\$33,765
Other Insurance	\$18,000	\$18,000	\$18,540	\$19,096	\$19,669	\$20,259
Travel Expenses	\$2,000	\$3,000	\$3,090	\$3,183	\$3,278	\$3,377
Fares - Air, Car	\$3,000	\$3,000	\$3,090	\$3,183	\$3,278	\$3,377
Food & Lodging	\$8,000	\$8,000	\$8,240	\$8,487	\$8,742	\$9,004
Conference & Education Reg.	\$5,000	\$5,000	\$5,150	\$5,305	\$5,464	\$5,628
Dues, Membership	\$2,500	\$2,500	\$2,575	\$2,652	\$2,732	\$2,814
Office Supplies & Equip.	\$25,000	\$15,000	\$15,450	\$15,914	\$16,391	\$16,883
Food Supplies & Food Services	\$3,000	\$2,000	\$2,060	\$2,122	\$2,185	\$2,251
Agricultural Supplies	\$500,000	\$500,000	\$515,000	\$530,450	\$546,364	\$562,754
Medical & Laboratory Supplies	\$2,000	\$2,500	\$2,575	\$2,652	\$2,732	\$2,814
Laundry, Housekeeping & Janitor	\$3,000	\$3,000	\$3,090	\$3,183	\$3,278	\$3,377
Repairs & Maint. Supplies & Equip.	\$30,000	\$35,000	\$36,050	\$37,132	\$38,245	\$39,393
Vehicle & Power Equip. Fuels	\$40,000	\$45,000	\$46,350	\$47,741	\$49,173	\$50,648
Vehicle & Power Equip. Supplies	\$13,000	\$10,000	\$10,300	\$10,609	\$10,927	\$11,255
Uniform & Wearing Apparel	\$30,000	\$30,000	\$30,900	\$31,827	\$32,782	\$33,765
Small Equipment & Tools	\$11,353	\$11,000	\$11,330	\$11,670	\$12,020	\$12,381
Small Computer Equip. & Software	\$5,000	\$5,000	\$5,150	\$5,305	\$5,464	\$5,628
Small Furniture and Equipment	\$3,000	\$3,000	\$3,090	\$3,183	\$3,278	\$3,377
Replace Machinery & Equipment	\$30,000	\$15,000	\$15,450	\$15,914	\$16,391	\$16,883
Replace Furniture & Fixtures	\$5,000	\$5,000	\$5,150	\$5,305	\$5,464	\$5,628
New Machinery & Equipment	\$12,000	\$12,000	\$12,360	\$12,731	\$13,113	\$13,506
New Furniture & Fixtures	\$2,500	\$2,500	\$2,575	\$2,652	\$2,732	\$2,814
New Motor Vehicles & Equipment	\$15,000	\$35,000	\$36,050	\$37,132	\$38,245	\$39,393
Contingences	\$20,000	\$20,000	\$20,600	\$21,218	\$21,855	\$22,510
<b>Total Appropriations/Expenditures</b>	<b>\$3,840,103</b>	<b>\$4,082,834</b>	<b>\$4,226,703</b>	<b>\$4,353,504</b>	<b>\$4,484,109</b>	<b>\$4,618,632</b>

5% Reserve for Capital Expenses	\$204,275	\$224,332	\$234,860	\$245,927	\$257,562	\$269,798
<b>Total Expenses and Reserves</b>	<b>\$4,044,378</b>	<b>\$4,307,166</b>	<b>\$4,461,563</b>	<b>\$4,599,431</b>	<b>\$4,741,671</b>	<b>\$4,888,430</b>
<b>Excess Revenue</b>	<b>\$41,122</b>	<b>\$179,474</b>	<b>\$235,638</b>	<b>\$319,109</b>	<b>\$409,578</b>	<b>\$507,528</b>
<b>Fund Balance Analysis:</b>						
<b>Projected Opening Fund Balance</b>	<b>\$3,600,643</b>	<b>\$3,846,040</b>	<b>\$4,249,846</b>	<b>\$4,720,344</b>	<b>\$5,285,380</b>	<b>\$5,952,520</b>
Capital Reserve	\$389,930	\$614,262	\$849,122	\$1,095,049	\$1,352,611	\$1,622,409
Cash Flow Reserve	\$1,060,000	\$1,121,660	\$1,174,300	\$1,229,635	\$1,287,812	\$1,348,990
Inventory Reserve	\$246,296	\$246,296	\$246,296	\$246,296	\$246,296	\$246,296
Building Reserve	\$600,000	\$600,000	\$600,000	\$600,000	\$600,000	\$600,000
Emergency Reserve	\$1,050,000	\$1,050,000	\$1,050,000	\$1,050,000	\$1,050,000	\$1,050,000
Undesignated Fund Balance	\$499,814	\$617,628	\$800,626	\$1,064,400	\$1,415,800	\$1,862,151
<b>Projected Ending Fund Balance</b>	<b>\$3,846,040</b>	<b>\$4,249,846</b>	<b>\$4,720,344</b>	<b>\$5,285,380</b>	<b>\$5,952,520</b>	<b>\$6,729,846</b>

FY 2006 Revenue Projections were based on the Real Estate Assessor's 2006 Preliminary Real Property Assessment Increase (11.66%) and the average % increase over a 10-year period for Personal Property (6.82%) assessments and 20-year period for Public Service Corporation (5.01%) assessments. Subsequently in February 2005, the Real Estate Assessor indicated that the final 2006 Real Property assessment increase (%) would be somewhat higher than the preliminary assessment increase.

FY 2006 – FY 2010 Revenue Projections for Interest Income remained constant. We believe this is a conservative estimate.

FY 2007 – FY 2010 Revenue Projections were based on the average % increase over a 20-year period for Real Property (3.90%), and Public Service Corporation (5.01%) assessments, and 10-year period for Personal Property (6.82%) assessments.

FY 2006 Proposed Budget was approved by the Mosquito Control Commission Board in January 2005.

\*We assumed a 3% annual budget increase for expenditures for FY 2007 through FY 2010.

The City's Budget Department estimated that Life Insurance expenses would be 1.14% of full-time staff salaries for FY 2007 – FY 2010.

\*\*FY 2005 "Supervisor Salaries" was mistakenly budgeted for \$253,257 less than required. Mosquito Control will reduce expenditures in other line items during the fiscal year to make up the shortfall.

# **APPENDIX C**

## **COMPARISON OF SELECTED MOSQUITO CONTROL PROGRAMS**

### **JOB POSITIONS AND SALARY RANGES**

**COMPARISON OF MOSQUITO CONTROL PROGRAM JOB POSITIONS  
AND SALARY RANGES OF SELECTED LOCALITIES**

Positions	City of Chesapeake Salary Ranges			Virginia Beach Salary Ranges			City of Portsmouth Salary Ranges			James City County Salary Ranges			City of Suffolk Salary Ranges		
	Begin	FTE's	End	Begin	FTE's	End	Begin	FTE's	End	Begin	FTE's	End	Begin	FTE's	End
Superintendent	\$49,534	1	\$76,778	\$46,880	1	\$70,320									
Ops Director	\$44,036	1	\$68,255												
Mosquito Biologist							\$39,991	1	\$65,990						
Environmental Specialist										\$39,689	1	\$59,534			
Mosquito Cntl Supervisor													\$30,183	1	\$43,766
GIS Analyst	\$36,194	1	\$56,101												
Biologist II	\$36,194	1	\$56,101												
Biologist I	\$33,464	1(2)	\$51,868												
Environmental Assistant										\$29,118	1	\$43,677			
Mosquito Cntl Aide				\$23,481	1	\$34,047									
Mosquito Inspector							\$27,070	1	\$43,311						
Biologist Tech	\$22,606	1	\$35,041												
Dist Supvr	\$42,342	3	\$65,630												
Hwy Opra Supvr				\$38,476	1	\$55,790									
Maintenance Supvr				\$34,858	2	\$50,544									
Field Supvr II	\$26,446	6	\$40,922												
MC Crew Leader				\$21,273	6	\$30,846	\$24,553	1	\$39,285						
Mechanic II	\$26,446	1	\$40,922												
Mechanic I	\$24,451	1	\$37,899												
Mechanical Tech	\$22,606	2	\$35,041												
Applicator III	\$22,606	5	\$35,041												
Spray Technicians							\$22,270	2(4)	\$35,632						
Applicator II	\$20,901	6	\$32,397												
Applicator I	\$20,097	6	\$31,150												
Mosquito Cntl Technician										(4)			\$19,173	1(6)	\$27,800
ULV Driver	\$20,097	2	\$31,150												
Field Tech II	\$20,097	16	\$31,150												
Maintenance Worker				\$20,247	22(9)	\$29,359									
Field Tech I	\$18,581	4	\$29,497												
Labor				\$17,272	1	\$27,944									
Custodian	\$19,325	1	\$29,952												
Admin Assistant	\$33,464	1	\$51,868												
Office Specialist	\$26,446	2	\$40,922												
Total FTE's and PTE's		62(2)			34(9)			5(4)			2(4)			2(6)	

Program Head
  Program Biologist
  Program Supervisor
  Program Crew Leader
  Program Applicator & Source Reduction Laborer
 ( ) = Part Time Employee

## Summary and Notes

We reviewed all job positions of the surveyed localities and categorized them into six based on job descriptions: Mosquito Control Program Head, Mosquito Control Program Biologist, Mosquito Control Program Supervisors, Mosquito Control Program Crew Leader, Mosquito Control Program Applicator and Mosquito Control Program Laborer. However, not all localities had jobs that were analogous to the jobs (i.e., Mechanic, Custodian, Administrative Assistant, and Office Specialist) within Chesapeake Mosquito Control. Chesapeake's program was the only program that was in itself a department; all other programs were a division of another department (i.e., Department of Public Works). Chesapeake and Virginia Beach both had multiple job positions within a single job category.

Chesapeake's payroll ranges exceeded those of the other localities for five of the six job categories surveyed. The salary ranges for entry and semi-skill level job categories (program's crew leaders, applicators and laborers) were comparatively competitive across mosquito control programs surveyed, with an average difference of 6.67%. For the skilled and management job level categories (program's heads, biologists, and supervisors), Chesapeake's salaries ranged an average of 15.59% above the other localities surveyed. However, overall the operations in Chesapeake was considerably larger than the other localities surveyed. Virginia Beach was the only municipality with program operations that were similar to Chesapeake's.

We analyzed the selected localities' operational practices for handling adulticide and larvicide spraying, and source reduction and their associated cost. While Chesapeake used full-time employees for source reduction and spraying including evening adulticiding, other localities handled the workload during mosquito season with a mix of full-time and part-time employees. In addition to further control cost for after work hour adulticiding spraying, some localities split work schedules to minimize or avoid overtime hours paid to full-time employees.