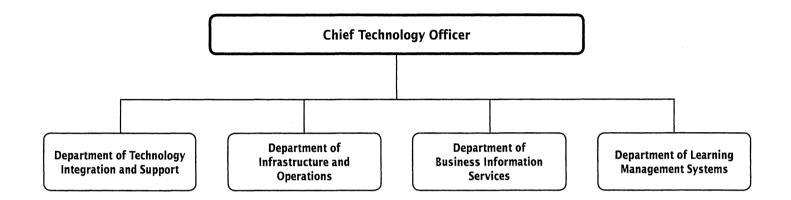
# Office of the Chief Technology Officer

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## Office of the Chief Technology Officer Summary of Resources By Object of Expenditure

OBJECT OF EXPENDITURE	FY 2015 ACTUAL	FY 2016 BUDGET	FY 2016 CURRENT	FY 2017 BUDGET	FY 2017 CHANGE
POSITIONS					
Administrative	14.000	13.000	13.000	13.000	
Business/Operations Admin.	12.000	11.000	11.000	9.000	(2.000)
Professional	20.200	20.000	20.000	20.000	
Supporting Services	109.800	106.000	106.000	104.000	(2.000)
TOTAL POSITIONS	156.000	150.000	150.000	146.000	(4.000)
01 SALARIES & WAGES					
Administrative	\$1,612,364	\$1,835,038	\$1,835,038	\$1,858,818	\$23,780
Business/Operations Admin.	1,004,251	1,259,269	1,259,269	1,061,304	(197,965)
Professional	2,368,921	2,386,658	2,386,658	2,439,502	52,844
Supporting Services	8,756,858	9,354,350	9,354,350	9,419,286	64,936
TOTAL POSITION DOLLARS	13,742,394	14,835,315	14,835,315	14,778,910	(56,405)
OTHER SALARIES Administrative					
Professional	215,308	173,000	173,000	176,460	3,460
Supporting Services	25,068	66,415	66,415	48,148	(18,267)
TOTAL OTHER SALARIES	240,376	239,415	239,415	224,608	(14,807)
TOTAL SALARIES AND WAGES	13,982,770	15,074,730	15,074,730	15,003,518	(71,212)
02 CONTRACTUAL SERVICES	6,447,702	6,635,477	6,635,477	6,718,067	82,590
03 SUPPLIES & MATERIALS	497,582	465,812	465,812	423,364	(42,448)
04 OTHER					
Local/Other Travel	36,860	65,639	65,639	52,717	(12,922)
Insur & Employee Benefits					
Utilities	2,955,723	2,803,971	2,803,971	2,847,626	43,655
Miscellaneous	609,949	634,405	634,405	634,405	
TOTAL OTHER	3,602,532	3,504,015	3,504,015	3,534,748	30,733
05 EQUIPMENT	656,019	774,068	774,068	677,614	(96,454)
GRAND TOTAL AMOUNTS	\$25,186,605	\$26,454,102	\$26,454,102	\$26,357,311	(\$96,791)

## **Office of the Chief Technology Officer—Overview**



F.T.E. Positions 146.0

(In addition, there are 32.5 positions funded by the Capital Budget, and a 0.5 position funded by the Employee Benefits Trust Fund)

#### FY 2017 OPERATING BUDGET

# **Office of the Chief Technology Officer**

Chief Technology Officer Assistant to the Associate Superintendent (N) Fiscal Specialist II (25) Administrative Services Manager 1 (17) Administrative Secretary III (16) Fiscal Assistant III (16)	1.0 1.0 1.0 1.0 1.0
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F.T.E. Positions 6.0

FY 2017 OPERATING BUDGET

**MISSION** The mission of the Office of the Chief Technology Officer (OCTO) is to provide high-quality technology systems and services essential to the success of every student. The office is committed to excellence in providing technology solutions to support teachers, engage students, and assist in the effective business operations of Montgomery County Public Schools (MCPS). These solutions are reflective of the requirements and priorities of our stakeholders. They are developed following best practices for project management and are implemented with continuous collaboration and communication. The office is dedicated to creating an organizational culture of respect, where individuals are aware and understand the impact of their behavior and decisions on others and have an awareness, understanding, and tolerance of other interests, viewpoints, cultures, and backgrounds.

### MAJOR FUNCTIONS

#### **Department of Technology Integration and Support**

OCTO leads the selection of innovative technologies in K–12 environments and leads the development of high-quality professional development that promotes the effective integration of technology in teaching and learning environments and excellence in teaching and learning.

#### **Department of Infrastructure and Operations**

OCTO manages the enterprise-wide technical systems, including the data center, network connections, e-mail, and telephones to facilitate the implementation of effective, secure, and reliable hardware and software solutions. OCTO also provides technical assistance to schools and offices.

#### **Department of Business Information Services**

OCTO plans, develops, implements, and supports high-quality business solutions contributing to the transformation of learning environments through the innovative integration of technology across all aspects of the school system.

#### **Department of Learning Management Systems**

OCTO provides instructional and information systems that enhance the education of students through the innovative application of technology; facilitate the design of connected systems, processes, and information; increase the efficiency of the educator; and transform access to information in support of teaching and learning for staff, students, parents, unions, and the community.

## ACCOMPLISHMENTS AND INITIATIVES

- » OCTO's Technology Modernization initiative replaced approximately 10,000 computers in 54 schools, 2 of which were new or newly renovated. In addition, 13,000 Chromebooks were distributed to these schools, in support of the implementation of the MCPS Strategic Technology Plan.
- » OCTO configured and integrated 40,000 Chromebook laptops in schools across the district. Targeted grade levels included Grades 3, 5, 6, and high school social studies classes. Google Apps for Education accounts were synced with Active Directory, allowing coordination at the identity management level to automatically provision and decommission user accounts as users enroll and withdrawal from the district. The second year of the 21st Century Classroom Initiative is currently under way, where additional devices will be distributed to Grade 4 classrooms and select middle school classrooms.
- » OCTO instructional technology specialists provided schools and offices with ongoing services and support for all technology systems, including the Instruction Center, myMCPS, Measures of Academic Progress (MAP), mClass, standards-based grading and reporting, Partnership for Assessment of Readiness for College and Careers (PARCC), Google Apps for Education, using data to inform instruction, the electronic grade book, Financial Management System, Human Resources Information System, MCPS Careers, Professional Development Online (PDO), Connect-ED, Fortis, the Transportation Information Management System, and the Facilities Availability and Emergency Status Reporting. OCTO instructional technology specialists conducted more than 600 professional development sessions across 110 different topics. They provided job-embedded professional development for system initiatives and regularly supported collaborative grade-level planning to all elementary schools and content-specific planning at the secondary level.
- » OCTO designed and facilitated more than 120 professional development and work sessions over the summer, representing more than 60 topics, including grading and reporting, integrating technology with instruction, using MAP data to inform instruction, PDO, and Edline. More than 3,000 teachers and MCPS staff attended these trainings this past summer. In addition, OCTO created and hosted two teacher conferences (Innovate, Integrate, Collaborate), a supporting services conference, and a leadership series for school-based leaders. These conferences all focused on integrating technology in teaching and learning and using data to inform instruction.
- » OCTO instructional technology specialists worked with more than 1,200 teachers as they earned credit creating interactive lessons that integrate technology with Curriculum 2.0. These teachers participated in a weeklong course designed to help them plan for meaningful instruction using digital content, multimedia formats,

interactive applications, and technology resources as they teach Curriculum 2.0. Courses focused on using Google Apps for Education to create interactive learning experiences for students.

- » OCTO provided large-scale printing services for both student and business systems, including approximately 156,000 report cards, 19,000 related administrative reports, and 30,000 interim reports per reporting period, as well as approximately 700 employee paychecks (employee paystubs are available electronically via ePaystub, eliminating the need for paystub printing for employees using direct deposit) and 31,000 timesheets per pay period.
- » OCTO worked closely with other departments throughout the organization to expand the myMCPS system in support of improved functionality and the addition of parent/student/teacher collaboration features.
- » OCTO implemented a new identity management system, which has been deployed and improves the management of user accounts and access to disparate systems throughout the enterprise.
- » OCTO continues to expand and enhance key operational management solutions. This includes identifying, developing, and implementing industry-leading software solutions that best meet the needs of schools and offices. The prevalence of web-based solutions underpins important technology decisions as MCPS works to provide solutions that meet or exceed the expectations of 21st century institutions.
- » OCTO implemented a one-stop online portal for employees to access, view, and update personal information. The services include the ability to view current benefits, make changes during the Open Enrollment window, access pay information, and link to retirement planning applications.
- » OCTO provided elementary schools with an online application for assigning staff for extracurricular activities (ECA) and associated processing of stipends and salary supplements. This online process streamlines the end-to-end process by allowing school administration to easily assign the ECA activities to employees and provides a work flow for approval by the principal. Completing and processing paper forms is eliminated and the automation of back-end processes facilitates maintenance of the assignments throughout the year. Planning is under way to provide this functionality to secondary schools.
- » OCTO made enhancements to facilitate changes in the administration of tax deferred annuities and health care insurance plan providers were implemented. Additionally, new federal requirements for employer reporting associated with the *Affordable Health Care Act* and for providing employees with IRS Form 1095-C, Employer-Provided Health Insurance Offer and Coverage, for the prior year were developed and implemented.
- » OCTO provided budget data for all stages of the operating budget (requested, adopted, and approved) for inclusion in the districtwide information portal

OpenDataMCPS. The portal is hosted by Socrata which provides the infrastructure for Montgomery County's open data initiative that facilitates the exchange of information between MCPS and the county.

- » OCTO upgraded OASIS to fulfill Board of Education policy, regulation, and procedural changes, as well as Maryland state and federal government-mandated changes. These upgrades included modifications to the Special Education Services module to comply with Maryland State Department of Education (MSDE)-mandated changes to the IEP, structural enhancements to enable broader browser support, and modifications to the accommodations module to support PARCC testing.
- » OCTO fully implemented the myMCPS Scheduler to develop the master schedules. This upgrade enables each school to plan and complete its master schedule, using a web-based interface that provides improved accessibility and transparency for all users. Students have the ability to enter course requests through the online portal, improving the accuracy and efficiency for master schedulers during articulation and master schedule development. Additionally, the upgrade enabled better management and definition of courses and control of their availability.
- » OCTO continues to expand and enhance the usefulness of key data management solutions. This includes identifying, developing, and implementing industry-leading database solutions that best meet the needs of schools and offices. The prevalence of data-driven applications and reporting underpins the importance of technology as MCPS works to provide solutions that meet or exceed the expectations of 21st century learners and educators.

### **OVERVIEW OF BUDGET CHANGES**

#### FY 2017 Recommended Budget

The FY 2017 recommended budget for this office is \$4,651,694, a decrease of \$47,438 from the current FY 2016 budget. An explanation of this change follows.

#### Same Service Level Changes—(\$30,426)

#### Continuing Salary Costs—\$22,586

There is an increase of \$22,586 for continuing salary costs for current employees. This amount is the cost associated with the salary step and general wage adjustment (GWA) of 2.0 percent that eligible employees will receive on September 3, 2016. In addition, all eligible employees who did not receive a step increase in FY 2012 due to the negotiated deferral of step increases will receive one additional step on the salary schedule effective March 4, 2017. The amount also includes the annualized cost of the FY 2016 salary step and 2.0 percent GWA employees received on October 17, 2015.

# *Realignments to Meet Expenditure Requirements and Program Priorities—(\$53,012)*

There are a number of realignments budgeted to address priority spending needs within this office. There is a decrease in this office's budget of \$43,555 for telecommunications equipment, \$3,000 for public phones, and \$100 for local travel mileage reimbursement, with a corresponding increase of \$46,655 for internet/telephone provider fees. Additionally, there is a realignment of a 1.0 FTE position and \$66,522 to the Department of Technology Integration and Support. Lastly, from the Department of Infrastructure and Operations, there is a realignment of \$5,834 to contractual maintenance, along with a realignment of \$7,676 for an administrative secretary III position.

#### **Program Efficiencies and Reductions**—(\$17,012)

The FY 2017 recommended budget for this office includes a comprehensive effort to identify potential program reductions and efficiencies. Stakeholders including community partners and employee union representatives participated in the program efficiencies and reduction process.

There is a reduction of \$4,504 for contractual maintenance, \$2,508 for software, and \$10,000 for dues, registrations and fees. From the reduction in contractual maintenance, this office will no longer use the Accessdata FTK Toolkit, which will not have any impact on the operation of the department. Furthermore, as a result of a decrease in the amount of user licenses, this office is able to take a reduction in software with no impact to operations. Lastly, staff within this department will reduce the amount of conferences attended throughout the year in order to reduce the amount of registration expenses/fees.

# Office of the Chief Technology Officer - 411

Sherwin A.	Collette,	Chief	Technology	Officer
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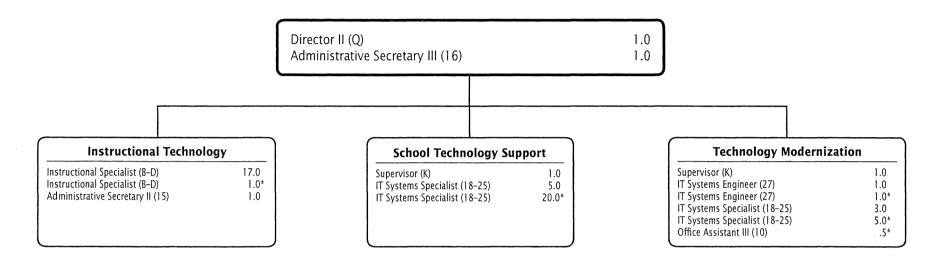
Description	FY 2015 Actual	FY 2016 Budget	FY 2016 Current	FY 2017 Request	FY 2017 Change
01 Salaries & Wages					
Total Positions (FTE) Position Salaries	6.000 \$580,371	7.000 \$656,953	7.000 \$656,953	6.000 \$620,693	(1.000) (\$36,260)
Other Salaries					
Summer Employment Professional Substitutes Stipends Professional Part Time					
Supporting Services Part Time Other					
Subtotal Other Salaries					
Total Salaries & Wages	580,371	656,953	656,953	620,693	(36,260)
02 Contractual Services					
Consultants Other Contractual		469,725	469,725	471,055	1,330
Total Contractual Services	919,287	469,725	469,725	471,055	1,330
03 Supplies & Materials					
Textbooks Media					
Instructional Supplies & Materials Office Other Supplies & Materials		10,799 97,063	10,799 97,063	10,799 51,000	(46,063)
Total Supplies & Materials	6,775	107,862	107,862	61,799	(46,063)
04 Other					
Local/Other Travel Insur & Employee Benefits		26,216	26,216	16,116	(10,100)
Utilities Miscellaneous		2,803,971 634,405	2,803,971 634,405	2,847,626 634,405	43,655
Total Other	3,571,781	3,464,592	3,464,592	3,498,147	33,555
05 Equipment					
Leased Equipment Other Equipment					
Total Equipment					
Grand Total	\$5,078,214	\$4,699,132	\$4,699,132	\$4,651,694	(\$47,438)

## Office of the Chief Technology Officer - 411

Sherwin A. Collette, Chief Technology Officer

САТ	DESCRIPTION	10 Mon	FY 2015 ACTUAL	FY 2016 BUDGET	FY 2016 CURRENT	FY 2017 REQUEST	FY 2017 CHANGE
1	Chief Technology Officer		1.000	1.000	1.000	1.000	
1	N Asst. to Assoc Supt		1.000	1.000	1.000	1.000	
1	25 Fiscal Specialist II		1.000	1.000	1.000	1.000	
1	17 Admin Services Manager I		1.000	1.000	1.000	1.000	
1	16 Administrative Secretary III		1.000	1.000	1.000	1.000	
1	16 Fiscal Assistant III		1.000	1.000	1.000	1.000	
1	15 Administrative Secretary II			1.000	1.000		(1.000)
	Total Positions		6.000	7.000	7.000	6.000	(1.000)

## **Department of Technology Integration and Support**



Chapter 8 - 10

F.T.E. Positions 31.0

(\*In addition, there are 27.5 positions funded by the Capital Budget)

#### FY 2017 OPERATING BUDGET

**MISSION** The mission of the Department of Technology Integration and Support (DTIS) is to lead the selection of innovative technologies in K-12 environments and lead the development of high-quality professional development that promotes the effective integration of technology in teaching and learning environments and excellence in teaching and learning, as well as provide technical support to schools while maintaining the operational readiness of new and existing hardware and software. This is accomplished by building the capacity of administrative, instructional, and support services staff through high-quality, differentiated, and job-embedded professional development to support the implementation of new and existing technologies in schools and offices.

### **MAJOR FUNCTIONS**

# Leadership, Professional Development, and Innovative Technologies

DTIS accomplishes its mission by working closely with school leadership to support school improvement plans with technology strategies; designing, developing, and delivering high-quality professional development on systemwide applications to support teaching and learning; using technology to facilitate and enhance professional learning communities; collaborating with Montgomery County Public Schools (MCPS) offices and schools to identify needs for which technology solutions can be applied; and developing, distributing, and supporting interactive blended learning opportunities for staff and students. The department provides leadership and program management for the implementation of new technologies in schools to increase teacher capacity. DTIS manages the Center for Technology Innovation, which is the school system's primary technology training facility for all staff. The department leads the implementation of the MCPS Strategic Technology Plan and plans, coordinates, and implements the Technology Modernization program. DTIS consists of a team that provides professional development and coaching to teachers and MCPS staff on the integration of technology with teaching and learning, as well as the Technology Innovation Unit that is charged with evaluating new technologies and planning for the ordering and distribution of these technologies.

# Professional Development on the Integration of Technology

The team of instructional technology specialists provides on-site, centralized, and web-based professional development using the Analysis, Design, Development, Implementation, and Evaluation instructional system design model for school and office staff on skills and strategies needed

for data-driven decision making and integrating technology into instructional and management practices. Professional development, including Google Apps for Education, mobile technologies, myMCPS, assessment technologies, communications applications, curriculum and course management platforms, instructional applications, and electronic resources will enhance both instructional and managerial practices. Whenever feasible, this team employs a job-embedded approach to professional development when working with school staff to increase technological pedagogical content knowledge as it relates to each teacher's implementation of the curriculum. The use of webinar and collaboration site technologies facilitates professional learning communities that bring together job-alike professionals from across the county. The team develops online training opportunities using best-practice technology solutions and methodologies, translates application functions into MCPS business practices, and researches and develops the latest instructional resources and software. This group collaborates with school leadership and identifies targeted, exemplary technology integration practices. Staff also helps identify hardware, software, and electronic resources to support school-improvement objectives and provide support and training to administrators and instructional and support staff. This team also supports the use of 21st century interactive classroom technologies to create and strengthen inclusive, diverse community-centered classrooms that foster a culture of inquiry, respect, and risk-taking so that all students are empowered to participate as full citizens in meaningful learning communities.

# Selection, Testing, and Provisioning of Innovative Technologies

The Technology Innovation Unit continuously collaborates with schools and offices to understand interests and needs and gathers requirements from stakeholders. The unit cultivates strategic partnerships with vendors who focus on improving technology products, services, prices, quality, and on-time delivery. The team oversees the testing of products and configurations prior to deployment to schools to ensure product reliability and effective ongoing operations in every school. Staff also keeps abreast of emerging technology trends and products and assesses their applicability in the educational environment. Educationally appropriate products are evaluated to determine if the product meets identified needs, and high-level tests are performed to assess compatibility with the MCPS technology infrastructure. This team manages the Google Apps for Education configurations and administration and integration with other systems. The team also oversees a program to refurbish computers in schools where technology is four years old, in response to the change from a four-year to a five-year replacement cycle that was put in place temporarily as a result of fiscal challenges. This unit maximizes the technology investment by reassigning older technologies and equipment to single-purpose, less demanding, yet important functions in the schools. Examples of reassignments include door card readers, achievement series scan stations, visitor management systems, Fluency and Automaticity through Systematic Teaching with Technology (FASTT) Math, and Read 180.

Further, the unit oversees the planning and implementation of Chromebooks, tablets, desktops, laptops, and interactive whiteboard technology in connection with redefining 21st century learning spaces. Additionally, the unit collects online data for updating and maintaining the asset management system and software license compliance. This unit supports centralized distribution of software updates, service packs, license keys, and enterprise systems management.

#### School Technology Support

The School Technology Support (STS) team consists of firstand second-level information technology support specialists (ITSS). The ITSS group is responsible for network administration; server, workstation, and printer maintenance and repair; and software installation and upgrades, including visitor management and school access control systems. The team's work assignment includes all elementary schools, all middle schools, and five special schools. This group routinely partners with administrators, teachers, media specialists, and central services staff to prepare for distance learning, online testing, and other events that require technical assistance. They also participate in project management in support of school initiatives. The workload of the STS team is monitored through the Unicenter Service Desk (USD) issue tracking system, which allows the supervisors to adjust resource allocation needs more effectively. Although USD is the major source of requests for service and support, the team also receives communications through e-mail, telephone, routine and emergency site visits, and internal requests for more advanced help to resolve problems. The STS team works proactively to identify industry best practices in order to improve customer service.

### ACCOMPLISHMENTS AND INITIATIVES

- » The Technology Modernization initiative replaced approximately 10,000 computers in 54 schools, two of which were new or newly renovated. In addition, 13,000 Chromebooks were distributed to these schools, in support of the implementation of the MCPS Strategic Technology Plan.
- » During this school year, DTIS configured and integrated 40,000 Chromebook laptops in schools across the district. Targeted grade levels included Grades 3, 5, 6, and high school social studies. Google Apps for Education accounts were synched with Active Directory, allowing coordination at the identity management level to automatically provision and decommission user accounts as users enroll and unenroll in the district. Year 2 of the 21st Century Classroom Initiative is currently under way, where additional devices will be distributed to Grade 4 classrooms and select middle school classrooms.
- » Throughout the school year, instructional technology specialists provided schools and offices with ongoing services and support for all technology systems, including the Instruction Center, myMCPS, Measures of Academic Progress (MAP), mClass, standards-based

grading and reporting, Partnership for Assessment of Readiness for College and Careers (PARCC), Google Apps for Education, using data to inform instruction, the electronic grade book, Financial Management System, Human Resources Information System, MCPS Careers, Professional Development Online, Connect-ED, Fortis, the Transportation Information Management System, and the Facilities Availability and Emergency Status Reporting. The Office of the Chief Technology Officer instructional technology specialists conducted more than 600 professional development sessions across 110 different topics. They provided job-embedded professional development for system initiatives and regularly supported collaborative grade-level planning to all elementary schools and content-specific planning at the secondary level.

- » During the summer, DTIS designed and facilitated more than 120 professional development and work sessions, representing more than 60 topics, including grading and reporting, integrating technology with instruction, using MAP data to inform instruction, PDO, and Edline. More than 3,000 teachers and MCPS staff attended these trainings this past summer. In addition, DTIS created and hosted two teacher conferences (Innovate, Integrate, Collaborate), a supporting services conference, and a leadership series for school-based leaders—all focused on integrating technology in teaching and learning and using data to inform instruction.
- » This past summer, instructional technology specialists worked with more than 1,200 teachers as they earned credit creating interactive lessons that integrate technology with Curriculum 2.0. These teachers participated in a week-long course designed to help them plan for meaningful instruction using digital content, multimedia formats, interactive applications, and technology resources as they teach Curriculum 2.0. Courses focused on using Google Apps for Education to create interactive learning experiences for students.
- » The department provides project management on several assessment technologies: the MCPS Assessment Program—Primary Reading 3D; Measure of Academic Progress (Reading, Math, and Primary); PARCC, HSA, and WIDA, and Achievement Series. Project management also is provided for Discovery Education Streaming, which provides schools with access to a vast on-demand video library to support instruction.
- » This past summer, specialists partnered with teachers to create 23 high school courses online, using the hybrid model. These courses were offered during the summer as part of a pilot program to increase student participation and performance.
- » DTIS is creating blended learning environments through the integration of technology, interactive applications, and virtual community spaces. These blended environments help meet the needs of students in regular instructional programs as well as alternative programs, credit recovery, summer school, and home and hospital teaching circumstances.

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» In FY 2013, STS staff resolved 37,700 reported problems. ITSS staffing is a team model with primary and backup assignments, based on geography and technology inventory for each school. The team incorporates a "Lifeboat" system to rapidly deploy replacement servers to schools, restoring access to technology and minimizing downtime.

### PERFORMANCE MEASURES

Performance Measure: Mastery of Training Outcomes

FY 2015	FY 2016	FY 2017
Actual	Estimate	Recommended
94%	96%	97%

**Explanation:** Percentage of attendees reporting mastery of all stated training session outcomes, as indicated on post-training survey.

**Performance Measure:** Center of Technology Innovation Satisfaction

FY 2015	FY 2016	FY 2017
Actual	Estimate	Recommended
93%	93%	94%

**Explanation:** Percentage of guest instructors that rate their experience as excellent or very good, as reported via online survey.

**Performance Measure:** Percentage of customers who indicate satisfaction with the level of knowledge demonstrated by their ITSS.

FY 2015	FY 2016	FY 2017
Actual	Estimate	Recommended
88%	88%	90%

**Explanation:** This measure reflects the level of customer satisfaction with the services provided by the assigned technologist, according to customers who reply to the customer satisfaction survey cards. This percentage reflects the satisfaction rate of those who responded through the survey cards.

### OVERVIEW OF BUDGET CHANGES

#### FY 2016 Current Budget

The current FY 2016 budget for department has changed from the budget adopted by the Board of Education on June 16, 2015. The change is a result of a realignment of \$10,000 for contractual services, \$16,773 for office/program supplies, \$9,050 for local travel mileage reimbursement, and \$225 for dues, registrations, and fees from the Department of Infrastructure and Operations.

#### FY 2017 Recommended Budget

The FY 2017 recommended budget for this department is \$3,600,224, an increase of \$53,582 over the current FY 2016 budget. An explanation of this change follows.

#### Same Service Level Changes—\$126,083

#### Continuing Salary Costs—\$118,384

There is an increase of \$118,384 for continuing salary costs for current employees. This amount is the cost associated with the salary step and general wage adjustment (GWA) of 2.0 percent that eligible employees will receive on September 3, 2016. In addition, all eligible employees who did not receive a step increase in FY 2012 due to the negotiated deferral of step increases will receive one additional step on the salary schedule effective March 4, 2017. The amount also includes the annualized cost of the FY 2016 salary step and 2.0 percent GWA employees received on October 17, 2015.

#### Realignments to Meet Expenditure Requirements and Program Priorities—\$7,699

Realignments are budgeted to address priority spending needs for this department. There is a realignment to this department of a 1.0 FTE position and \$71,257 from the Office of the Chief Technology Officer. In addition, there is a realignment of a 1.0 FTE position and \$63,558 from this department to the Department of Infrastructure and Operations.

#### Program Efficiencies and Reductions—(\$72,501)

The FY 2017 recommended budget for this department includes a comprehensive effort to identify potential program reductions and efficiencies. Stakeholders including community partners and employee union representatives participated in the program efficiencies and reduction process.

There is a reduction of a 1.0 FTE position and \$72,501 for an IT Systems Specialist position. Responsibilities will be absorbed by the remaining 3.0 FTE IT Systems Specialist positions in this department.

## Department of Technology Integration and Support - 435/422/424/428 Dr. Kara B. Trenkamp, Director II

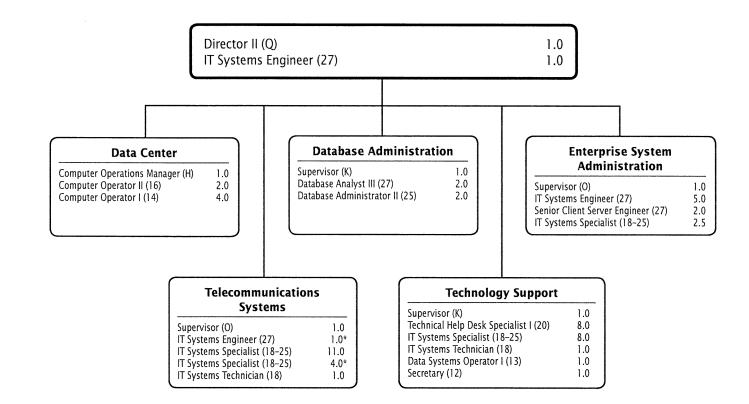
Description	FY 2015 Actual	FY 2016 Budget	FY 2016 Current	FY 2017 Request	FY 2017 Change
01 Salaries & Wages					
Total Positions (FTE) Position Salaries	35.200 \$3,325,466	32.000 \$3,397,171	32.000 \$3,397,171	31.000 \$3,449,153	(1.000) \$51,982
Other Salaries					
Summer Employment Professional Substitutes Stipends Professional Part Time Supporting Services Part Time		80,000	80,000	81,600	1,600
Other Subtotal Other Salaries					1,600
Total Salaries & Wages	3,431,235	3,477,171	3,477,171	3,530,753	53,582
02 Contractual Services					
Consultants Other Contractual		3,900	13,900	13,900	
Total Contractual Services	141,719	3,900	13,900	13,900	
03 Supplies & Materials					
Textbooks Media Instructional Supplies & Materials					
Office Other Supplies & Materials		6,780 2,000	10,292 15,261	10,292 15,261	
Total Supplies & Materials	24,968	8,780	25,553	25,553	
04 Other					
Local/Other Travel Insur & Employee Benefits Utilities Miscellaneous		20,743	30,018	30,018	
Total Other	22,694	20,743	30,018	30,018	
05 Equipment					
Leased Equipment Other Equipment					
Total Equipment					
Grand Total	\$3,620,616	\$3,510,594	\$3,546,642	\$3,600,224	\$53,582

## Department of Tech. Integration & Support - 435/424/428/422

Dr. Kara B. Trenkamp, Director II

	Total Positions	35.200	32.000	32.000	31.000	(1.000)
	Subtotal	5.000				
1	12 Secretary	1.000				
1	15 Administrative Secretary II	1.000				
1	25 IT Systems Specialist	1.000				
1	27 IT Systems Engineer	1.000				
1	P Director I	1.000				
	422 Division of Technology Support					
	Subtotal	4.000	7.000	7.000	5.000	(2.000)
1	12 Secretary		1.000	1.000		(1 000)
1	25 IT Systems Specialist	3.000	4.000	4.000	3.000	(1.000)
1	27 IT Systems Engineer		1.000	1.000	1.000	
1	K Supervisor	1.000	1.000	1.000	1.000	
	428 Technology Modernization			7. 1. 19. V - 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 -		
	Subtotal	6.000	6.000	6.000	6.000	
10	25 IT Systems Specialist	5.000	5.000	5.000	5.000	
10	K Supervisor	1.000	1.000	1.000	1.000	
	424 School Technology Support					
	Subtotal	20.200	19.000	19.000	20.000	1.000
2	14 Administrative Secretary I	1.000				
1	15 Administrative Secretary II				1.000	1.000
2	16 Administrative Secretary III	1.000	1.000	1.000	1.000	
3	BD Instructional Specialist	17.200	17.000	17.000	17.000	
2	Q Director II	1.000	1.000	1.000	1.000	
	435 Department of Technology Integration and S	Sur				
CAT	DESCRIPTION Mo		BUDGET	CURRENT	REQUEST	CHANGE
		FY 2015	FY 2016	FY 2016	FY 2017	FY 2017

## **Department of Infrastructure and Operations**



F.T.E. Positions 57.5

(\*In addition, there are 5.0 positions funded by the Capital Budget)

FY 2017 OPERATING BUDGET

**MISSION** The mission of the Department of Infrastructure and Operations (DIO) is to manage the enterprise-wide technical systems, including the data center, network connections, e-mail, and telephones and to facilitate the implementation of effective, secure, and reliable hardware and software solutions. This department also provides technical assistance to schools and offices and is responsible for providing the operational support for administrative data and reports aligned with the Foundation: Organizational Effectiveness, Building our Future Together, the MCPS strategic planning framework.

### **MAJOR FUNCTIONS**

#### **Department Management**

DIO accomplishes its mission through seven units-Database Administration, Data Center, Telecommunications, Network Security, Enterprise Systems Administration, Help Desk, and Technical Services and Support. All seven units work collaboratively to ensure that Montgomery County Public Schools' (MCPS) technology systems are designed and operated in the most efficient and secure manner possible. The director's office manages major projects within DIO and provides collaborative support to the other departments' project teams. To ensure that these services are provided in an effective, efficient, and systemic manner, the director's office coordinates the work efforts of the technical resources and subject-matter experts for department projects, following the shared project and process-management methods that are common to all Office of the Chief Technology Officer (OCTO) project teams. The director's office ensures that project documentation is kept in an accessible place and that quality assurance processes are created, documented, and communicated for maximum efficiency.

#### **Database Administration**

The Database Administration Unit is responsible for creating, maintaining, backing up, recovering, and monitoring enterprise databases (Online Administrative Student Information System, online student look-up, period-by-period attendance, grading and reporting, Financial Management System, payroll, and retirement) for effective use in an operational environment. This includes all student and business systems.

#### **Data Center**

The Data Center operates, monitors, and provides technical support for the MCPS central servers and related equipment (high-speed printers and scanners) to allow 24-hour access to essential student and administrative databases and to run applications including payroll, student attendance and enrollment, retirement, asset management, financial management, report cards, and online materials ordering application systems. The unit is responsible for maintaining the data center facility with round-the-clock sensors to monitor power, temperature, humidity, fire, and other mechanical functions.

#### **Telecommunications Services**

The Telecommunications Services Unit designs, installs, and supports local- and wide-area networks (LAN/WAN), which include wired and wireless networks in schools, central services, and field offices. The unit maintains all telephone systems-wired, wireless, and cellular, including school and office voice mail systems, data transmission lines, and voice circuits. The Telecommunications Services Unit supports converged telephony, which combines voice, data, cellular, and video on data circuits. Telephony specialists evaluate current system needs while reviewing telecommunications trends. To improve MCPS telecommunications capabilities, staff is responsible for researching, planning, expanding, and modernizing existing systems as both technology and location needs evolve. The unit monitors and maintains the MCPS WAN, which is implemented by connections through several carriers, including the county's fiber-optic network (FiberNet). The connection to the Internet and county government, the security firewall, and the intrusion detection/ prevention equipment-along with the data wiring at new and modernized construction projects, including the telephone and cable television distribution systems-also are the responsibility of this unit. Staff carefully reviews telecommunication invoices, including wireless and data connection lines, to ensure accuracy of payment.

#### **Network Security**

The Network Security Unit is responsible for the Internet protection systems required by the *Children's Internet Protection Act* and *Protecting Children in the 21st Century Act*. This unit also monitors and investigates all violations of MCPS Regulation IGT-RA and processes all legal eDiscovery requests. Also, this unit is responsible for the business continuity of the data center functions, and maintains an off-site recovery location. This unit applies for rebates for eligible telecommunications, internal connection, and Internet-related costs under the *Schools and Libraries Universal Service E-Rate Program funded under the Telecommunications Act* of 1996.

#### **Enterprise Systems Administration**

The Enterprise Systems Administration Unit designs systems architecture for new or upgraded applications and installs, manages, and supports enterprise servers that house the technology systems used by staff and students as well as parents. The unit is responsible for the efficient operation of the systems as well as preventive security measures. The Enterprise Systems Administration Unit also is responsible for systemwide user account management for the network and all application systems, including the student data system, financial management, human resources systems, and the myMCPS portal, to enable appropriate access for MCPS users. In addition, the unit manages the operation of the MCPS e-mail system and is responsible for all e-mail system upgrades and implementations. The unit also is responsible for the operation and maintenance of Storage Area Networks, which provide a central repository for the storage of electronic data and databases. Enterprise Systems Administration staff is responsible for researching emerging industry trends and standards and recommending enhancements that will improve the effectiveness and efficiency of enterprise technology systems. Enterprise-wide data backup solutions are implemented and managed by this unit, including backing up central data as well as remotely backing up school data. The unit ensures that systems can be recovered quickly in the event of mechanical failure or disaster.

#### Help Desk

The Help Desk supports a wide range of technology infrastructure, hardware, and more than 100 enterprise-wide and school- and office-based applications. Help Desk specialists attend ongoing training to prepare them to resolve basic network issues, support new application inquiries, and respond to software questions, including questions about the Microsoft Office Suite. This team also attends operation and application training to ensure that the most current information available is shared with MCPS staff. The Help Desk team routinely researches and collaborates with other technologists in order to post useful information and timely solutions to frequently asked questions on the Help Desk website as well as to a self-service database, Knowledge Tools. The Help Desk collaborates with appropriate staff and departments to create services and operation-level agreements that specifically outline a comprehensive support plan for all MCPS enterprise applications.

#### **Technical Services and Support**

The Technical Services and Support (TSS) team is responsible for computer software and hardware support in nonschool-based offices. The TSS group also works with the school-based technical staff to maintain the closed-circuit security camera systems and access control systems for the Department of School Safety and Security. Support includes integration services, application deployment, network administration, computer image support, and on-site equipment repair and upgrades. TSS maintains a parts database and inventory for both warranty and nonwarranty maintenance of supported equipment. The team sets up and provides technical support for computers and multimedia equipment used for MCPS meetings and activities. Audiovisual (AV) equipment support includes maintaining an equipment pool for all of MCPS, collaborating with school and media center staff on establishing AV standards and addressing AV needs, and providing warranty repair of equipment purchased from the AV bid list. TSS staff also collaborates with the Procurement Unit and MCPS television staff in reviewing and making recommendations on all multimedia equipment. Unicenter Service Desk (USD) administration is provided by members of the TSS team as well as the STS team. This team is responsible for applying application upgrades and maintaining USD instances for the Employee and Retiree Service Center (ERSC), the offices of Shared Accountability, Curriculum and Instructional Programs, OCTO, and the Division of Family and Community Partnerships. This team also is responsible for extracting data from the USD issue tracking system to design customized reports for schools and central services when information is requested.

### ACCOMPLISHMENTS AND INITIATIVES

- » The continuing rapid advancement of technology requires staff to research new and emerging technologies, to work continuously with technology users in reassessing which technologies best meet instructional and administrative needs, and to plan how to modermize or replace aging and obsolete equipment and software. The MCPS Strategic Technology Plan calls for a robust and resilient cyber infrastructure that ensures anytime anywhere-access to learning resources, and the virtual community is a fundamental requirement for effective digital learning.
- » The department installed and implemented 51 schoolwide wireless systems in the schools that did not yet have that capability, aligning with the MCPS Strategic Technology Plan.
- » The department provided large-scale printing services for both student and business systems, including approximately 156,000 report cards, 19,000 related administrative reports, and 30,000 interim reports per reporting period, as well as approximately 700 employee paychecks (employee paystubs are available electronically via ePaystub, eliminating the need for paystub printing for employees using direct deposit) and 31,000 timesheets per pay period. The Data Center staff collaborated with the Office of Shared Accountability's Testing Unit to print, fold, and seal 90,000 Maryland School Assessment and 60,000 High School Assessment reports. The staff also collaborated with the Applied Research Unit to print, fold, and seal 210,000 school-based staff and parent surveys. The staff also scan School Leadership surveys from the MCPS staff, students and community leaders for the hiring requirements of incoming school principals and assistant principals. The department continues to extend to users applications and data via cloudbased technologies. E-mail was migrated entirely to the cloud, eliminating the need to maintain costly and aging servers in the data center and increasing access to e-mail and productivity applications from within the school network as well as from home. Similarly, research is being conducted into the options of "elastic" computing models, which introduce efficiencies into the technology environment by expanding and shrinking the server (capacity) footprint to exactly match user demand.
- » The department has worked closely with other departments throughout OCTO to expand the myMCPS system in support of improved functionality and the addition of parent/student/teacher collaboration features.

- » A new identity management system has been deployed and improves the management of user accounts and access to disparate systems throughout the enterprise.
- » During Fiscal Year (FY) 2015, almost all MCPS elementary schools were connected to the county's Fiber-Net system, for faster and more reliable WAN and Internet connectivity. Internet availability continued to be more than 99 percent overall.
- » New telephone systems were installed in two high schools, three middle schools, and two elementary schools, using Voice-over-IP (VoIP)-capable phone systems. These VoIP systems provide additional services to the users, such as caller ID and call forwarding, and significantly reduce the expenses of inside wiring by using either existing data lines or running one data line throughout a school, as opposed to a large number of voice lines per handset. MCPS anticipates that 2,500 work requests for moves, additions, and changes for schools and administrative offices will be completed in FY 2017. The Telecommunications Team continued its management of the cell phone and data device programs, refreshing phone equipment for emergency phones in portable classrooms and school emergency kits.
- » In FY 2015, of the 106,543 requests logged by the system, the MCPS Help Desk closed 33,004 requests within two hours of the call. In addition, it processed another 39,744 tickets that were submitted by other MCPS staff via the web or e-mail and handled by the eight-member team. The supervisor and team lead of the Help Desk are proactive in using the issue tracking software to spot trends. They routinely use this information to provide first-level troubleshooting before escalating an issue to second-level support staff, usually resolving the customer's problem within the Help Desk without escalation. The Help Desk team works continuously to improve customer service by collaborating with other teams in OCTO and by incorporating user feedback into daily operations. The team participates in the development of customized support plans and service- and operation-level agreements that are essential to the seamless delivery of service to our customers. This team meets with various project teams periodically to prepare training documents and assist in training designated staff on new enterprise applications. The Help Desk maintains the Help Desk website and provides users with timely solutions to frequently asked questions.
- » In FY 2015, the TSS team closed 534 emergency requests, handling 74 percent within the 12-hour service-level agreement (SLA) performance measure. The TSS team also handled 3,487 normal priority calls, meeting the three-day SLA performance measure 56 percent of the time. The total number of requests of all priorities for this time period was 4,157.

#### **PERFORMANCE MEASURES**

**Performance Measure:** Percentage of uptime for the WAN

FY 2015	FY 2016	FY 2017
Actual	Estimate	Recommended
99.95%	99.95%	99.97%

**Explanation:** This is a measure of availability of switches, routers, and vendor-supplied lines that provide access to schools, offices, and the ISP connection.

**Performance Measure:** Percentage of uptime for e-mail system

FY 2015	FY 2016	FY 2017
Actual	Estimate	Recommended
99.9%	99.9%	99.9%

**Explanation:** This measure indicates the amount of time e-mail is available to end users, other than regularly scheduled maintenance hours.

**Performance Measure:** Percentage of phone requests both opened and closed by the Help Desk staff on first customer contact (as measured by closure in USD issue tracking system within two hours).

FY 2015	FY 2016	FY 2017
Actual	Estimate	Recommended
84%	85%	85%

**Explanation:** This measure is an indication of the timeliness of problem resolution by Help Desk staff within the SLA.

**Performance Measure:** Percentage of emergency tickets closed within 48 hours for non-school-based offices.

FY 2015	FY 2016	FY 2017
Actual	Estimate	Recommended
80%	83%	85%

**Explanation:** This measure reflects the number of tickets closed within the 48 hours, as they were opened.

## **OVERVIEW OF BUDGET**

#### FY 2016 Current Budget

The current FY 2016 budget for this department has changed from the budget adopted by the Board of Education on June 16, 2015. The change is a result of a realignment of \$10,000 from contractual services, \$16,773 from office/program supplies, \$9,050 from local travel mileage reimbursement, and \$225 from dues, registrations, and fees to the Department of Technology Integration and Support.

#### FY 2017 Recommended Budget

The FY 2017 recommended budget for this department is \$8,323,664, a decrease of \$224,508 from the current FY 2016 budget. An explanation of this change follows.

#### Same Service Level Changes—(\$66,962)

#### Continuing Salary Costs—\$100,140

There is an increase of \$100,140 for continuing salary costs for current employees. This amount is the cost associated with the salary step and general wage adjustment (GWA) of 2.0 percent that eligible employees will receive on September 3, 2016. In addition, all eligible employees who did not receive a step increase in FY 2012 due to the negotiated deferral of step increases will receive one additional step on the salary schedule effective March 4, 2017. The amount also includes the annualized cost of the FY 2016 salary step and 2.0 percent GWA employees received on October 17, 2015.

# *Realignments to Meet Expenditure Requirements and Program Priorities—(\$167,102)*

There are a number of realignments budgeted to address priority spending needs within this department. There is a realignment of a 1.0 FTE position and \$63,558 from the Department of Technology Integration and Support to fund a secretary position. Furthermore, there is a realignment of 2.0 FTE positions and \$197,063 to the Department of Learning Management Systems for a 1.0 FTE technical analyst position, and a 1.0 FTE IT systems specialist position.

Additionally, \$91,871 is realigned from lease/purchase funding, of which \$5,118 is for program supplies, \$80,919 is for contractual maintenance, and \$5,834 is realigned from this department to the Office of the Chief Technology Officer. Lastly, as a technical adjustment of position salaries, there is a realignment of \$27,763 from this department's budget. The Office of the Chief Technology Officer, the Department of Business Information Services, and the Department of Learning Management Systems each receive \$7,676, and the Department of Learning Management Systems receives \$4,735.

#### Program Efficiencies and Reductions—(\$157,546)

The FY 2017 recommended budget for this department includes a comprehensive effort to identify potential program reductions and efficiencies. Stakeholders including community partners and employee union representatives participated in the program efficiencies and reduction process.

There is a reduction of a 1.0 FTE administrative secretary position and \$46,762, a 1.0 FTE supervisor position and \$91,189, and \$19,595 for supporting services part-time salaries. The responsibilities that would be handled by the administrative secretary position, the supervisor position, and the supporting services part-time will be absorbed by other employees within the Department of Infrastructure and Operations, as well as units in this department.

## Department of Infrastructure & Operations - 446/423/433/434/447/448/451

Charles L. McGee, Director II

Description	FY 2015 Actual	FY 2016 Budget	FY 2016 Current	FY 2017 Request	FY 2017 Change
01 Salaries & Wages					
Total Positions (FTE) Position Salaries	59.500 \$4,904,406	60.500 \$5,506,535	60.500 \$5,506,535	57.500 \$5,306,643	(3.000) (\$199,892)
Other Salaries Summer Employment Professional Substitutes Stipends Professional Part Time		00.440	20.440		(40.000)
Supporting Services Part Time Other		33,142 7,526	33,142 7,526	14,210 7,676	(18,932) 150
Subtotal Other Salaries	24,595	40,668	40,668	21,886	(18,782)
Total Salaries & Wages	4,929,001	5,547,203	5,547,203	5,328,529	(218,674)
02 Contractual Services					
Consultants Other Contractual		66,660 1,901,252	66,660 1,891,252	66,660 1,972,171	80,919
Total Contractual Services	1,489,604	1,967,912	1,957,912	2,038,831	80,919
03 Supplies & Materials					
Textbooks Media Instructional Supplies & Materials					
Office Other Supplies & Materials		13,552 276,910	10,040 263,649	10,040 268,767	5,118
Total Supplies & Materials	258,714	290,462	273,689	278,807	5,118
04 Other					
Local/Other Travel Insur & Employee Benefits Utilities Miscellaneous		13,658	4,383	4,383	
Total Other	7,265	13,658	4,383	4,383	
05 Equipment					
Leased Equipment Other Equipment		764,985	764,985	673,114	(91,871)
Total Equipment	646,936	764,985	764,985	673,114	(91,871)
Grand Total	\$7,331,520	\$8,584,220	\$8,548,172	\$8,323,664	(\$224,508)

## Dept. of Infrastructure & Operations- 446/423/433/447/448/451/434

Charles L. McGee, Director II

САТ		0 Ion	FY 2015 ACTUAL	FY 2016 BUDGET	FY 2016 CURRENT	FY 2017 REQUEST	FY 2017 CHANGE
	446 Dept of Infrastructure & Operations						
1	Q Director II		1.000	1.000	1.000	1.000	
1	27 IT Systems Engineer		1.000	1.000	1.000	1.000	
1	16 Administrative Secretary III		1.000	1.000	1.000		(1.000)
	Subtotal		3.000	3.000	3.000	2.000	(1.000)
	423 Technology Support						(
10			1 000	1 000	1 000	1 000	
10	K Supervisor		1.000	1.000	1.000	1.000	
10	25 IT Systems Specialist		7.000	8.000	8.000	8.000	
1	22 Technical Help Desk Spec II		2.000	0.000	0.000	0.000	
1	20 Technical Help Desk Spec I		6.000	8.000	8.000	8.000	
10	18 IT Systems Technician		1.000	1.000	1.000	1.000	
10	13 Data Systems Operator		1.000	1.000	1.000	1.000	1 000
1	12 Secretary					1.000	1.000
	Subtotal		18.000	19.000	19.000	20.000	1.000
	433 Telecommunications Systems						
10	O Supervisor		1.000	1.000	1.000	1.000	
10	25 IT Systems Specialist		11.000	11.000	11.000	11.000	
10	18 IT Systems Technician		1.000	1.000	1.000	1.000	
10	13 Fiscal Assistant I		1.000				
	Subtotal		14.000	13.000	13.000	13.000	
	447 Database Administration						
1	K Supervisor		1.000	1.000	1.000	1.000	
1	27 Database Analyst III		2.000	2.000	2.000	2.000	
1	25 Database Administrator II		2.000	2.000	2.000	2.000	
	Subtotal		5.000	5.000	5.000	5.000	
	448 Data Center						
1	H Computer Operations Mgr		1.000	1.000	1.000	1.000	
1	16 Computer Operator II Shift 2		1.000	1.000	1.000	1.000	
1	16 Computer Operator II Shift 3		1.000	1.000	1.000	1.000	
1	14 Computer Operator I Shift 1		2.000	2.000	2.000	2.000	
1	14 Computer Operator I Shift 2		1.000	1.000	1.000	1.000	
1	14 Computer Operator I Shift 3		1.000	1.000	1.000	1.000	
	Subtotal		7.000	7.000	7.000	7.000	
	451 Enterprise System Administration						
1				4 000	1.000	4 000	
1	O Supervisor		1 000	1.000	1.000	1.000	(4.000)
1	K Supervisor		1.000	1.000	1.000	0.000	(1.000)
1	27 Sr Client Server Engineer		2.000	2.000	2.000	2.000	
1	27 IT Systems Engineer		3.000	5.000	5.000	5.000	(1.000)
1	25 IT Systems Specialist		4.500	3.500	3.500	2.500	(1.000)

## Dept. of Infrastructure & Operations- 446/423/433/447/448/451/434

Charles L. McGee, Director II

САТ	DESCRIPTION	10 Mon	FY 2015 ACTUAL	FY 2016 BUDGET	FY 2016 CURRENT	FY 2017 REQUEST	FY 2017 CHANGE
	451 Enterprise System Administration						
1	25 Technical Analyst			1.000	1.000		(1.000)
	Subtotal		10.500	13.500	13.500	10.500	(3.000)
	434 Field Installation						
10	K Supervisor		1.000				
10	25 IT Systems Specialist		1.000				
	Subtotal		2.000				
	Total Positions		59.500	60.500	60.500	57.500	(3.000)

# **Department of Business Information Services**

Director II (Q)	1.0
Supervisor (K)	2.0
Application Developer III (27)	2.0
Development Project Manager (27)	3.5
Development Project Manager (27)	0.5*
Applications Developer II (25)	5.0
Technical Analyst (25)	1.0
IT Systems Specialist (18–25)	1.0
IT Systems Technician (18)	1.0
Administrative Secretary III (16)	1.0

F.T.E. Positions 17.5

(\*In addition, there is a 0.5 position funded by the Employee Benefits Trust Fund)

FY 2017 OPERATING BUDGET

**MISSION** The mission of the Department of Business Information Services (DBIS) is to plan, develop, implement, and support high-quality business solutions, contributing to the transformation of learning environments through the innovative integration of technology across all aspects of the school system.

### **MAJOR FUNCTIONS**

DBIS collaborates with offices, schools, and government agencies to promote and support Montgomery County Public Schools (MCPS) and the initiatives of the Office of the Chief Technology Officer by developing, implementing, and continuously improving business solutions. Based on goals and priorities, the department develops, purchases, implements, and supports complex solutions for the business of education. These solutions enable operational effectiveness that streamlines and enhances management for all stakeholders.

#### **Business Operational Technologies**

DBIS provides a variety of solutions that support school operations. The Transportation Information Management System supports the management of human and automotive resources used by MCPS. Fortis software provides MCPS with an electronic document management system that dramatically increases access to information previously available only on paper, such as personnel and student records. The Student Member of the Board election is supported with project management and implementation of a secure web-based voting system. The Capital Improvement Plan system, used by the Division of Long-range Planning and Division of Construction, maintains data essential for the development and publication of the Capital Improvements Program and the Educational Facilities Master Plan. The Destiny Library Management system provides schools with a centralized K-12 resource management tool. This system assists schools in working more efficiently, while creating an engaging and collaborative learning environment that promotes and supports student achievement.

#### **Human Capital Management Solutions**

DBIS implements and supports human capital management solutions, providing applications and systems to facilitate operational excellence in the delivery of services for human resource management, professional development, and career management. The Human Resources Information System (HRIS) integrates personnel, leave management, time accrual, payroll, and employee benefit functions that allow for effective management of information and resources. The Payroll Attendance and Collection System, an in-house-developed time and attendance system within the Lawson HRIS system, provides a seamless, and realtime integration with the HRIS system. The School Allocation Execution application provides school principals and staff with personnel and allocation information to support staffing and hiring decisions. Employee self-services provide online access to personal information, benefits, pay, and retirement planning. Lifeworks is the system used to manage and administer employee pension benefits. The Pen-Point website provides employees with retirement analysis features to assist in retirement planning. The Professional Development Online system is used for managing and monitoring MCPS employee training. MCPS Careers provides a web-based solution that automates the application and hiring process for MCPS-based position vacancies, and Career Pathways guides supporting services employees in career planning. The Substitute Employee Management System provides telephone and web access for school administrators and staff to enter teacher absences and for substitutes to obtain job assignments.

#### **Financial Management Solutions**

DBIS staff develops new functionalities for financial management solutions, in collaboration with schools and offices across the system, and is committed to delivering the highest level of operational performance and support. The Financial Management System integrates supply chain, finance, and budgeting functions, providing access to essential information and streamlining financial processes for schools and offices, service providers, and external agencies. School Funds Online is used in schools to manage Independent Activity Funds, providing real-time reporting and transactional information. In addition, a secure online system allows parents to view their students' financial account history and make electronic payments for school activity items, extracurricular activity fees, and summer school payments. The J. P. Morgan purchasing card used by schools and offices is supported in collaboration with the Procurement Unit, Division of Controller, and in partnership with the vendor. Integration with systems, including HRIS, purchasing card system, budgetary data, and the Destiny Library Manager, illustrates the focus on streamlining and enhancing financial management for all stakeholders. Budget processes are supported throughout the year with analysis and operational support and during the budget development process, providing salary projections based on negotiated agreements. Budget data is provided for OpenDataMCPS, on which citizens of Montgomery County have the ability to view all stages of the operating budget through an online portal. Project management is provided for the E-rate program that provides rebates on funds expended for eligible data transmission services, Internet access, and broadband internal connections.

### ACCOMPLISHMENTS AND INITIATIVES

» To ensure that MCPS maintains its status as a worldclass school system, DBIS continues to expand and enhance key operational management solutions. This includes identifying, developing, and implementing industry-leading software solutions that best meet the needs of schools and offices. The prevalence of web-based solutions underpins important technology decisions as MCPS works to provide solutions that meet or exceed the expectations of 21st century institutions.

- » Self-service access to view and update personal information through a one-stop online portal was implemented for employees. The services include the ability to view current benefits, make changes during the Open Enrollment window, access pay information, and link to retirement planning applications.
- » Elementary schools were provided with an online application for assigning staff for extracurricular activities (ECA) and associated processing of stipends and salary supplements. This online process streamlines the end-to-end process by allowing school administration to easily assign the ECA activities to employees and provides a work flow for approval by the principal. Completing and processing paper forms is eliminated and the automation of back-end processes facilitates maintenance of the assignments throughout the year. Planning is under way to provide this functionality to secondary schools.
- » Enhancements to facilitate changes in the administration of tax deferred annuities and health care insurance plan providers were implemented. Additionally, new federal requirements for employer reporting associated with the *Affordable Health Care Act* and for providing employees with IRS Form 1095-C, Employer-Provided Health Insurance Offer and Coverage, for the prior year were developed and implemented.
- » Budget data for all stages of the operating budget (requested, adopted, and approved) were prepared and provided for inclusion in the districtwide information portal OpenDataMCPS. The portal is hosted by Socrata which provides the infrastructure for Montgomery County's open data initiative that facilitates the exchange of information between MCPS and the county.

### **PERFORMANCE MEASURES**

**Performance Measure:** The percentage of software implemented without major defects

FY 2015	FY 2016	FY 2017
Actual	Estimate	Recommended
100%	100%	100%

**Explanation:** This measure indicates the percentage of software implemented that performs without error, based on design specifications.

**Performance Measure:** The percentage of systems/applications on a supported release level

FY 2015	FY 2016	FY 2017
Actual	Estimate	Recommended
68%	80%	89%

**Explanation:** This measure provides information for operational support and agility in enhancing the customer experience.

### **OVERVIEW OF BUDGET CHANGES**

#### FY 2017 Recommended Budget

The FY 2017 recommended budget for this department is \$3,325,609, a decrease of \$243,740 from the current FY 2016 budget. An explanation of this change follows.

#### Same Service Level Changes—(\$241,994)

#### Continuing Salary Costs—\$61,530

There is an increase of \$61,530 for continuing salary costs for current employees. This amount is the cost associated with the salary step and general wage adjustment (GWA) of 2.0 percent that eligible employees will receive on September 3, 2016. In addition, all eligible employees who did not receive a step increase in FY 2012 due to the negotiated deferral of step increases will receive one additional step on the salary schedule effective March 4, 2017. The amount also includes the annualized cost of the FY 2016 salary step and 2.0 percent GWA employees received on October 17, 2015.

#### *Realignments to Meet Expenditure Requirements and Program Priorities—(\$303,524)*

There are a number of realignments budgeted to address priority spending needs within this department. There is a realignment of \$9,000 for consultant services, \$294,379 for contractual maintenance, \$1,000 for program supplies, \$1,022 for local travel mileage reimbursement, \$1,216 for dues, registrations, and fees, and \$4,583 for lease/purchase funding to the Department of Learning Management Systems for contractual maintenance. Furthermore, there is a realignment of \$7,676 from the Department of Infrastructure and Operations to the administrative secretary III position account in this office, which is a part of a technical adjustment of position salaries.

#### Program Efficiencies and Reductions—(\$1,746)

The FY 2017 recommended budget for this department includes a comprehensive effort to identify potential program reductions and efficiencies. Stakeholders including community partners and employee union representatives participated in the program efficiencies and reduction process.

There is a reduction of \$659 for contractual maintenance, \$503 for program supplies, \$84 for local travel mileage reimbursement, and \$500 for dues, registrations, and fees. Based on prior year actuals, this department is able to recognize the reductions for contractual maintenance, program supplies and local travel mileage reimbursement without any impact to operations. Dues and fees for professional organizations and local conferences have been eliminated in order to meet the \$500 reduction.

# **Department of Business Information Services - 421**

Doreen M. Heath, Director II

Description	FY 2015 Actual	FY 2016 Budget	FY 2016 Current	FY 2017 Request	FY 2017 Change
01 Salaries & Wages					
Total Positions (FTE) Position Salaries	18.500 \$1,819,666	17.500 \$1,808,948	17.500 \$1,808,948	17.500 \$1,878,154	\$69,206
Other Salaries					
Summer Employment Professional Substitutes Stipends Professional Part Time Supporting Services Part Time Other					
Subtotal Other Salaries					
Total Salaries & Wages	1,819,666	1,808,948	1,808,948	1,878,154	69,206
02 Contractual Services					
Consultants Other Contractual		230,000 1,508,496	230,000 1,508,496	221,000 1,213,458	(9,000) (295,038)
Total Contractual Services	1,499,766	1,738,496	1,738,496	1,434,458	(304,038)
03 Supplies & Materials					
Textbooks Media Instructional Supplies & Materials					
Office Other Supplies & Materials		9,000	9,000	7,497	(1,503)
Total Supplies & Materials	155,564	9,000	9,000	7,497	(1,503)
04 Other					
Local/Other Travel Insur & Employee Benefits Utilities Miscellaneous		3,822	3,822	1,000	(2,822)
Total Other	570	3,822	3,822	1,000	(2,822)
05 Equipment					
Leased Equipment Other Equipment		9,083	9,083	4,500	(4,583)
Total Equipment	9,083	9,083	9,083	4,500	(4,583)
Grand Total	\$3,484,649	\$3,569,349	\$3,569,349	\$3,325,609	(\$243,740)

## **Department of Business Information Services - 421**

Doreen M. Heath, Director II

CAT			10 Mon	FY 2015 ACTUAL	FY 2016 BUDGET	FY 2016 CURRENT	FY 2017 REQUEST	FY 2017 CHANGE
1	Q	Director II		1.000	1.000	1.000	1.000	
1	к	Supervisor		2.000	2.000	2.000	2.000	
1	27	Applications Developer III		2.000	2.000	2.000	2.000	
1	27	Development Proj Manager		3.500	3.500	3.500	3.500	
1	25	Applications Developer II		5.000	5.000	5.000	5.000	
1	25	IT Systems Specialist		1.000	1.000	1.000	1.000	
1	25	Technical Analyst		1.000	1.000	1.000	1.000	
1	18	IT Systems Technician			1.000	1.000	1.000	
1	16	Administrative Secretary III		1.000	1.000	1.000	1.000	
1	15	Fiscal Assistant II		1.000				
1	15	Data Control Technician II		1.000				
	Tot	al Positions		18.500	17.500	17.500	17.500	

# **Department of Learning Management Systems**

Director II (Q)	1.0
Supervisor (O)	3.0
Instructional Specialist (B–D)	3.0
Application Developer III (27)	1.0
Database Administrator III (27)	1.0
Application Developer II (25)	7.0
Technical Analyst (25)	1.0
Student Systems Specialist (24)	1.0
Applications Specialist I (23)	1.0
Administrative Secretary III (16)	1.0
Data Control Technician I (13)	2.0
Director I (P)	1.0
Supervisor (O)	1.0
Supervisor (K)	2.0
Database Administrator III (27)	2.0
ETL Analyst/Programmer (25)	2.0
IT Systems Specialist (25)	1.0
Technical Analyst (25)	1.0
Application Developer I (23)	1.0
Administrative Secretary II (15)	1.0

F.T.E. Positions 34.0

**MISSION** The mission of the Department of Learning Management Systems (DLMS) is to provision instructional and information systems that enhance the education of students through the innovative application of technology; facilitate the design of connected systems, processes, and information; increase the efficiency of the educator, and transform access to information in support of teaching and learning for staff, students, parents, unions, and the community.

## MAJOR FUNCTIONS

#### Application Development

DLMS collaborates with offices, schools, and local government agencies to promote and support Montgomery County Public Schools (MCPS) and the initiatives of the Office of the Chief Technology Officer (OCTO) by developing, implementing, and continuously improving MCPS applications and services. Based on goals and priorities, the department develops, purchases, implements, and supports complex solutions for students, parents, schools, and offices. These solutions enable the collection and analysis of essential data; decision making and planning; dissemination of accurate and timely information; and operational effectiveness that streamlines and enhances the management of teaching and learning, as well as MCPS's compliance with state and federal regulations. DLMS focuses on providing and managing student systems so that they support greater accountability and sharing of knowledge among staff, students, and parents.

#### **Instructional Applications**

DLMS staff supports offices and schools by managing and administering student systems. The Online Administrative Student Information System (OASIS) is the source system for managing all student administrative information, including enrollment, attendance, report cards and transcripts, scheduling, course management, and assessment information. OASIS contains user-friendly applications that provide an easy and accurate method of collecting student administrative data. The OASIS Special Services (OSS) module is a component of OASIS that greatly increases the efficiency of managing the special education process for families, schools, and central services administrators and enables creation of the electronic Individualized Education Program (IEP). DLMS staff also manages the Online Achievement and Reporting System (OARS), comprising an electronic grade book and classroom-to-home communication solution, as well as electronic assessment systems to support timely delivery and reporting of assessments aligned with MCPS and Maryland state standards. The enterprise electronic grade book facilitates grading and reporting activities and policy alignment across the district and a classroom-tohome parent outreach component to securely communicate individual student achievement information from teachers to parents.

#### myMCPS

Information from the student systems and other information services is published in the myMCPS portal, which provides end users with the information they need in a single place. The myMCPS portal is designed to deliver a personalized user experience, based on a user's roles and responsibilities in the school system. The portal facilitates team and peergroup communication and collaboration; provides access to role-specific applications, data warehouse dashboards, and reports; and offers information services, including the elementary integrated curriculum, teacher and student attendance data, and social networking features such as wikis, discussion boards, and blogs.

#### **Knowledge Management Solutions**

DLMS collaborates with offices, schools, and local government agencies to promote and support MCPS and the initiatives of OCTO by developing, implementing, and continuously improving MCPS knowledge management solutions. Based on goals and priorities, the department develops, purchases, implements, and supports complex solutions for students, parents, schools, and offices. These solutions enable the collection and analysis of essential data; decision making and planning; dissemination of accurate and timely information; and operational effectiveness that streamlines and enhances the management of teaching and learning, as well as MCPS compliance with state and federal regulations.

#### Data Management and Reporting

DLMS oversees and manages the database architecture and reporting solutions for the district, as well as the implementation of quality assurance practices across the office. This department provides comprehensive data solutions to district staff, students, and parents, as well as to the Maryland State Department of Education (MSDE). These data management and reporting solutions provide current and historical reports to support both detail and summary-level data analysis for strategic decision making.

#### **Quality Management**

This department adds value to the overall operations within OCTO through the implementation of quality assurance processes across all departments. This department provides leadership in the use of quality assurance best practices, focused on meeting commitments for high-quality products and services that satisfy customer needs and performs reliably when delivered. Quality assurance practices encompass the entire software development process, including requirements, change management, configuration management, testing, and release. Quality assurance tools and techniques provide for tracking the effective use of development processes with measurement and verification throughout the development life cycle to final readiness review. Through the disciplines of technology testing and quality assurance, staff guides the planning and implementation of test protocols for products and services to verify their accuracy, performance, and usability in support of high-quality solutions. Additionally, staff creates materials, including user guides, quick reference cards, and frequently asked questions to provide school staff with guidance that supports a successful experience with the use of technology products and services.

### ACCOMPLISHMENTS AND INITIATIVES

- » DLMS identifies, develops, and implements industry-leading software solutions that best meet the requirements of schools and offices. The prevalence of social networking structures underpins important technology decisions as MCPS works to provide solutions that meet or exceed the expectations of 21st century learners and educators.
- » The enterprise portal, myMCPS, received a major upgrade that provides users with a dynamic, interactive, and scalable environment that enables school and office staff to contribute to, and participate in, social networking and professional development. The portal features rich cloud-based application delivery, communication, document storage, and collaboration resources with engaging dashboards and reports. The enhanced features empower staff to create and share instructional content with the MCPS 21st century professional learning community. Rich feature sets include video libraries, content personalization, and discussion boards to accelerate the communication of ideas across groups.
- » OASIS has received continuous upgrades to fulfill Board of Education policy, regulation, and procedural changes, as well as Maryland state and federal government-mandated changes. These upgrades included modifications to the Special Education Services module to comply with MSDE mandated changes to the Individualized Education Program, structural enhancements to enable broader browser support, and modifications to the accommodations module to support Partnership for Assessment of Readiness for College and Careers (PARCC) testing.
- » All secondary schools used the myMCPS Scheduler to develop the master schedules this school year. This upgrade enables each school to plan and complete their master schedule using a web-based interface that provides improved accessibility and transparency for all users. Students have the ability to enter course requests through the online portal, improving the accuracy and efficiency for master schedulers during articulation and master schedule development. Additionally, the upgrade enabled better management and definition of courses and control of their availability.
- » To ensure that MCPS maintains its status as a worldclass school system, DLMS continues to expand and enhance the usefulness of key data management solutions. This includes identifying, developing, and implementing industry-leading database solutions that best meet the needs of schools and offices. The prevalence of data-driven applications and reporting underpins the importance of technology as MCPS works to provide solutions that meet or exceed the expectations of 21st century learners and educators.

- » As the learning systems, instructional practices, and data change and evolve throughout the district, the data management, reporting, and analysis engines evolve to help teachers and staff best use the enormous amount of information generated each day. An upgraded data warehouse enables district staff, students, and parents to gain new insights into this information to help our students continue to achieve at higher levels. This new system provides users with greater visibility into all student data, including demographics, assessments, marks, attendance, program participation, and instructional interventions. Additionally, more data about school processes will be captured and made available, such as school programs and improvement plans. All data and reports are aligned with the School Support and Improvement Framework and support monitoring and analysis of the performance targets set for the strategic planning framework districtwide milestones.
- » Department staff continued to partner with all offices at MCPS as well as with other MCPS partners such as Montgomery College (MC), Montgomery County Government (MCG), and the Universities at Shady Grove (USG) to provide data and systems to help our students and community. DLMS worked with MCG to provide data to the community as part of Montgomery County's OpenData initiative, which provides direct access to county data sets in a consumable format, offering the public an opportunity to review and analyze raw data, and the opportunity to use it for a variety of purposes. DLMS also worked in partnership with MC and USG on the development and provision of data systems for the Achieving Collegiate Excellence and Success (ACES) program, which is a collaborative program that seeks to create a seamless pathway from high school to college completion. ACES focuses on identifying and supporting students who are underrepresented in higher education and those who are the first in their family to attend college.
- » DLMS continues to provide close support for district and state reporting of special education data. As MSDE guides and mandates change, DLMS staff works closely with staff from the Office of Special Education and Student Services to make changes. These changes to data systems and reports ensure that MCPS is compliant with state and federal legislation governing the special education process and help monitor to ensure that students are receiving the most appropriate services and accommodations in a timely manner.

## PERFORMANCE MEASURES

**Performance Measure:** Percentage of users satisfied with the customer service provided by the department

FY 2015	FY 2016	FY 2017
Actual	Estimate	Recommended
94%	97%	98%

**Explanation:** This is a measure of customer satisfaction with DLMS staff service, as measured by surveying stakeholders in work group sessions.

**Performance Measure:** The percentage of software implemented without major defects

FY 2015	FY 2016	FY 2017
Actual	Estimate	Recommended
93%	95%	99%

**Explanation:** This measure indicates the percentage of software implemented that performs without error, based on design specifications, as measured by source control work item management software.

Performance	e Measure:	The	percentage	of	stakeholder
requested	enhancemen	ts in	nplemented	for	enterprise
systems.					

FY 2015	FY 2016	FY 2017
Actual	Estimate	Recommended
85%	87%	90%

**Explanation:** This measure indicates the percentage of user-requested enhancements that are implemented once approved by a recognized advisory group.

### OVERVIEW OF BUDGET CHANGES

#### FY 2017 Recommended Budget

The FY 2017 recommended budget for this department is \$6,456,120, an increase of \$365,313 over the current FY 2016 budget. An explanation of this change follows.

#### Same Service Level Changes-\$463,323

#### Continuing Salary Costs—(\$52,616)

There is a decrease of \$52,616 for continuing salary costs for current employees. This amount is the cost associated with the salary step and general wage adjustment (GWA) of 2.0 percent that eligible employees will receive on September 3, 2016. In addition, all eligible employees who did not receive a step increase in FY 2012 due to the negotiated deferral of step increases will receive one additional step on the salary schedule effective March 4, 2017. The amount also includes the annualized cost of the FY 2016 salary step and 2.0 percent GWA employees received on October 17, 2015.

# Realignments to Meet Expenditure Requirements and Program Priorities—\$515,939

There are a number of realignments budgeted to address priority spending needs within this department. There is a realignment of a 1.0 FTE position and \$95,781 for an IT systems specialist, and a 1.0 FTE position and \$101,282 for a technical analyst from the Department of Infrastructure and Operations. Furthermore, there is a realignment to the administrative secretary III position account of \$7,676, which is a part of the technical adjustment from the Department of Infrastructure and Operations. Lastly, there is a realignment of \$311,200 for contractual maintenance from the Department of Business Information Services.

#### Program Efficiencies and Reductions—(\$98,010)

The FY 2017 recommended budget for this department includes a comprehensive effort to identify potential program reductions and efficiencies. Stakeholders including community partners and employee union representatives participated in the program efficiencies and reduction process.

There is a reduction of a 1.0 FTE supervisor position and \$91,189, as well as \$6,821 from contractual maintenance. The responsibilities of the supervisor position will be absorbed by other employees within the department, and based on prior year actuals; the reduction for contractual maintenance will have no impact on the operations of the department.

## Dept. of Learning Management Systems - 442/445

Joel S. Smetanka, Director II

r	T				
Description	FY 2015 Actual	FY 2016 Budget	FY 2016 Current	FY 2017 Request	FY 2017 Change
01 Salaries & Wages					
Total Positions (FTE) Position Salaries	36.800 \$3,112,485	33.000 \$3,465,708	33.000 \$3,465,708	34.000 \$3,524,267	1.000 \$58,559
Other Salaries					
Summer Employment Professional Substitutes Stipends					
Professional Part Time Supporting Services Part Time Other		93,000 25,747	93,000 25,747	94,860 26,262	1,860 515
Subtotal Other Salaries	110,012	118,747	118,747	121,122	2,375
Total Salaries & Wages	3,222,497	3,584,455	3,584,455	3,645,389	60,934
02 Contractual Services					
Consultants Other Contractual		440,519 2,014,925	440,519 2,014,925	440,519 2,319,304	304,379
Total Contractual Services	2,397,326	2,455,444	2,455,444	2,759,823	304,379
03 Supplies & Materials					
Textbooks Media					
Instructional Supplies & Materials Office Other Supplies & Materials		4,146 45,562	4,146 45,562	4,146 45,562	
Total Supplies & Materials	51,561	49,708	49,708	49,708	
04 Other					
Local/Other Travel Insur & Employee Benefits Utilities Miscellaneous		1,200	1,200	1,200	
Total Other	222	1,200	1,200	1,200	
05 Equipment					
Leased Equipment Other Equipment					
Total Equipment					
Grand Total	\$5,671,606	\$6,090,807	\$6,090,807	\$6,456,120	\$365,313

## Department of Learning Management Systems - 442/445

Joel S. Smetanka, Director II

CAT	DESCRIPTION	10 Mon	FY 2015 ACTUAL	FY 2016 BUDGET	FY 2016 CURRENT	FY 2017 REQUEST	FY 2017 CHANGE
	442 Dept. of Learning Management Sys	stems					
1	Q Director II			1.000	1.000	1.000	
1	P Director I		1.000				
1	O Supervisor		3.000	3.000	3.000	3.000	
1	K Supervisor		1.000	1.000	1.000		(1.000)
1	BD Instructional Specialist		3.000	3.000	3.000	3.000	· · ·
1	27 Applications Developer III		1.000	1.000	1.000	1.000	
1	27 Database Administrator III		1.000	1.000	1.000	1.000	
1	25 Applications Developer II		7.000	7.000	7.000	7.000	
1	25 Technical Analyst		1.000	1.000	1.000	1.000	
1	24 Student Systems Specialist		1.000	1.000	1.000	1.000	
1	23 Applications Specialist I		1.000	1.000	1.000	1.000	
1	16 Administrative Secretary III			1.000	1.000	1.000	
1	15 Administrative Secretary II		1.000				
1	15 Data Control Technician II		1.000				
1	13 Fiscal Assistant I		.800				
1	13 Data Control Technician I		1.000	2.000	2.000	2.000	
	Subtotal		23.800	23.000	23.000	22.000	(1.000)
	445 Dept. of Information & Application	Architecture					
1	Q Director II		1.000				
1	P Director I			1.000	1.000	1.000	
1	O Supervisor		2.000	1.000	1.000	1.000	
1	K Supervisor		2.000	2.000	2.000	2.000	
1	27 Database Administrator III		2.000	2.000	2.000	2.000	
1	25 IT Systems Specialist		1.000			1.000	1.000
1	25 ETL Analyst/Programmer		2.000	2.000	2.000	2.000	
1	25 Technical Analyst		1.000			1.000	1.000
1	23 Applications Developer I		1.000	1.000	1.000	1.000	
1	16 Administrative Secretary III		1.000				
1	15 Administrative Secretary II			1.000	1.000	1.000	
	Subtotal		13.000	10.000	10.000	12.000	2.000
	Total Positions		36.800	33.000	33.000	34.000	1.000