

Massachusetts Maritime Academy

Special Mission Renewal Plan

2017-2021



Francis X. McDonald, President

Bradley K. Lima, Senior Vice President of Academic Affairs

Rose Marie Cass, Vice President of Finance

Anne Marie Fallon, Vice President and Chief Information Officer

Holly A. Knight, Vice President for Advancement

Paul B. O'Keefe Jr., Vice President of Operations

Edward J. Rozak, Vice President of Student Services/Commandant of Cadets

Elizabeth Stevenson, Vice President of Enrollment Management & External Operations

Contents

Section One: Executive Summary 2

Section Two: Introduction 5

 I. History of Massachusetts Maritime Academy 5

 II. The Massachusetts Maritime Academy Mission 5

 Regional, National, and Global Impact 6

 Maritime Industry and Licensure 6

 Other Specialized Industries and Licensure/Certification..... 6

 Preparing Students for Success..... 6

 III. Special Mission Partnership with the Commonwealth 7

 Background and Framework of the Renewal Plan..... 7

 Strategic Focus Areas to Support the Mission 8

Section Three: Renewal Plan 9

 I. College Participation 9

 Access..... 9

 Diversity 11

 II. Affordability 15

 III. College Completion 18

 IV. Student Learning..... 22

 V. Workforce Alignment 25

 VI. Preparing Citizens 28

 VII. Eliminating Disparities 32

 VIII. Human Resources 34

 IX. Financial Resources..... 35

 X. Infrastructure and Physical Resources..... 39

Section Four: Conclusion..... 43

Section Five: Appendices 44

 List of Appendices 44

Section One: Executive Summary

This document serves as the Massachusetts Maritime Academy's (MMA) proposal to renew its special mission designation. The Board of Higher Education (BHE) designated the Academy a Special Mission College in 2005, establishing at that time a partnership that permitted the Academy to determine a set of performance measures by which to gauge its success in meeting the broad objectives of its unique mission (M.G.L. Chapter 15A, Section 7). The partnership further authorized the Academy to set and retain its student tuition and fees.

The mission of the MMA is to provide a quality education for graduates serving in the merchant marine, the military services, and those who serve the interests of the Commonwealth, the Nation, and the Global Marketplace. The Academy's distinctive mission becomes apparent given the unique requirements of our maritime degree programs. To satisfy USCG licensing standards, students in these programs must accrue the requisite sea time, meet physical fitness standards, and pass the USCG licensing examination, resulting in an education that differs significantly from that of traditional institutions of higher education. Even our non-marine licensed majors, such as Energy Systems Engineering and Emergency Management, require students to successfully complete a Bachelor of Science curricula averaging 128 classroom credit hours. These programs include extensive lab-based learning and up to 24 additional credit hours of cooperative and real-life learning experiences that reinforce the classroom learning received throughout the academic year.

This renewal plan provides extensive information in twelve critical areas, each of which provides specific detail on the current condition (where the Academy is with regard to the topic area), the current challenges (what the Academy is working on with regard to the topic area), and the desired future state (where the Academy is headed with regard to the topic area). Given the detailed nature of the contents, there are several key areas highlighted:

- **College Participation:** MMA has experienced steady enrollment growth over the past five years, increasing enrollment from 1,312 students in 2012 to 1,677 in 2016 (a 28% increase). This growth is a result of extensive outreach programming, a strong reputation as a quality and affordable college experience, and an attractive mix of academic programs. It is important to point out that this growth has continued even in an era of in which higher education is beginning to see decreasing numbers of college-bound students.
- **Diversity:** One of the greatest challenges confronting Massachusetts Maritime Academy is that of further diversifying its student body. While the Academy has met its current goals over the past two years for Hispanic/Latino and Black or African American students, we continue to focus on this important metric. Through the President's Task Force on Diversity and Inclusion, established to foster a campus climate that effectively supports diversity and inclusivity, the Academy has initiated a number of robust efforts to attract and enroll women and under-represented minorities to MMA. For example, we are strengthening our existing partnership with Roxbury Community College to build upon the Academy's proven success in the areas of facilities engineering and management. In the past two years, the Academy has met or exceeded our annual goals for women and under-represented minority enrollments. Our goal is to increase enrollment of women to 17% of our student body and under-represented minorities

to 8% of our student body by 2021. Details appear in the “Diversity-Planning and Projections” section of this report (page 12).

- **Affordability:** MMA has maintained a leadership position as the most affordable school as measured by tuition and fees in the State system (see Table 5, p. 15 of full report). We fully anticipate remaining in that position despite our increased cost structure due to expansion and enrollment growth. The Academy will increase in-state tuition and mandatory fees by \$980 for students entering MMA in 2019 and thereafter. The Academy also anticipates increasing tuition and mandatory fees by no more than 6% through 2023 as determined by the Academy’s Board of Trustees. It is anticipated that this proposed 5-year increase package will result in MMA remaining the least expensive alternative in the State system.
- **Financial and Infrastructure Resources:** The specialized degree programs at MMA require an educational approach (based on a “learn-do-learn” philosophy) that employs an array of technologies and classroom needs to support the special mission nature of the educational experience. Additionally, our seven undergraduate Bachelor of Science programs require general science labs as well as highly specialized labs. The Academy has maintained a low student-to-faculty ratio to facilitate the lab-based and participatory nature of the student’s education. Moreover, these specialized labs spaces, simulator spaces, and software programs are resource intensive. Looking ahead to projected enrollment growth, the addition of a new undergraduate major, and the high cost of operating cutting-edge classrooms, lab spaces, simulator systems, and the TS Kennedy, MMA is actively pursuing the addition of a new academic building housing additional lab spaces, a multi-function classroom, and 30 faculty office spaces. This investment, in addition to the modest increases outlined above, will enable us to attract and educate highly talented students to have a positive impact on the Commonwealth, the Nation, and the Global marketplace. As an additional note of interest, the Academy is working with MARAD on replacing our current training ship, the TS Kennedy, as it reaches the end of its operational life.
- **Civic Engagement:** A regimental tradition, MMA students continue to be involved in a number of civic engagements throughout their period of enrollment. 100% of our first-year students were involved in civic engagement activities in 2016. Even seniors facing the process of finding a first job and, in many cases, the need to pass the extensive USCG licensing exams, are engaged (66% of the class of 2015) in civic engagement activities. Additionally, experiential learning is a key component of our curriculum which allows students to be exposed to international cultural experiences and non-profit organizations. The result of these efforts are graduating students with a deep appreciation for being good citizens, showing empathy for others, and giving back throughout their lives.
- **Workforce Development:** The demand for our graduates continues to be strong. This is evident in the two career fairs held in the fall and spring of each academic year. With graduating classes of approximately 400 graduates, over 200 regional, national, and global companies come to MMA each year to fill in excess of 500 open positions. The result of the strong demand for our graduates is an 88% career outcome rate at graduation for the class of 2016.

Throughout the period of the renewal plan and into the future, the Academy is committed to remaining a leader in maritime education and workforce development while sustaining productive relationships with industry partners throughout the Commonwealth.

Section Two: Introduction

The special mission renewal plan that follows was produced under the leadership of the Senior Vice President of Academic Affairs, who consulted at length with the President for input and feedback. The Assistant Dean of Academic Affairs served as primary author and editor of the document, receiving extensive assistance with document structure, content, and data from the Director of Institutional Effectiveness. To obtain the necessary information and data for various sections of the document, the author solicited input from all relevant departments and offices from across campus throughout the drafting process and during a series of targeted meetings with key stakeholders (Appendix A).

I. History of Massachusetts Maritime Academy

Founded in 1891 as the Massachusetts Nautical Training School, the Massachusetts Maritime Academy (hereafter MMA or “the Academy”) operated for the first seventy years as an independent, post-secondary educational institution fully supported by the Commonwealth and reporting directly to a Board of Commissioners appointed by the Governor. MMA became a member of the state college system in 1964. Designated in 2005 as a special mission colleges within the state university system, the Academy offers students a high-quality education within distinctive curricula designed to provide a multi-modal learning experience directly focused on student success in the degree programs and the success of graduates in the workplace. A hallmark of an MMA education for the last 126 years, this educational approach is continually refined to meet the changing demands of higher education and the global workforce. The specialized, STEM-based degree programs prepare graduates for work not only in the maritime industry but also in a range of technological, business, environmental, and civic sectors vital to the economies of the Commonwealth and Nation. By immersing students in a disciplined and supportive learning environment characterized by a regimental structure and a clearly articulated code of conduct, the Academy graduates lifelong learners who possess the education, experience, confidence, motivation, and self-discipline to excel in their careers.

II. The Massachusetts Maritime Academy Mission

The mission of Massachusetts Maritime Academy is to provide a quality education for graduates serving in the merchant marine, the military services, and those who serve the interests of the Commonwealth, the Nation, and the Global Marketplace.

The distinctive character of Massachusetts Maritime Academy results, in part, from its status as both a special mission college and a regimented state maritime academy. These functions, which are complementary and integral to the institutional mission, combine to shape the unparalleled educational experience the Academy offers its students.

In its role as a maritime academy, the Academy must adhere to program standards and requirements established by the U.S. Department of Transportation (e.g., maintaining a regimented program), the U.S. Coast Guard (e.g., Standards for Training, Certification, and Watchkeeping; Coast Guard license examinations for maritime degrees; facilitating sea service for license majors), and the Maritime Administration (e.g., operation and maintenance of a training vessel). The unique mission of the

Academy and its contributions to an array of specialized industries help define the Academy's role as a special mission college, and strategic planning reflects this status (Appendix B).¹

Regional, National, and Global Impact

Throughout its 126-year history, the Academy has consistently maintained the relevance of its programs, preparing students for success through an educational approach that combines rigorous academic coursework with practical, real-world learning experiences. Consistent with its mission, the Academy maintains the relevance of its programs by adapting to global trends in the maritime industry and in an expanding array of other industries served by its seven Bachelor of Science programs (Emergency Management, Energy Systems Engineering, Facilities Engineering, International Maritime Business, Marine Safety and Environmental Protection, Marine Engineering, and Marine Transportation) and two Master of Science programs (Emergency Management and Facilities Management). Employed in countless industries and organizations serving the interests of the state, region and nation, Academy graduates continue to benefit from an unparalleled educational experience and to make significant contributions to the global marketplace.

Maritime Industry and Licensure

Though informed by a long history and well-established tradition, the two oldest programs offered by the Academy, Marine Transportation and Marine Engineering, are highly specialized disciplines utilizing cutting-edge educational technologies to provide students with exceptional learning opportunities. Comprising about half of the incoming freshman class, these programs offer comprehensive curricula that require students to complete not only the academic program itself but also a range of qualifications and assessments dictated in part by external agencies. To graduate, all students in both programs must complete sea service requirements, undergo assessments to demonstrate mastery of the Standards for Training, Certification, and Watchkeeping (STCW), and pass the U.S. Coast Guard license examination specific to the major. Upon meeting these rigorous requirements, students in both programs embark on maritime careers with the knowledge, skills, and licensure that make them competitive participants in a global maritime industry.

Other Specialized Industries and Licensure/Certification

Opportunities for licensure and certification exist in other degree programs as well. In Facilities Engineering, for example, students can obtain Massachusetts State licenses. In the Energy Systems Engineering program, students sit for the Fundamentals of Engineering Examination, a precursor to licensure in the industry. And in both the Emergency Management and the Marine Safety and Environmental Protection programs, students are able to obtain certification as emergency medical technicians as well as OSHA certification. For graduates from these programs, licensure and certification can enhance career opportunities and success in the respective disciplines.

Preparing Students for Success

A number of factors contribute to the success of our graduates in the workforce, including an engaged alumni, extensive cooperative and experiential learning opportunities, and an effective regimental lifestyle that instills in students leadership and teamwork skills. Results from the Spring 2017 Career Fair

¹ All references to the strategic plan in this document refer to the Massachusetts Maritime Academy Five-Year Strategic Plan (FY 2017-2021).

Survey reflect that 91% of employers surveyed rated MMA student achievement “high” with regard to leadership and teamwork. The effectiveness of the Academy’s practical education components can be seen in the success of graduates throughout the global workforce, with increasing numbers of students working in industries that reach beyond the region and nation. This success is further underscored by the low student loan default rate among MMA graduates (2% three-year cohort default rate for students who entered repayment during fiscal year 2013).

A significant contributor to the effective transition of MMA graduates into the workforce are the well-attended career fairs as well as the career service workshops focused on résumé writing and interview skills. Over 100 companies visit the campus for each career fair. The most recent career fair, held in the spring semester of 2017, brought 125 of companies to campus. Twelve of these companies interviewed between 5-20 students, while others followed up with interviews off site.

III. Special Mission Partnership with the Commonwealth

Background and Framework of the Renewal Plan

The Academy was designated a special mission college by the Department of Higher Education (DHE) in 2005. Its special mission status underscores the unique role of the Academy within the Massachusetts higher education system and permits the Academy to employ a distinctive array of assessment measures to determine the success of its programs and students by comparison with peer institutions. Since its designation as a special mission college, the Academy has submitted a five-year renewal plan that outlines strategic objectives for meeting its distinctive mission as well as methods for evaluating its success in doing so. This plan also describes how the Academy’s mission provides significant benefit to the Commonwealth and the Nation. One such benefit is the ability to attract the highest caliber students and prepare them to enter a focused segment of the workforce with a highly marketable combination of education and practical experience. In this way, Academy serves the evolving needs of vital industries while enhance the state’s reputation for leadership in public education. The entrepreneurial model undertaken as a condition of the partnership agreement enables the Academy to lay a solid foundation for success by making revenue levels more predictable while promoting innovative ways to increase revenue and reduce operating costs. Since the agreement was established, the Academy’s strategic planning has resulted in the implementation of new programs and adjustments to existing programs in direct response to global changes in both education and industry. The increased latitude provided by its special-mission status has enabled the Academy to successfully align all such undertakings with its institutional mission while maintaining the distinctive character and quality of education for which it has been recognized since 1891.

The Massachusetts Maritime Academy proposes an implementation plan renewal consistent with the outside sections of the Massachusetts fiscal year 2004 budget pertaining to the establishment of special-mission colleges (Appendix C). The Academy also proposes to continue working within the framework of the original implementation plan, making modifications as appropriate for the current renewal period. To ensure the continued relevance of its distinctive educational mission and to maintain the exceptional record of success of its graduates, the Academy also proposes the following:

- through strategic planning, to implement initiatives that will result in programs that best support the regional and national demands of those sectors of the workforce served by its programs;

- to develop new programs in response to the changing global workforce, maintaining a leading role in preparing graduates for success in emerging fields related to its overall mission;

Upon submitting the current Special Mission Renewal Plan, the Academy will make the Special Mission Renewal Plan its Five-Year Strategic Plan. As part of the strategic planning cycle, the Academy will also create a 24-month action plan, hereafter referred to as the “Voyage Plan.”

Strategic Focus Areas to Support the Mission

As previously stated, the Academy’s academic programs are characterized by a highly effective blend of academic and practical learning, a regimented undergraduate student population, and a firm commitment to lifelong learning through professional and workforce development. The educational programs maintained by the Academy reflect the “discipline, knowledge, leadership” motto and “learn-do-learn” educational philosophy for which MMA is highly regarded. The Academy’s mission, “to provide a quality education for graduates serving in the merchant marine, the military services, and those who serve the interests of the Commonwealth, Nation and global marketplace,” requires a consistent strategic focus on the integrity of its educational and student life programs as well as on the continued relevance of these programs to the services, industries, and organizations within which students will be employed. In the 2017-2021 strategic plan, the key mission focus areas are identified as follows:

- Support the Massachusetts Department of Higher Education Vision Project Goals.
- Achieve a more diverse, 1,900-member student body by 2021.
- Enhance and improve, in both excellence and diversity, our student body, faculty and staff.
- Improve institutional effectiveness.
- Optimize available resources in support of the mission of the Academy.

Section Three: Renewal Plan

I. College Participation

Access.

The Academy continues to attract and enroll qualified, motivated students who recognize the excellent opportunities available to graduates in one of its nine degree programs. Indeed, the Academy has seen a 68% increase in its undergraduate population since 2006, with 1,677 undergraduates in fall 2016, and a 68% increase for its graduate program, enrolling 74 graduate students in fall 2016. (See Table 1).

*Table 1. Fall Enrollment Trends**

Fall	Total Undergraduate Students	Total Graduate Students	Total Students
2006	1,001	44	1,045
2007	1,075	60	1,135
2008	1,117	87	1,204
2009	1,191	97	1,288
2010	1,200	96	1,296
2011	1,278	90	1,368
2012	1,312	103	1,415
2013	1,376	100	1,476
2014	1,401	96	1,497
2015	1,571	103	1,674
2016	1,677**	74***	1,751

* As reported to IPEDS, figures reflect students enrolled for credit (both degree-seeking and non-degree seeking (e.g., dual enrollment students)).

**Due to the academic load required of undergraduate students in MMA degree programs, the headcount multiplier for FTE is 1.05, for an FTE of 1,760 (MMA Key Data Elements, based on student credit hours, shows an FTE of 1,730.37)

***For the class of 2016, recording methods for IPEDS changed from previous years, but both graduate program cohorts are fully subscribed

Access—Current Status

The Academy's significant growth in recent years underscores its commitment to ensuring access for students from a wide range of backgrounds over a significant geographical area. A critical approach to reaching students and promoting the value of an MMA degree is through outreach programming that is designed to welcome students and encourage college participation. Many of these programs are also located in schools where the Academy can reach underserved students. The Academy runs K-12 outreach programs or has partnered with organizations that include the Advanced Science and Leadership Program; the Sea, Science and Leadership Program; Camp Harbor View; Ron Burton Training Village; and Follow the Voyage. The Academy continues to identify strategies for increasing the number of underrepresented students participating in such programs. In summer 2017, 30 scholarships were received from Battelle Laboratories to assist underrepresented high school students in attending the Sea, Science and Leadership program. Also underway are school partnerships that include a very successful dual-enrollment program that engages high school students in Roxbury at the John D. O'Bryant School of Mathematics and Science in college-level academic coursework, familiarizing them with the college experience while giving them a potential head start in their college careers. At the higher education level, partnerships are being created with community colleges. The Academy is also actively involved in the Commonwealth Commitment.

The Admissions Office has also designated a transfer specialist counselor to help assist transfer students matriculate to the Academy. The counselor will also be working on strategic partnerships at local community colleges and expanding outreach in Rhode Island and Connecticut. All such efforts make a

growing number of prospective students aware of the educational opportunities available at MMA and promote the value of an MMA degree in terms of return on investment. Contributing significantly to enrollment success at MMA are the Academy's national rankings, which continue to be very positive.² The following is a selected list of these rankings:

- **US News and World Report – 2017 Best Colleges Rankings**
#3, Top Public Schools (Regional Universities North)
#18, Best Regional Universities North
#10, Best Colleges for Veterans (Regional Universities North)
- **Money Magazine – 2017-2018 Best Colleges Rankings**
#4 among the 50 Best Colleges You Can Actually Get Into
#15 among the 50 Best Public Colleges
#26 (national)
- **PayScale – 2016-2017 Colleges with Highest Salary Potential**
#6 (four-year colleges in Massachusetts)
#16, tied (public schools)
#60, tied (all four-year schools)
- **PayScale – 2017 College Education Return on Investment (ROI) Rankings***
#2, Best Value Colleges (Massachusetts)
#9, Best Value Colleges (public colleges)
#14, Best Value Colleges (national)
*Rankings data reflect the 20-year net ROI for on campus students at in-state rates with no financial aid. When 20-year net ROI is annualized, MMA is tied at #5 nationally.
- **US Department of Education College Scorecard** (published 9/12/2015)
One of 23 four-year schools with low costs that lead to high incomes

HOMEROOM, the official blog of the U.S. Department of Education, has placed MMA 4th in a list of schools demonstrating “high earnings, as well as low costs for their lowest-income students.” And in April of 2017, the *Boston Business Journal* listed MMA as third in a list of “best value colleges” in Massachusetts (See Appendix D).

Access—Planning/Projections

Through strategic growth, combined with effective recruitment and outreach programming, the Academy continues to expand the pool of applicants to its degree programs and to do so with particular attention to underserved populations. To optimize enrollment efforts and ensure the best possible enrollment planning, the Division of Enrollment Management has instituted an enrollment management committee that will provide a forum in which stakeholders from across campus can participate in strategic discussions regarding enrollment efforts. Established in summer 2017, the committee is chaired by the Director of Admissions and comprises individuals selected from across campus as members, though all are welcome to participate. The committee will also draft a comprehensive, five-year strategic enrollment plan for the division by January 1, 2018, which will guide the division in upcoming years during a period of projected decline in traditional college-age students. Going forward, the Academy will continue to recruit from feeder high schools while looking for areas and opportunities for outreach programming in high schools in other states. In addition, the Academy seeks to expand its camps and clinics to reach students who might not otherwise see themselves as potential college students.

² <https://www.maritime.edu/mma-national-regional-rankings>

Enrollment Projections for Strategic Growth.

By 2021, the Academy seeks to increase its total undergraduate and graduate enrollment by approximately 16%, from 1,640 to 1,900 students. Such projections are based, in part, on a sustained retention rate target of 97% through orientation to the beginning of the academic year, a first- to second-year retention rate of 88-90%, and a six-year graduation rate of 68-72%. Also taken into account will be the addition of a third graduate program and the construction of a new academic building. Table 2 provides the resulting enrollment projections.

*Table 2. Annual growth of the student population**

Entering Class Yr.	Orientation Incoming Freshman Class	Sept. 15 Freshmen	Total Undergraduate	Total Graduate	Total Enrollment
2017	475	450	1,600	100	1,700
2018	475	450	1,650	100	1,750
2019**	475	450	1,700	125	1,825
2020***	500	475	1,725	150	1,875
2021	500	475	1,750	150	1,900

Source: MMA Strategic plan FY2017-2021

***Anticipates the addition of a new graduate program*

****Contingent upon completion of a new academic building*

Enrollment Standards.

The Academy will continue to use the MA DHE admission standards and the higher University of Massachusetts standard, and will work to ensure optimal enrollment in degree programs (Table 3).

Table 3. University of Massachusetts Required SAT or ACT Scores for Freshman Applicants

Campuses Weighted Average GPA	Combined SAT Score	ACT Score
2.51-2.99	1030	20
2.41-2.50	1070	21
2.31-2.40	1110	22
2.21-2.30	1140	23
2.11-2.20	1180	24
2.00-2.10	1220	25

Source: Massachusetts Department of Higher Education

Access—Performance Indicators

- Increase graduate enrollment to 150 for academic years 2020 and 2021, contingent upon development and approval of a third Master of Science program by DHE
- Increase undergraduate enrollment to 1750 by 2021, contingent on successful construction of a new academic building
- Work to align admissions with actual enrollment by degree program with the goal of meeting first-year freshman acceptance and yield rates

Diversity

One of the greatest challenges confronting Massachusetts Maritime Academy is that of further diversifying its student body. The Academy met its 2016 recruitment goal for underrepresented minority students (10 students). The Academy will continue to focus on this important metric as outlined in Table

5. The Academy views diversity and inclusivity as a critical component of higher education, essential to a thriving academic community and significantly beneficial to students seeking a college degree. The Academy is therefore committed to increasing diversity within its campus community, and diversity remains a high priority reflected in strategic planning, campus-wide initiatives, and outreach programming. One governing objective is to “achieve a more diverse, 1,900-member student body by 2021.”

Enrolling female students and students from diverse backgrounds into the programs offered at the Academy can be challenging, partly because such students have not historically known about or sought employment in the maritime industry or the engineering fields for which MMA degree programs prepare students. Despite these challenges, the Academy is committed to increasing diversity among its student body. It is, however, important to keep these challenges in mind when interpreting diversity figures at the Academy and when comparing diversity at MMA with diversity numbers at other institutions. Indeed the percentage of minority students at MMA is dramatically affected when a single student enrolls or withdraws, as the number of minority students is low.

Diversity—Current Status

The Academy strives to increase the percentage of women and minorities enrolled. As is evident in Table 4, the percentage of female and Hispanic/Latino students has increased since 2012, while the percentage of Black or African American students has changed very little.

Table 4. Diversity Comparisons—MMA vs. Peers

Institution Name	% Female				% Hispanic/Latino*				% Black or African American*			
	2012	2013	2014	2015	2012	2013	2014	2015	2012	2013	2014	2015
State Universities												
<i>MA Maritime Academy**</i>	10	12	12	13	2	1	3	4	2	2	2	1
Bridgewater State University	58	58	59	59	5	5	6	6	7	8	9	9
Fitchburg State University	54	56	56	54	7	9	10	11	5	5	7	9
Framingham State University	63	63	63	63	8	9	9	11	7	8	8	8
MA College of Art and Design	68	70	70	71	6	6	8	9	2	2	3	3
MA College of Liberal Arts	59	60	62	63	6	6	7	8	9	9	9	9
Salem State University	61	61	60	61	10	10	12	12	8	8	9	9
Westfield State University	53	52	53	54	6	7	8	9	4	4	4	4
Worcester State University	60	60	60	59	7	7	9	9	6	6	7	7
Maritime Academies												
<i>MA Maritime Academy**</i>	10	12	12	13	2	1	3	4	2	2	2	1
California Maritime Academy	13	14	14	15	15	16	17	17	3	2	2	2
Maine Maritime Academy	14	13	13	14	1	1	1	1	1	1	1	1
SUNY Maritime College	10	11	10	10	8	9	7	11	4	4	4	4

Source: IPEDS Fall Enrollment (undergraduate degree-seeking and non-degree seeking)

**Fall 2015 data derived from College Navigator*

***The figures for peer maritime academies represent both civilian and regimental students. MMA undergraduate students are 98+% regimental.*

Diversity—Planning/Projections

The Academy continues to plan and implement measures to increase diversity throughout the campus community. A President’s Task Force on Diversity and Inclusion has been established whose goal is to foster a campus climate that effectively supports diversity and inclusivity. Also established have been the Enrollment Management Committee as well as the Office of Inclusive Excellence and International

Programs, which helps students with the transition process to MMA and with support and resources that help ensure their success. This office plans a wide variety of multicultural events, and continues to develop and implement comprehensive support for minority and international students (Appendix E).

Maintaining Access for Economically Disadvantaged Students.

Through its Department of Admissions, the Academy promotes higher education to economically disadvantaged students in programs that take place both on campus and throughout the region (See “Access-Current Status above). Nearly 20% of first-time freshmen over that past five years have been recipients of a federal Pell Grant.

Maintaining Access for Minority Students.

The Department of Admissions also strives through strategic partnerships to reach minority students who might not otherwise be aware of opportunities available with a degree from MMA or be considering college, doing so by developing and delivering programs to schools within areas with concentrated minority populations (See “Performance Indicators” on next page).

Planned Initiatives.

Among the initiatives underway to encourage student enrollment from underserved communities, the success of the dual-enrollment program has been notable. The program, currently conducted at the John D. O’Bryant School of Mathematics and Science, brings the college experience to prospective students, provides field trips to the MMA campus, and makes them aware of the MMA degree programs as well as career opportunities within the maritime industry, and encourages them consider pursuing a college degree at the Academy. With expanded funding and more faculty involvement, this effort can be duplicated at other districts. Discussions are underway with Greater New Bedford Voc-Tech, Massasoit Community College, the public school systems in Boston and New Bedford to expand this program, which effectively reaches economically disadvantaged and minority students.

To help increase diversity in the student body, the Academy is considering an eighth undergraduate degree program in a discipline that has yet to be determined. The academic departments have been assigned the task of discussing this initiative during academic year 2017-18 and determining a program with the potential to attract a more diverse group of applicants for approval by DHE in academic year 2018-19.

Through its robust promotion efforts and targeted outreach, the Academy is experiencing an increase in applications that is expected to continue. A concerted effort is underway across campus to expand programing that will help the Academy reach the ambitious goals it has set for increasing the percentage of female and minority students enrolled by 2021 (Table 5). Aligned with DHE, these are based upon a range of factors, including prior enrollment, educational markers, and trends in maritime and other industries served by MMA degree programs. The figures also take into account the predicted decline in students of traditional college age, the number of women and minorities obtaining undergraduate degrees, and the populations choosing STEM-related college degree programs.

Table 5. Projected first-year female and minority enrollment and percentage of incoming class

	2017	2018	2019	2020	2021
Women	65 (13.7%)	70 (14.7%)	75 (15.8%)	80 (16%)	85 (17%)
DHE African American and Hispanic Populations	20 (4.2%)	25 (5.3%)	30 (6.3%)	35 (7%)	40 (8%)
All Students of Color	55 (11.6%)	60 (12.6%)	65 (13.7%)	70 (14%)	75 (15%)

Source: MMA 5-Yr. Strategic plan (FY 2017-2021)

Diversity—Performance Indicators

Through strategic planning, the Academy has outlined specific measures for increasing the percentages of women and underrepresented populations enrolled (consistent with the Department of Higher Education focus on Hispanic/Latino and Black or African American students).

Diversity Figures.

The Academy has established specific goals for diversity. These goals are as follows:

- Achieve 17% female enrollment for the class entering 2021
- Achieve 8% Hispanic/Latino and Black or African American student in the student body by 2021
- Achieve 15% Students of Color in the student body by 2021

Success in Maintaining and Increasing Diversity.

The Academy will create, strengthen, and expand partnerships and outreach programming designed to increase diversity of enrollment. These partnerships include the following:

- Ron Burton Training Village
- Camp Harborview
- John D. O'Bryant School of Mathematics and Science
- Roxbury Community College
- Massasoit Community College
- Bristol Community College
- Cape Cod Community College
- Sea, Science and Leadership Program
- New Bedford Regional Vocational High School
- Junior Achievement SPARK Camp
- Girl Scouts of Eastern Massachusetts

Successful Implementation of Initiatives.

The 2017-2021 strategic plan also calls for specific initiatives to promote diversity. These initiatives are as follows:

- Strengthen and expand enrollment with secondary education institutions, such as John D. O'Bryant School of Mathematics and Science.
- Continue to promote inclusivity and respect by means of the President's Taskforce on Diversity and Inclusion.

- Research new undergraduate programs with potential to attract underrepresented and female students during academic year 2017-18, submit a proposal to campus governance in academic year 2018-19, and recruit the first cohort in academic year 2019-20.

II. Affordability

Affordability—Current Status

In order to continue to offer the best possible price to students despite decreases in state funding, the Academy has maintained limited increases in tuition and mandatory fees while substantially increasing financial aid by approximately \$5.4 million since 2007-08.

Student Charges.

Throughout the past ten years (fiscal years 2008-2017), the Academy has maintained the lowest average increases in tuition and mandatory fees in terms of compounded annual growth rate by comparison with its peers (Table 6).

Table 6. Tuition and Mandatory Fees: MMA vs. Peers (Based on Fall Resident Undergraduate In-State Rates)

Institution	FY-2008	FY-2017	CAGR
Massachusetts Maritime Academy	\$5,686	\$8,006	3.9%
State University Average	\$6,224	\$9,925	5.3%
University of Massachusetts Average	\$9,023	\$13,977	5.0%
Peer Maritime Academy Average	\$5,974	\$9,240	5.2%

Sources: All data sourced from Massachusetts DHE except for data on the state maritime academies (California, Maine, SUNY)

State maritime data sourced from IPEDS Student Charges (final release data)

IPEDS: Price of attendance for full-time, first-time undergraduate students (academic year programs): Published in-state tuition and fees

In fiscal year 2017, tuition and fees at MMA remain the lowest among state universities and peer maritime academies (Figure 1).

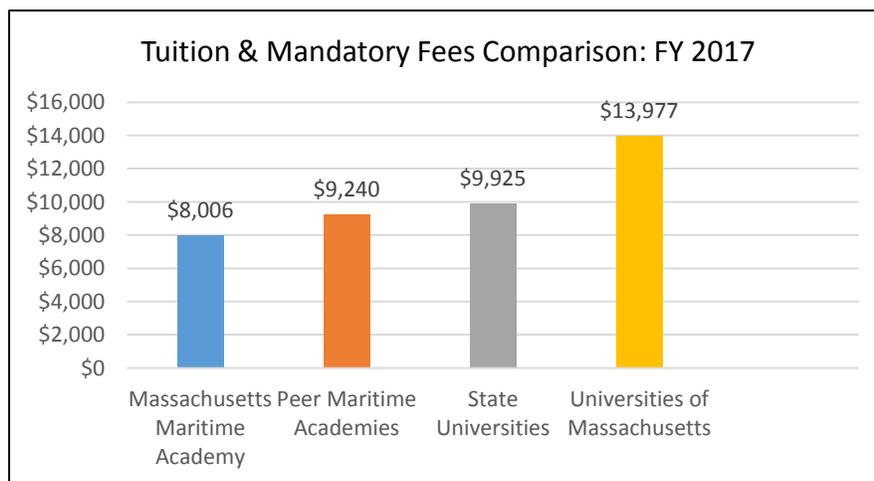


Figure 1 Tuition and mandatory fees comparison, FY 2017

Financial Aid.

Financial aid is also a key factor in determining affordability. Approximately 75-80% of MMA undergraduate students receive financial aid, primarily from federal, state, and institutional funding. The Academy continues to increase need-based financial aid, doing so by \$2.5 million between fiscal years 2010 and 2016 (Figure 2). Support at this level helps offset any additional charges students experience as the Academy attempts to adjust to state appropriations by modest increases in tuition and fees.

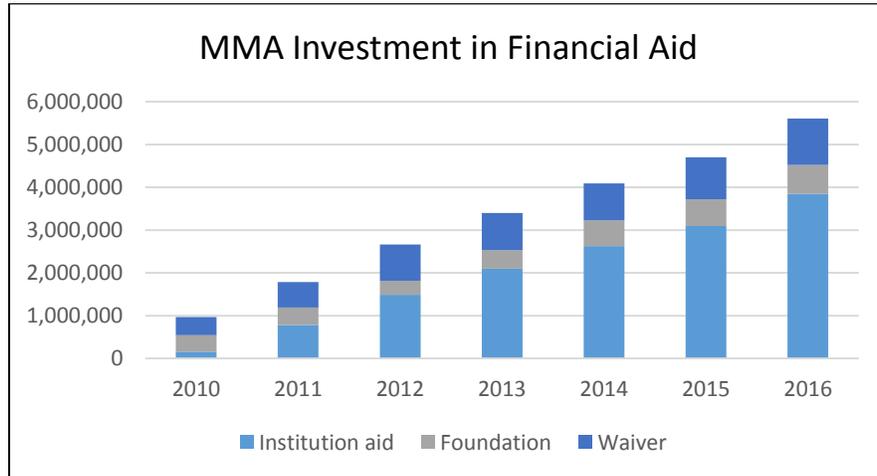


Figure 2 MMA investment in financial aid

This investment in need-based aid has enabled the Academy to cover an increasing portion of undergraduate students' demonstrated need (Figure 3).

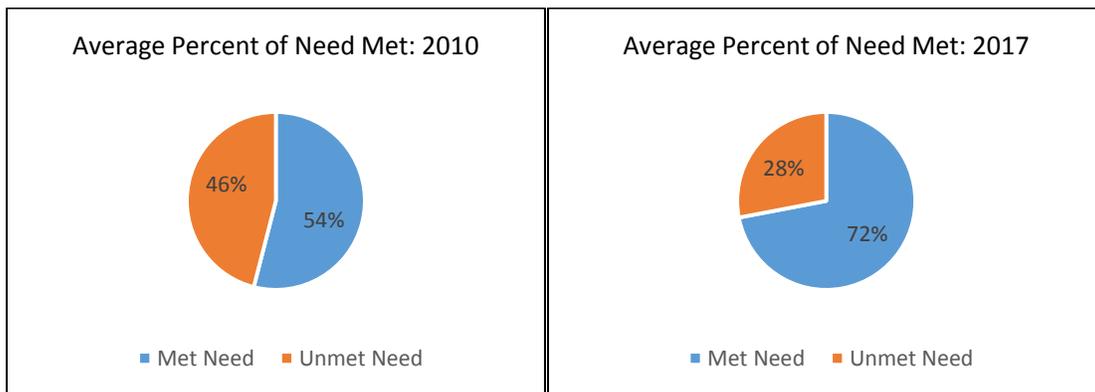


Figure 3 Average percent of need met, 2010 and 2017

In an effort to meet our strategic goals to increase underrepresented populations (Black or African American, Hispanic/Latino, Women) the Academy initiated a targeted, need-based financial aid program. This program includes new scholarships, such as the AHANA³ award and the Dr. Jacqueline P. Fields Scholarship. Additionally, the Academy has sought to meet 98% of need for these targeted populations.

³ AHANA: African-American, Hispanic, Asian, or Native American

Affordability—Planning and Projections

Recognizing the critical need to ensure the affordability of an MMA degree program, the Academy is committed to continuing to offer its students the lowest tuition and mandatory fees as compared to public and private four-year colleges in Massachusetts. The Academy will continue to take measures to manage cost increases to students while also continuing to make financial aid available to offset these expenses. Throughout the current agreement, the Academy will increase annual institutional financial aid by approximately \$3 million by 2023.

In addition, the Office of Advancement will continue to seek funding by building relationships with industries served by the Academy’s mission and by strengthening relationships with alumni. A ten-year, \$50 million comprehensive fundraising campaign is underway that will provide \$10 million in ongoing scholarships to support student need and earmark \$20 million to build the permanent scholarship endowment. The projected financial aid increases are shown in Figure 4. Until such time as the underrepresented targets are met, the Academy will continue to meet 98% of need for these targeted populations and strive to meet 75% overall.

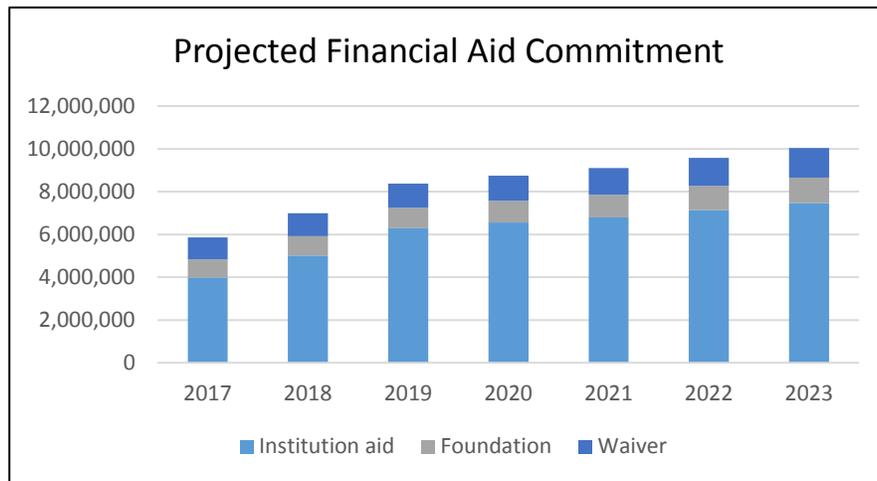


Figure 4 Projected financial aid commitment

Affordability—Performance Indicators

The Academy’s success in maintaining a low cost of education for students and meeting student financial aid need can be measured by performance indicators set forth in the voyage plan.

Student Charges.

As indicated above, throughout a period of decreasing state support the Academy has carefully controlled increases in tuition and fees. The resulting financial challenges continue, but the Academy plans to remain the lowest among its state university and maritime academy peers (Table 7).

Table 7. Published in-state undergraduate tuition and mandatory fees

Institution Name	2016-2017
University of Massachusetts-Amherst	\$ 14,972
University of Massachusetts-Lowell	\$ 14,308
University of Massachusetts-Boston	\$ 13,436
University of Massachusetts-Dartmouth	\$ 13,190
Massachusetts College of Art and Design	\$ 12,200
Fitchburg State University	\$ 10,134
Massachusetts College of Liberal Arts	\$ 9,876
Salem State University	\$ 9,736
Bridgewater State University	\$ 9,628
Framingham State University	\$ 9,344
Westfield State University	\$ 9,276
Peer Maritime Academies*	\$ 9,240
Worcester State University	\$ 9,202
Massachusetts Maritime Academy	\$ 8,006

Data Sources:

All data sourced from Massachusetts DHE except for data on the state maritime academies (California, Maine, SUNY).

State maritime data sourced from IPEDS Student Charges (final release data)

IPEDS: Price of attendance for full-time, first-time undergraduate students (academic year programs): Published in-state tuition and fees.

*Average of California State University Maritime Academy, Maine Maritime Academy, and SUNY Maritime College

Financial Aid.

The Academy is committed to providing the highest possible levels of financial aid to meet student need. In an effort to do so while also striving to increase diversity in the student body, the voyage plan sets aggressive goals for increasing financial aid (See Figure 4 above). In the 2017-2021 strategic plan, performance indicators for financial aid are as follows:

- Remain the lowest in tuition and mandatory fees among all public four-year colleges in Massachusetts
- Increase institutional and private need-based financial aid by \$3 million by 2023
- Continue program to support underrepresented populations (98% of need met) to reach and maintain enrollment through philanthropic and institutional funds
- Once targets are met, reassess overall unmet needs for the student body

III. College Completion

To ensure each entering cohort is prepared to succeed, the Academy effectively identifies applicants for its degree programs. The number of applicants is gradually increasing, and the number of these students who enroll has increased substantially. Such trends are likely affected by the very favorable rankings on the employability of graduates and return on investment, both recognized by prospective students and their families as positive indications of the effectiveness of MMA's specialized programs. And

throughout the current period of growth, Massachusetts Maritime Academy has sustained a high college completion rate.

College Completion—Current Status

A significant factor in the excellent college completion rate of students at the Academy is the regimental system, which provides support through leadership and mentorship to students as they progress through their degree programs. The regimental structure also enables staff to identify and effectively intervene on behalf of struggling students, doing so in a timely and effective manner that helps ensure their success.

Retention rates are consistently high and continue to compare favorably to those at peer institutions, as seen in Table 8.

Table 8. First- to Second-Year Retention Rates Since 2008: MMA and Peers

Institution Name	COHORTS						
	2008	2009	2010	2011	2012	2013	2014
State Universities							
<i>Massachusetts Maritime Academy</i>	86%	85%	90%	89%	85%	89%	93%
Bridgewater State University	82%	81%	81%	81%	81%	81%	79%
Fitchburg State University	77%	78%	73%	75%	78%	77%	75%
Framingham State University	73%	75%	74%	74%	73%	75%	74%
Massachusetts College of Art and Design	88%	89%	90%	88%	84%	89%	92%
Massachusetts College of Liberal Arts	74%	74%	72%	75%	79%	78%	74%
Salem State University	75%	70%	73%	74%	78%	81%	80%
Westfield State University	79%	80%	80%	81%	79%	77%	78%
Worcester State University	77%	75%	80%	78%	80%	82%	77%
Maritime Academies							
<i>Massachusetts Maritime Academy</i>	86%	85%	90%	89%	85%	89%	93%
California Maritime Academy	76%	81%	86%	82%	82%	83%	82%
Maine Maritime Academy	79%	79%	73%	74%	75%	78%	82%
SUNY Maritime College	74%	79%	76%	80%	79%	85%	87%

Source: IPEDS Retention rates, Entering Class (final release data): full-time retention rate
 FTFT=first-time, full-time

The Academy's graduation rate is also high, reflecting a significant overall increase over the past eight years (See Table 9). Although comparative data for other schools is not yet available, for the fall 2010 cohort, the Academy's six-year graduation rate was 76%.

Table 9. Six-year Graduation Rate Comparison: MMA vs. Peers

Institution Name	Fall Cohorts							
	2002	2003	2004	2005	2006	2007	2008	2009
State Universities								
<i>Massachusetts Maritime Academy</i>	55%	63%	67%	65%	61%	67%	70%	72%
Bridgewater State University	51%	54%	53%	52%	54%	58%	59%	58%
Fitchburg State University	51%	52%	52%	47%	51%	50%	57%	53%
Framingham State University	49%	52%	51%	52%	52%	51%	51%	56%
Massachusetts College of Art and Design	55%	65%	56%	68%	65%	74%	70%	72%
Massachusetts College of Liberal Arts	57%	50%	51%	53%	47%	57%	52%	52%
Salem State University	43%	43%	42%	42%	45%	46%	46%	50%
Westfield State University	59%	58%	60%	58%	60%	59%	63%	63%
Worcester State University	47%	44%	45%	47%	51%	49%	53%	51%
Maritime Academies								
<i>Massachusetts Maritime Academy</i>	55%	63%	67%	65%	61%	67%	70%	72%
California Maritime Academy	62%	69%	61%	62%	58%	59%	54%	58%
Maine Maritime Academy	53%	67%	65%	69%	74%	74%	70%	59%
SUNY Maritime College	49%	52%	51%	47%	44%	50%	47%	56%

Source: IPEDS Graduation rate – Bachelor degree within 6 years, total [final release data]

A breakdown of four-year and six-year graduation rates at the Academy shows that these rates approach those established by strategic planning (See Table 10).

Table 10. MMA Graduation Rates: First-time, Full-time Freshmen

Term of Entry	Entering Cohort	Cohort Less		Cumulative Percent Graduated	
		Exclusions	4-Year	5-Year	6-Year
Fall 2003	249	249	47%	62%	63%
Fall 2004	237	237	50%	63%	67%
Fall 2005	264	262	46%	61%	65%
Fall 2006	247	246	44%	57%	61%
Fall 2007	262	262	49%	64%	67%
Fall 2008	296	295	55%	67%	70%
Fall 2009	298	296	63%	69%	72%
Fall 2010	282	279	61%	73%	76%

Notes: Graduation rates reflect first-time, full-time bachelor's degree-seeking students as reported to IPEDS. (Source MMA Key Data Elements 2016-17, p. 28)

The Academy contracts the services of a consultant to study and provide suggestions for retention efforts across campus, looking at the academic programs, student life, and administration to identify areas for improvement. Partly as a result of this process, the Academy's retention rate and six-year graduation rate remain high. To date, the consultant has identified key areas for improvement, which the Academy has addressed successfully, including the following:

- Issues with accessing advising. This problem was addressed by hiring two, part time professional academic advisors who are now on staff to assist students by appointment and on a drop-in basis.
- Concerns with advanced standing transfer students having accurate degree completion plans. This issue has been addressed by instituting a process for successfully tracking and

communicating with affected students, partly through the efforts of the part-time academic advisors (see above).

- Issues with online course registration. This issue has been addressed by dedicating technology and human resources to the problem.

College Completion—Planning/Projection

Historically, Massachusetts Maritime Academy has maintained high college completion rates, and the Academy continues to do so by retaining the regimental system and making strategic decisions designed to ensure student success. In addition, the Academy dedicates resources to a robust academic support system that includes mentoring, advising, tutoring, and an expanding array of student services that establish a supportive climate and provide timely and effective information and resources for the student population.

Retention Projections/Initiatives.

The consulting firm hired to assist the Academy with retention and graduation issues will continue to visit the campus annually to meet with stakeholders involved with activities that support retention. The Academy projects continued high retention rates consistent with the current rate of between 88-89%.

Graduation Projections/Initiatives.

Initiatives underway to reinforce student learning and help student maintain normative progress toward the degree include a recently established peer-assisted learning program, originally grant-funded through DHE and now funded through the Academy's Academic Resource Center. This program will continue to be developed, and intensive specialized tutoring in key courses will be offered as needed to contribute to student success and help the Academy maintain a high graduation rate.

College Completion—Performance Indicators

Retention Rates.

The 2017-2021 strategic plan sets specific goals for retention rates at the Academy, goals consistent with the favorable trend in recent years. The performance indicator for retention is as follows:

- Maintain a first- to second-year retention rate at or above 88%.

Graduation Rates.

Graduation rate performance indicators address both four-year and six-year goals. The indicators are as follows:

- Achieve a weighted average 4-year graduation rate at or above 60%.
- Achieve a weighted average 6-year graduation rate at or above 75%.

IV. Student Learning

Student Learning—Current Status

Over the last several years, the Academy has made significant progress in promoting and utilizing effective practices for implementing assessment and measuring student learning in the academic programs. By establishing the Director of Institutional Effectiveness position and setting constructive goals for improving assessment, the Academy has signaled a commitment to the effective utilization of measurable outcomes to improve student learning. In addition, a campus-wide committee has been established to explore and discuss current and potential assessment measures, fostering a dialogue throughout the campus community that continues to result in improved understanding of the goals and benefits of assessment. The Director provides resources and guidance to inform such efforts, an essential step toward data-driven decision making to ensure program improvement. The work in this vital area continues to progress. To date, an array of direct and indirect measures are in place to assess student learning outcomes (Appendix F).

Student Learning—Planning/Projections

Strategic Additions/Improvements to The Academic Program.

Among the strategic additions or improvements to the academic program are a number of key projects, some underway and others in the planning stages. These projects include the addition of a graduate degree program and the possible addition of an undergraduate program in construction management. Also planned are increases in online course offerings, an expansion of the exchange program, and the construction of a new academic building. Each of these will contribute directly to the Academy's ability to foster student learning.

Sustaining and Strengthening Institutional Effectiveness Efforts.

The Academy is committed to making significant progress in the area of institutional effectiveness, and support for institutional effectiveness is becoming increasingly apparent across campus. Institutional effectiveness, in fact, is one of the five governing objectives in the voyage plan. In addition, it is a tactical objective based upon the idea that "data-driven evidence of student achievement of learning outcomes, success in meeting targets for related performance indicators, and statistical analysis of institutional data for continued improvement" is critical to sustaining the Academy's mission. The Office of Institutional Effectiveness will continue to systematize assessment, offer training and support for best practices, and ensure that useful data are routinely collected and employed in improving student learning.

Leveraging Technology.

Due in part to its highly technical academic programs, the Academy continues to prioritize the effective use of technology for student learning. Improvements and additional resources will continue to keep pace with evolving academic needs. The Division of Technology and Library Services is dedicating to providing an effective and easily utilized computing infrastructure and the essential systems and services necessary to support the Academy's mission and community (See "Infrastructure" below). To that end, the Division strives continually to maintain excellent service, develop reliable and cost-effective services and resources, and offer professional support for teaching, learning, and staff needs.

Student Learning—Performance Indicators

Student learning is central to strategic planning at the Academy and reflected throughout the academic programs, in adjustments made to these programs, and in the creation of new programs or program components.

Implementation of Additions/Improvements.

The voyage plan identifies program additions and improvements that are intended to contribute to student learning. These indicators for additions and improvements are as follows:

- Promote all minors.
- Recruit for and promote new preliminary secondary education teacher certification concentration.
- Await approval from DHE on third MS program.
- Investigate a fourth MS program through DGCE.
- Research clinical doctorate program relating to MMA's global maritime security mission
- Investigate Professional Doctoral programs with other state universities.
- Research potential undergraduate programs that may assist with recruiting underrepresented and female students.
- Expand Fire Fighter 1&2 Certification with Barnstable County.
- Increase online course offerings to 12 or more per year.
- Expand non-credit Emergency Management courses through DGCE with the intent of establishing the academy as the Emergency Management training center for the Northeast.
- Implement new curriculum requirements for EM and MT for class of 2020.
- Expand International Exchange programs at the rate of one per year
- Acquire a new academic building.
- Investigate special police academy certification program through Plymouth County

Implementation of Institutional Effectiveness Measures.

Comprehensive implementation of institutional effectiveness measures across campus are evident in the performance indicators identified in the 2017-2021 strategic plan, which are as follows:

- Continue annual publication of MMA's Key Data Elements & Indicators.
- Work with academic departments to develop/finalize comprehensive assessment plans for undergraduate and graduate academic programs.
- Develop/provide the necessary resources and training for academic programs on creating program assessment plans.
- Execute the administration, analysis and/or reporting of the following internal surveys and evaluations:
 - Survey of Recent Alumni (every 4 years, next due 2018))
 - Career Fair Employer Survey (spring semester)
 - Career Outcomes Survey (6-month report)

- Senior Exit Survey
 - Graduate Student Program Evaluation
 - Co-Op Employer Evaluations
 - Student and Staff Campus Climate Surveys
- Execute the analysis and reporting of external surveys/reports, including HEIRS, IPEDS, Common Data Set, US News and World Report, Peterson’s Survey, Princeton Review, ACT Institutional Questionnaire, Wintergreen Orchard House, College Board, Barron’s, NEBHE, NCAA, and Military Friendly Schools
- Hold three Assessment Committee meetings per fall and spring semesters
- Provide one workshop each semester to support institutional effectiveness efforts.
- Maintain data/ reports on the Institutional Effectiveness web page.
- Conduct self-studies and external reviews of academic departments/majors.
- Systematically collect, analyze, and report data and trends and utilize results for data-driven improvement.
- Support specialized assessment and data analysis.
- Continue conducting annual risk assessments as part of year-end annual reporting.

Implementation/Impact of Technology.

Through strategic planning, the implementation and impact of technology is effectively directed and managed, with specific performance metrics established and regularly updated. These performance indicators are as follows:

- Promote the effective utilization of the Academy's enterprise systems by providing user training and exploiting the full capabilities of these systems.
- Ensure that the Academy website is fast, reliable, and mobile optimized, in addition to providing a robust Content Management System (CMS) for ease of updating.
- Integrate cloud-based systems and services which provide value to the campus community, whenever possible.
- Utilize a remote colocation data center to provide system recovery in the event of a disaster and with the potential to become the Academy’s primary data center.
- Advance the use of virtualization technology to reduce the physical server footprint, reduce energy consumption, improve system management efforts, and reduce hardware costs.
- Provide a digital media infrastructure which will extend videoconferencing and lecture capture services across the campus.
- Provide state-of-the-art audio-visual systems in the classroom to enhance teaching and learning.
- Promote the use of course management tools, such as Blackboard LMS, video streaming, and online assessments, to provide the building blocks for the development of online programs.
- Fully leverage the capabilities of all campus simulation systems while keeping abreast of new simulation technologies which could be beneficial to the Academy.
- Continue to assess risks to the Academy and mitigate any risks identified whenever possible.
- Grow the Library’s electronic collections in lieu of print collections for ease of use and cost savings.

V. Workforce Alignment

As a university with a mission to serve the maritime industries and a range of other specialized industries, workforce alignment is not only an obvious emphasis in our academic programs but also an important factor in the Academy’s continued success in producing highly skilled graduates.

Workforce Alignment—Current Status

The Academy achieves workforce alignment by incorporating a variety of components into the educational experience of students, components that reflect the Academy’s distinctive mission. Such educational opportunities as cooperative education, commercial shipping, sea term, experiential learning, and international study complement the curricula and have been carefully designed to combine solid academic coursework with innovative practical instruction directly relevant to industry. As a result of these educational opportunities, students return to the classroom with a fresh perspective, able to call upon valuable experience to contribute to discussions within the learning environment.

The Department of Career and Professional Services also plays a key role in workforce alignment by making cooperative education and commercial shipping opportunities available to students. These opportunities, required by each of the degree program curricula, require a close working relationship with the academic departments. Whether through sea term participation, cooperative education, experiential learning, or a combination of these educational components, students in each degree program benefit from the practical learning possible within workforce environments. For each degree program, these experiences are selected and designed to expose students directly to workplaces that provide them with valuable opportunities to apply and build upon the academic knowledge and practical skills they learn on campus. Following each such experience, students produce a comprehensive report, a project that reinforces learning by requiring students to reflect upon and synthesize their learning. Table 11 shows the number of these experiences required by each undergraduate degree program.

*Table 11. Number of Practical Learning Projects Required by Each Degree Program**

	EM	ESE	FE	IMB	ME	MSEP	MT
Sea Term					3		3
Cooperative Education**	2	2	3	2		2	
Co-op. (Commercial Shipping)					1		1
Experiential Learning	1			1		1	
Total	3	2	3	3	4	3	4

*EM=Emergency Management; ESE=Energy Systems Engineering; FE=Facilities Engineering; IMB=International Maritime Business;

ME= Marine Engineering; MSEP=Marine Safety & Environmental Protection; MT=Marine Transportation

**In some cases, a student may complete a fourth Sea Term instead of a Commercial Shipping Co-op.

Source MMA Catalog 2016-2017: pp. 49-55

Commercial shipping and cooperative education opportunities result in many students receiving job offers from the companies or organizations with which they are placed. The percentage of graduating seniors reporting that their employment offers were the direct result of these education opportunities was 29% in 2015 and 27% in 2016.

In addition, a consistent rapport with industry helps the Academy maintain its relevance and prepare its graduates with knowledge and skills that reflect current trends in the workplace. The excellent communication network as well as the widespread placement of alumni within industries served by MMA degree programs make this possible. This network is further developed by the degree program

cooperative education and experiential learning requirements, which generate and reinforce industry ties and partnerships. In addition, advisory boards exist for both the Department of Career and Professional Services and the degree programs. These boards comprise industry representatives whose input on academic and practical learning is invaluable to maintaining program relevance and making improvements in response to trends in the workforce. They are also able to provide information on potential partnership and practical learning opportunities, further expanding the Academy's network and contributing to the ongoing success of the Academy in achieving workforce alignment.

A key indicator of the Academy's continued success in ensuring effective workforce alignment within its degree programs is the evidence collected by means of the career outcomes survey conducted annually two weeks prior to graduation. The survey identifies graduates employed in a job related to their degree, those pursuing graduate or continuing education, those entering the armed forces, and those participating in volunteer work. Over the last three years, the response rate for this survey has ranged between 82-85%, representing a significant proportion of students graduating during this period. The reported rate of placement among graduates taking the survey was 61% in 2014, 72% in 2015, and 67% in 2016. Six months after graduation, Career Services locates missing data on graduates, at which point the placement (career outcomes) rate increases significantly, with 88% of the 2016 class employed by that time.

In response to observations regarding student career paths and the demand for certain qualifications among graduates of specific programs, MMA has introduced minors and concentrations to enhance student preparedness for the workforce. A Massachusetts Teacher Concentration, available for the first time in fall of 2016, was developed after it became apparent that students from within the Marine Science, Safety and Environmental Protection major are increasingly interested in careers in secondary education. Within the Emergency Management Program, a minor was first offered in fall 2016 focusing on Homeland Security. Offered to all majors, the minor was developed to address trends within specific industries that require graduates to possess a solid background in this area of study.

The Center for Maritime and Professional Training (CMPT) also contributes to workforce alignment. Currently, CMPT is positioned to provide professional development and regulatory mandated courses for professional seafarers from Massachusetts and throughout the nation. The Center is constantly working to maintain compliance in current programs and to develop new training programs as new regulations develop. CMPT also has cooperative agreements with third-party training providers, utilizing their services to offer OSHA required courses to general industry.

The Academy also seeks to establish workforce partnerships within industry through its Center for Maritime and Professional Training. For example, the Academy is expanding its partnership with FM Global to create an FM Global Laboratory and with Noble Drilling to develop a comprehensive marine pollution prevention training program. The Academy is also engaged in developing a hydrokinetic research platform that may enhance workforce development opportunities. And recently, a \$50K grant was received from the Massachusetts Clean Energy Center to develop training programs for workers in the offshore wind energy industry. Such partnerships reflect the close ties between the Academy and industry as well as the outstanding opportunities for collaboration and future student employment.

Career Preparedness Initiatives.

The Academy seeks continuing improvement in workforce alignment and seeks to develop and promote initiatives to ensure success in this vital area. One initiative, for example, under consideration for the program in Marine Safety and Environmental Program is a concentration within the major that will afford students the opportunity to complete courses directly relevant to the cruise ship industry, which has historically employed program graduates as environmental health and safety officers.

An exciting new initiative with Roxbury Community College may result in considerable benefit to both institutions. While the Academy has a long history of graduating engineers who operate and manage high-rise building and hospitals in the Commonwealth, there currently exists a shortage of building automation technicians and engineers—well paid positions with potential for upward growth. The Academy has the necessary lab facilities and curricula established to assist Roxbury Community College in creating an associate's degree program that will provide students with the work skills to fill such positions, and discussions are underway between the two institutions regarding the logistics and resource needs to support a collaborative program without impinging on the educational programs in place at the Academy.

Contributing significantly to the career preparedness of MMA undergraduate students are the cooperative education and international exchange programs. Recognizing the positive impact of these educational experiences for students, the Academy continues to explore opportunities to expand both programs. Based on the projection of 1900 enrolled students in 2021, the Academy anticipates a corresponding increase in cooperative education opportunities for non-licensed majors, a potential increase of 18-22 company partners by 2021. Similarly, the Academy plans to develop new international exchange programs. In addition to the current partnerships with Dalian Maritime University (China), Shanghai Maritime University (China), International Maritime University of Panama (Panama), and Metropolitan University College (Denmark), the Academy plans to increase exchange programming incrementally, adding 1-2 programs by 2023.

Upon completion of a Massachusetts Clean Energy Center (MCEC) workforce development study, the Center for Marine and Professional Training (CMPT) is preparing to develop and offer the Global Wind Organization's Basic Safety Training course. This course consists of five modules and follows industry recognized best practices. It is mandatory for all personnel who are required to board an offshore wind turbine to carry out their job functions. Many of these modules are similar in content to courses currently provided by CMPT.

Other CMPT Initiatives.

CMPT is also currently involved in executing a grant from the Massachusetts Clean Energy Center to determine the Health and Safety training requirements for the offshore wind industry. CMPT's component is part of a larger study being carried out in collaboration with Bristol Community College and UMASS to determine the number and type of jobs that the development of a 1600MW offshore wind facility could be expected to create. CMPT's portion of this project is expected to be completed by November 2017. CMPT also intends to develop USCG mandated refresher courses for seafarers in the areas of Survival Craft Proficiency, Basic Safety, and Advanced Firefighting. All mariners who sail in international waters will be required to complete these courses every five years as part of their

credential renewal process.

The Center for Maritime and Professional Training focuses its planning efforts on specific educational components that serve industry. Among initiatives planned by CMPT are following:

- Determine level of demand for GW Basic Safety Training
- Develop USCG mandated refresher courses
- Increase enrollment in Manned Models program. Course modification to include updated assessments has been sent to USCG for approval. Continue to provide best possible service to existing students. Commence more aggressive marketing once course mod is approved.
- Renew approvals of Personal Survival Techniques, Personal Safety and Social Responsibility and Proficiency in Survival Craft.
- Develop Basic Safety Refresher and Revalidation Courses.
- Develop Advanced Firefighting Renewal
- Complete online Train the Trainer Course
- Maintain regulatory compliance with USCG.
- Continue to develop new business with existing clients such as FM Global and potential clients such as Twin Rivers Technology.
- Complete current Massachusetts Clean Energy Center workforce development grant (See “Workforce Alignment”).
- Begin development of Global Wind Organization Basic Safety training courses pending outcome of workforce development study.
- Continue to provide non-STCW (Standards for Training, Certification and Watchkeeping) professional development courses such as Noble Oily Water Separator/Oil Record Book training.

Workforce Alignment—Performance Indicators

- Expand cooperative education programming in Massachusetts, adding 18-22 new partnerships by 2021
- Meet increasing demand for placement opportunities, placing all students in winter and/or summer cooperative education or commercial shipping experiences required for graduation.
- Increase the number of students participating in workshops (résumé building, interview, career fair preparation, job search strategies, federal job search) offered by the Department of Career and Professional Services by 10%
- Expand exchange programs with foreign nations, adding 1-2 new programs by 2023
- Strive to increase six-month career outcomes rate among graduates to 90%
- Engage more employers and develop additional partnerships by effectively conducting research

VI. Preparing Citizens

The Academy has a long history of effectively preparing its graduates with a civic-mindedness and global consciousness, partly due to the international impact of the industries in which they are hired and partly due to the unparalleled professionalism and responsibility instilled in students as participants in the regimental system.

Preparing Citizens: Current Status

Throughout their tenure at the Academy, students are presented with many opportunities to engage in civic activities, whether during the academic semesters or as part of practical learning experiences, such as cooperative education, experiential learning, or sea term. Many such opportunities call for volunteers, while others involve civic engagement integrated into the degree programs, regimental system, or athletic programs. As a result, all students will have participated in a range of civic learning activities by the time they graduate, activities that prepare them to participate effectively as citizens and employees within a global workforce. The Academy's tradition of required civic learning and engagement aligns well with the statewide initiative, and the ongoing process of incorporating and accounting for opportunities for civic involvement will yield positive results in this important dimension of the student experience at MMA. The Academy actively promotes student involvement in volunteerism and fundraising for charitable causes, requiring each incoming student to complete a minimum of ten hours of community service in the first year. Most students, however, exceed this requirement either individually or as members of clubs sponsored by the student government or athletic teams. For example, the Association of Student Engineers (ASE) sponsors a food drive and a coat drive competition prior to the Thanksgiving and Christmas holiday seasons, respectively. The Regimental Band and Honor Guard participate regularly in local, regional, and sometimes national events as ambassadors of the United States, the Academy, and the community. Students also participate in local and regional emergency planning committees, raise funds for the Children of Military Families, and volunteer with Big Brothers & Big Sisters, the Cape & Islands Special Olympics, and the Pan Mass Challenge. In addition, the Academy hosts two very successful blood drives each semester. Through its longstanding partnership with the Massachusetts Department of Children and Families (DCF), the Academy also provides students with opportunities to participate in ongoing community projects, an annual DCF picnic, and annual Thanksgiving and Christmas volunteer and giving programs. Students also volunteer as tutors at the Boys and Girls Club in Wareham. Many of our community outreach programs are, in fact, organized and managed by students. As a result, a new senior position has been created within the Regiment of Cadets – that of Regimental Community Service Officer.

One of the core principles of being a student-athlete is serving as a role model in three areas: competition, the classroom and in the community. By promoting these principles, the Student-Athlete Advisory Committee (SAAC) fosters a deepened sense citizenship not only within the campus community but also within those communities in which the student-athletes reside. Over 400 student-athletes participate in activities and initiatives under the leadership of the SAAC, which provides them with opportunities for community engagement, enhancing the total student-athlete experience. The SAAC promotes student-athlete welfare and fosters a positive student-athlete image while maintaining the rules and regulations of the Massachusetts State Collegiate Athletic Conference (MASCAC) and NCAA Division III as well as the tenets of the MASCAC philosophy. SAAC members engage not only the athletic community but also the entire campus community in various community service and charitable endeavors throughout the academic year. Over the last five years alone, the Buccaneer SAAC has established partnerships with such regional and national organizations as the Pat Tillman Foundation, the Herren Project/Project Purple Initiative, Special Olympics of Cape Cod & Massachusetts, the Bourne Food Pantry, Children's Cove, and the Riverview School, partnerships that foster interaction between these groups and student-athletes.

Reinforcing this emphasis, the Academy updated its institutional student learning outcomes in 2016 to better define the expectations for civic and global learning. The outcomes now include a basic knowledge, understanding, and appreciation of diverse social and political values; a capacity for ethical

reasoning, including the ability to make decisions and act in a socially responsible manner; the ability to integrate knowledge and skills in civic and global contexts; a capacity for empathy, including an appreciation for diversity and inclusion; and a capacity for civic action, including the ability to engage in service that benefits the public good. The updates explicitly incorporate civic and global learning into the core competencies and learning outcomes, and related assessment measures are currently being updated and/or developed. For example, a series of questions about civic learning and engagement were added to the annual senior exit survey. On this survey, preliminary findings suggest that Academy programming is effective in preparing students to be global citizens (Figure 5).

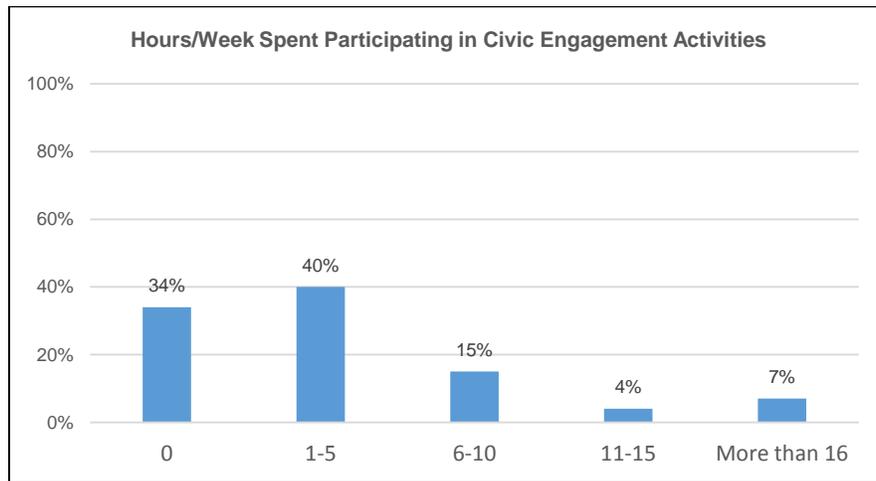


Figure 5 MMA student responses to survey question focused on participation in civic engagement activities

About two-thirds of MMA seniors are participating in civic engagement activities most often for 1 to 5 hours during a typical 7-day week. Recent comparative national figures indicate that slightly less than half of students (as measured by student FTE) are involved in civic engagement activities, community service, or service-learning while enrolled (Source: Campus Compact 2015 Service Statistics, national data). For students who are engaged in these activities, the average hours spent participating per week is 3.8. Therefore, MMA students' level of civic engagement appears to be slightly above national norms.

A majority of seniors (71%) reported that participation in civic engagement activities while at MMA contributed to their capacity for civic action to at least “some” degree (Figure 6).

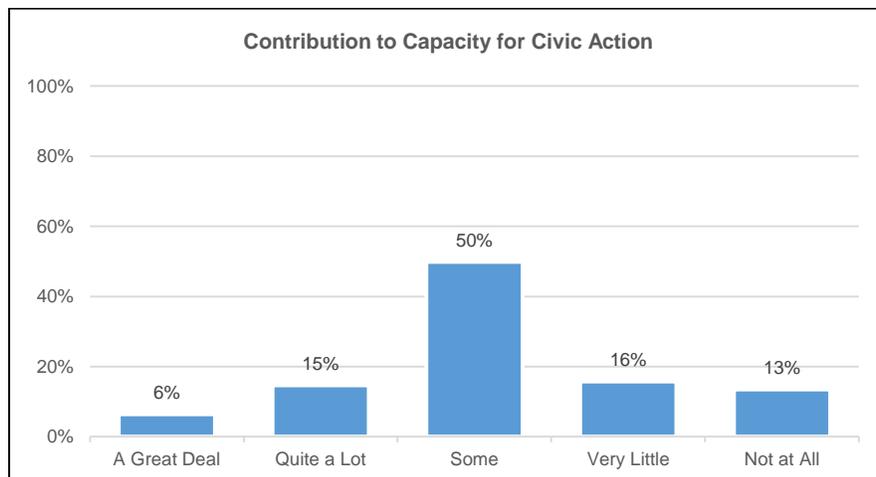


Figure 6 MMA student responses to survey question focused on capacity for civic action

Additionally, on the MMA Career Fair Employer Survey, a majority of those surveyed during both fall 2016 (58%) and spring 2017 (65%) indicated that MMA students had a “high” capacity for civic action⁴.

Flagging civic learning course sections in the state’s Higher Education Information Resource System (HEIRS) began in academy year 2016-2017, and data was shared at the May 22, 2017 state-wide civic learning conference organized by the Department of Higher Education (DHE). Select fall 2016 results, based on a custom data report prepared by DHE staff, suggest that the percentage of courses flagged as civic learning sections at MMA exceeds percentages at other state universities, with 18% identified as having a civic learning focus compared to 5% at all Massachusetts State Universities. Similarly, a high percentage of MMA undergraduates (72%) were enrolled in at least one civic learning course (with or without engagement) compared to 16% at all Massachusetts State Universities.

Preparing Citizens: Planning/Projections

Identification of Courses Qualified as Civic Learning/Engagement.

Courses are currently under review for the purposes of indicating civic learning and civic engagement requirements and opportunities. The rubric used for this purpose has been approved through governance and is being employed by departments as they review their courses (Appendix G). In an ongoing effort to complete the process of identifying civic learning and civic engagement in the curricula, the Director of Institutional Effectiveness reminds academic departments each semester to review courses utilizing this rubric.

In addition, the Academy encourages professional development for faculty to be involved in civic learning and engagement, including both student support and community outreach. The Academy has also offered to host a civic learning conference in the upcoming academic year to provide an opportunity for professional development and a forum to discuss best practices with regard to civic learning and engagement across public educational institutions within the Commonwealth.

Assessment Plan for Civic Learning/Engagement.

The Director of Institutional Effectiveness is currently planning further updates to campus surveys that can provide indirect measures of student learning and engagement. Departments and programs are also being asked to identify courses in which students participate in civic learning and/or civic engagement and to update (or in some cases develop) assessment plans to measure program learning outcomes that reflect the civic learning and civic engagement outcomes recently added to our revised campus-wide learning outcomes. To support this process, the Director of Institutional Effectiveness will continue to offer training on the development of assessment plans and support departmental progress in their creation and revision.

⁴ Response choices: high, medium, and low (missing/not applicable responses ignored in calculation of percentages)

Completion of Course Inventory for Civic Learning/Engagement.

Courses offered in fall semester 2016 were identified using the rubric designed for this purpose and approved by governance. The process will continue in spring 2017 and thereafter.

Progress on Assessment of Civic Learning/Engagement.

Progress in assessing civic learning and engagement will be achieved in upcoming semesters. Relevant questions have been added to the senior exit survey for determining student perceptions of civic learning and engagement as well as the extent to which they believe they have benefitted from such opportunities. Preliminary results from the survey indicate that at least 2/3 of respondents believe that civic engagement activities have in some way contributed to their capacity for civic action and that nearly 2/3 believed that student organizations encourage and support participation in civic engagement activities.

VII. Eliminating Disparities

Consistent with the need in higher education to address and eliminate disparities in the performance and success of college students identifying with subgroups of the student population, the Academy is fully committed to action, which includes systematic tracking of student performance and integrated approaches to improving student achievement wherever disparities exist.

Eliminating Disparities: Current Status

As an area of concern at the Academy, the success among undergraduate Students of Color is the subject of ongoing discussions and actions.

In addition to the federally mandated four-year average Student Right-to-Know 6-year graduation rates reported through IPEDS, the Academy also calculates four-year weighted average rates for specific student subgroups of concern. While rates compare favorably by gender, there are gaps by race/ethnicity. Currently, there is a gap of 15 percentage points between the weighted average six-year graduation rate for White students (71%) and the corresponding rate for Students of Color (56%). The rate gap between White students and Underrepresented Students (i.e., Hispanic/Latino and Black or African American students) is currently at 22 percentage points (Table 12).

Table 12. Weighted average six-year graduation rates for recent cohorts (four-year periods): URM versus White Students

Cohorts	URM Students		White Students		Gap Between White & URM Students
	Total # of students (less exclusions)	Weighted Average 6-Year Graduation Rates	Total # of students (less exclusions)	Weighted Average 6-Year Graduation Rates	
2007-2010	35	49%	1,009	71%	-22
2006-2009	32	50%	985	68%	-18
2005-2008	27	56%	982	66%	-10
2004-2007	30	57%	934	66%	-9

Note: URM = underrepresented students; includes Hispanic/Latino and Black or African American students

Eliminating Disparities: Planning/Projections

Initiatives to Understand Achievement Gap.

The Academy will create a committee, who will be charged by the President to undertake the necessary research to ensure that the achievement gap is well understood and that the appropriate measures are in place and effectively employed to collect data to inform improvement in this critical area. The committee will begin work in the upcoming academic year and report its progress to DHE in fiscal year 2018. Among the initiatives that will provide guidance and information to this committee are the following:

- The President's Task Force on Diversity and Inclusion
- The Office of Inclusive Excellence and International Programs
- The Annual Campus Climate Survey
- A planned survey conducted to determine reasons for Students of Color withdrawing from MMA
- A study to compare the success of similarly prepared cohorts of Students of Color to their white counterparts at the Academy

Initiatives to Decrease Achievement Gap.

Given the small number of Students of Color in the student population, the performance of a single individual can dramatically affect measures of retention or graduation rates. The Academy, however, continues to track student success while undertaking a robust program to increase diversity and establish a campus climate that effectively supports students as they seek to achieve their goals. In addition to the initiatives underway to increase diversity, the Academy will continue to seek solutions to address any existing disparities.

Eliminating Disparities: Performance Indicators

Achievement Gap Figures.

As a tactical metric for addressing the achievement gap, the Academy's voyage plan calls for consistent monitoring of any subgroups who might benefit from measures to improve their success. The plan calls for the Academy to do the following:

- Reduce the gap (currently 15 percentage points) in weighted average six-year graduation rates between White students and Students of Color by 50% over the next five years.
- Reduce the gap (currently 22 percentage points) in weighted average six-year graduation rates between White students and Underrepresented Students by 50% over the next five years.
- Maintain comparable (+/- 3%) weighted average six-year graduation rates for both female and male students.

VIII. Human Resources

Human Resources: Current Status

The voyage plan makes increasing diversity among faculty and staff a governing objective. To that end, deliberate recruitment strategies, screening committee training, and curriculum changes have been implemented to ensure steady progress toward meeting this commitment.

Targeted recruitment through job advertisements in trade journals focused on women and minorities cannot alone yield diverse applicant pools. The Academy therefore takes additional measures to attract interest in its employment opportunities. For example, the Academy shares all professional job postings with historically black colleges and with the NAACP. Coupled with a screening process that focuses solely on each applicant's qualifications and experience, not on the individual's name, address or affinity groups, such measures have increased diversity in applicant pools and resulted in a corresponding increase in the diversity of individuals choosing to work at MMA. To further augment these efforts, the Academy has diversified some of its general education courses, offering such electives as African American literature, a strategy that has the additional benefit of promoting diversity awareness within the student body.

The Academy's targeted recruitment efforts have helped fill key leadership positions, such as Athletic Director and Assistant Commandant, both of whom now serve as role models for the non-white male student population. Over time, in fact, the Academy has improved its recruitment of diverse full-time faculty and staff, as the Table 13, based on IPEDS information, indicates.

Table 13. Increases in full-time staff diversity

	Female Faculty & Staff	Minority Faculty & Staff
2011	36%	9%
2016	39%	14%

In the spring of 2015, the President established a Taskforce on Diversity and Inclusion, which comprises administrators, faculty, staff, and students. The taskforce is charged with improving the campus culture and academic environment and with using data to understand and eliminate barriers to diversity and inclusivity across campus. The Taskforce's main focus over the past year has been on outreach and programming, although topics discussed have included deferred action for childhood arrivals (DACA), the implementation of a campus climate survey, the creation of a taskforce web site, and such student-driven issues as grooming standards for students of color.

Human Resources: Planning/Projections

Staff Development on Affirmative Action Policies and Programs.

All faculty, staff, and students at Massachusetts Maritime Community are required to complete Title IX and affirmative action training, administered according to a specific schedule. In addition, the President's Taskforce on Diversity and Inclusion undertakes to promote diversity and inclusiveness throughout campus. Finally, a campus-climate survey will be conducted bi-annually, and the results will be reviewed for strategic planning purposes.

Taskforce Goals.

In the upcoming year, the Taskforce will continue to serve as the President's working group with a focus on identifying achievement gaps; however, it will also strive to engage students and staff members in grassroots issues relating to diversity.

Recruitment.

Through combined recruitment and retention efforts, the Academy seeks to steadily diversify the full-time employee population to levels to 45% female and 19% minority by 2021.

Human Resources: Performance Indicators

Successful implementation of key affirmative action policies and programs.

The Academy will measure its progress according to the following:

- The employees reporting via the campus climate survey that they are satisfied with MMA employment
- The percentage of employees reporting agreement via the campus climate survey that MMA provides a supportive work environment

Diversity of faculty and staff.

The 2017-2021 strategic plan establishes specific goals for the diversity of faculty and staff. These goals are as follows:

- Achieve 44% gender diversity of faculty and staff by 2021
- Maintain no less than 40% gender diversity of faculty and staff for 2017-2020
- Increase faculty and staff ethnic diversity by 1% each year to reach 17% by 2020

IX. Financial Resources

Financial Resources: Current Status

For its operation, the Academy relies on three major sources of revenue: state appropriation (\$16 million), tuition and fees (3.4 million), and enterprise accounts—philanthropy and fundraising (4 million).

Relative to fiscal year 2008 figures, total 12-month FTE student enrollment has increased 45% while the state appropriation has only increased by 17%. Overall, these trends have resulted in a decline in the state appropriation per FTE student of 19%. The state appropriation per student FTE was \$10,451 in fiscal year 2008 before declining to \$8,448 in fiscal year 2016.

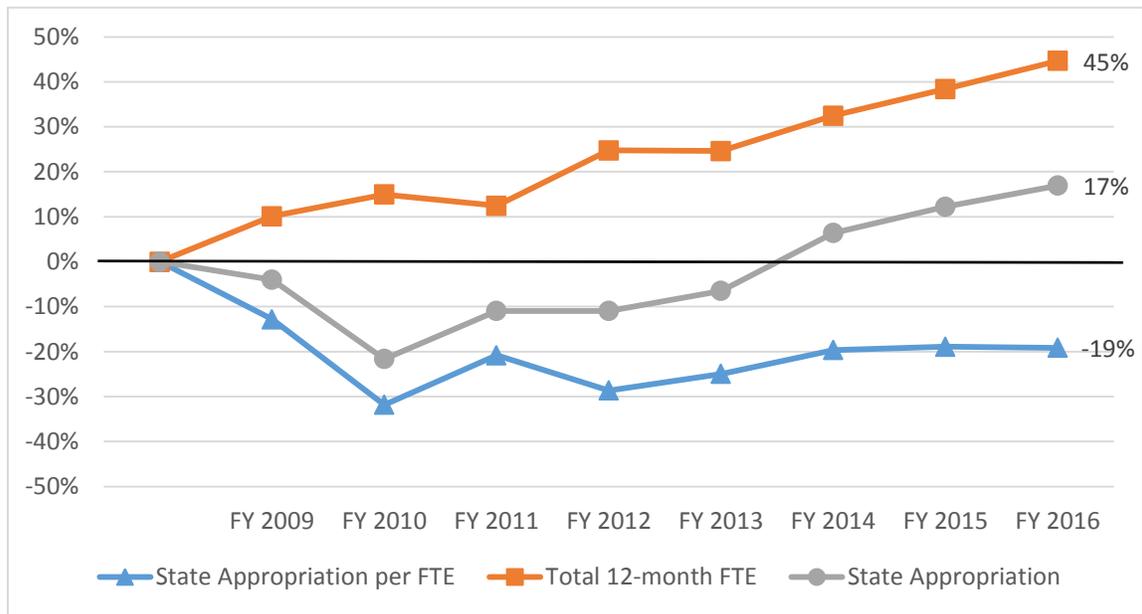


Figure 7 Change in MMA state appropriations, FTE enrollment, and appropriations per FTE relative to FY 2008 (FTE data sourced from IPEDS; State appropriations based on Massachusetts General Appropriations Act (GAA) figures)

Over the past several years, a declining portion of the total cost of education has been covered by the state appropriation. In 2008, the appropriation covered 50% of this cost, whereas in 2016 it covered only 33% (Figure 8).

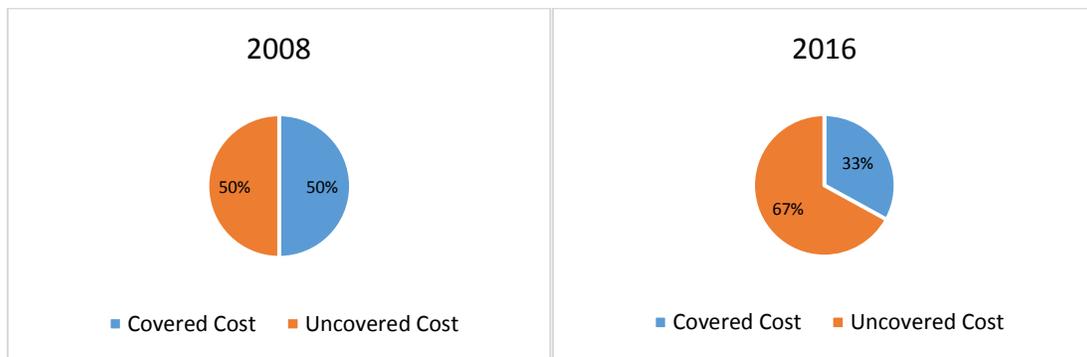


Figure 8 Proportion of the Cost of Education Covered by State Appropriation in 2008 vs. 2016

Since 2008, the Academy has increased tuition by 3.9% annually as calculated by compounded annual growth rate (CAGR). The State University average over that period was 5.3% (CAGR).

As seen in Figure 9, financial aid has increased dramatically in recent years and is projected to continue to do so in the future as the Academy strives to keep the cost of education affordable for students.

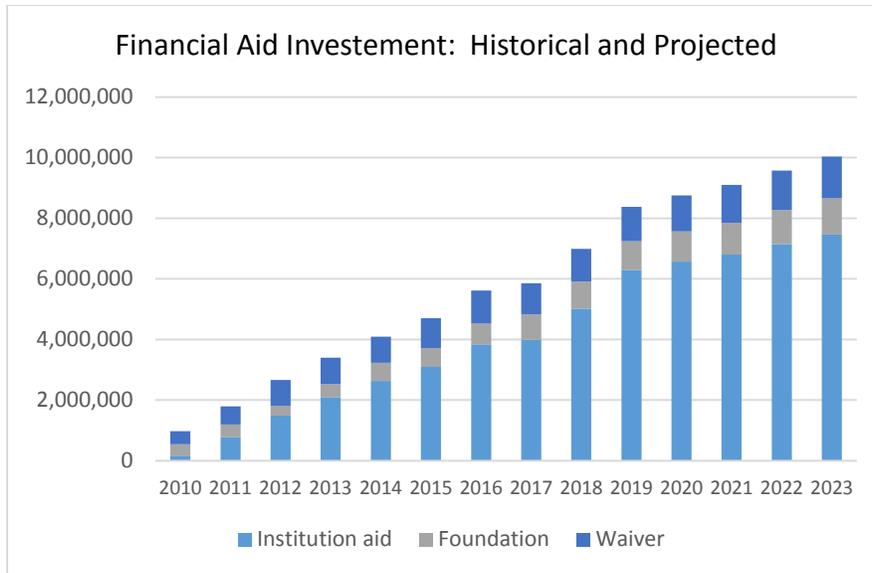


Figure 9 MMA’s historical and projected financial aid investment

In addition to efforts to provide adequate financial aid to its students, the Academy must also generate revenue to cover the costs associated with its specialized mission. These costs, unique to the Academy and essential to its continued success in providing graduates qualified for a wide range of industries serving the Commonwealth of Massachusetts and the nation, continue to rise. The Academy will strive to manage revenue and utilize funding in the most effective and responsible manner. During this time period, it has been necessary for the Academy to absorb significant expenses, including the following:

- collective bargaining COLA increases not funded by the state (2016-2017)
- collective bargaining non-COLA increases, including post-tenure review increases, contractual promotional increases, and contractual step increases (consistently not funded)
- increase in fringe benefit contribution
- increasing costs associated with USCG-licensed faculty in maintaining their professional credentials
- increasing operating funds in support of unmet need-based financial aid
- specialized simulation technology replacement/upgrades
- unique infrastructure costs associated with an extended academic year due to winter sea term
- costs specific to manpower and utility needs for TS Kennedy
- burning a cleaner burning fuel for the training ship TS Kennedy

The aforementioned items, driven by changes in industry, unfunded mandates, and investment in need-based financial aid, have had a significant impact on the annual operating budget (on the order of \$2-3 million annually).

Financial Resources: Planning/Projections (Appendix H)

The specialized degree programs at Massachusetts Maritime Academy require an educational approach that employs an array of technologies and classroom infrastructure to support student education. Consequently, the Academy must maintain a low student-to-faculty ratio, not only to facilitate learning but also as a safety consideration for laboratories wherein highly technical equipment is operated. These specialized laboratories, simulators, and software programs are resource-intensive in terms of

both space and funding. They require ongoing training as well as regular upgrades, personnel to staff and operate the equipment and software. The expenses associated with such technologies are reflected in the core expenditures per FTE student at MMA. In fiscal year 2016, the figure was at \$22,825.

To cover rising expenses while maintaining affordable, high-quality educational programming, the Academy continually seeks and implements strategic initiatives for enterprise accounts: those revenue-generating operations that absorb their own costs. Increasingly, the Academy must rely on funds obtained from these accounts, and to that end plans initiatives for the Boat Donations Program, the Division of Graduate and Continuing Education, and Camps and Conferences. As part of the ongoing effort to identify sources of revenue, the Academy will also do the following:

- Seek additional revenue sources while maximizing the effective use of available funds. Collaborative efforts with PACE, CONNECT, and joint contracts will assist the Academy in this regard (for example, MMA will raise \$50 M for infrastructure and scholarships over the next 10 years).
- The Academy will manage a sustained increase in FTE enrollment in its undergraduate programs to reach 1800 students by 2023. In-state enrollment will be consistently above 65%.
- The Academy plans to increase institutional financial aid by \$3 million to a total of \$7.5 million by year 2023.
- The Academy anticipates a minimal annual state appropriation increase, planning on an average annual increase of 1%.
- The Academy will increase enrollment while carefully managing increases in tuition and fees.
- Commencing in 2019, the Academy will increase tuition and mandatory fees by no more than 6% through 2023 as determined by the Academy's board of trustees while remaining the lowest in the state system.
- The Academy will increase in-state mandatory tuition and fees by \$980 for students entering in 2019.
- The Academy will, for the duration of this contract, maintain its position as the least expensive four-year public university in terms of tuition and mandatory fees.
- The Academy will increase regional and out-of-state tuition and mandatory fees by aligning these costs with those at peer institutions.

Financial Resources: Performance Indicators

In addition to the performance indicators above, the Academy will do the following:

- The Division of Graduate and Continuing Education will seek to maintain a net revenue of \$1 million annually with the addition of a third Master's Degree program.
- Camps & Conferences will seek to grow its net revenue to \$350,000.
- Boat donations will continue to yield net sales of \$150,000
- The Center for Maritime and Professional Training will adopt a training program for those seeking employment in the offshore wind energy industry, an initiative coordinated through the Massachusetts Clean Energy Center, for which grant support is possible, with future opportunities for the program to generate revenue.
- Receive an unqualified annual audit

X. Infrastructure and Physical Resources

The Academy strives to maintain the highest quality infrastructure and physical resources possible, making strategic decisions to ensure critical support for academic programming. Renewable and sustainable energy, a robust suite of technology assets and services, and careful planning for the effective and efficient use of space remain priorities on campus.

Infrastructure and Physical Resources: Current Status

Physical Infrastructure.

To meet the resource needs of a 1,900-member student body by the year 2021, a master plan (see Appendix B) guides ongoing campus construction. Several infrastructure improvements have been recently completed or are currently underway. Phase I of the Campus Improvement Project includes the recent construction of a new road providing access to the north side of campus. Renovation is also underway at an off-campus site for the relocation of the Facilities and Marine departments. Additional parking for 236 vehicles was recently completed adjacent to Taylors Point Road, a project designed in an environmentally responsible manner using permeable pavement to allow for proper water drainage. A new “Center for Renewable and Responsible Energy,” has been established to spearhead and showcase our renewable energy accomplishments and to provide an established entity for future projects. A conference room has been renovated with data monitoring technology to display real time energy production from our renewable assets.

Information Technology.

The Academy has worked diligently to provide a modern, flexible and cost-effective platform for computing, networking, and data storage. The Academy’s data center is located on campus and houses both physical and virtual servers. Beginning in 2011, the Academy began moving applications and services to the cloud, a strategy that provides necessary functional capabilities to the campus while decreasing system maintenance burdens. To meet the ever-increasing demand for access to the internet, a new wireless network is currently being installed. The Academy has also migrated to a single authentication technology, which simplifies user authentication systems across campus and provides a higher level of security by incorporating password aging and password complexity. Based on the results from a 2014 third-party computer security assessment, a three-year computer security strategy was created in 2015 to further improve the Academy’s maturity levels across the SANS Top 20 security controls. As a result, many improvements have been made in the security area over the past two years (See Appendix I).

Enterprise Systems.

To provide a mobile, responsive and well-branded web presence, the Academy’s website was redesigned on Drupal, an open source content management system, in 2015. At that time, the website was also moved to an off-campus hosting firm, and monthly vulnerability scans are done to ensure a safe and secure website for the campus community. The Student Information System (SIS) in use at the Academy is Ellucian Colleague. Colleague has been adopted as the “system of record” on campus, which has improved quality of the data in the system. To support enrollment management and the increased number of applicants to the Academy, the Ellucian Recruiter module was purchased in 2012. To effectively utilize these systems, it is necessary to effectively leverage the power of both Colleague and

Recruiter, and doing so has been a priority on campus over the past two years. Focused training has been conducted, business processes have been revamped, and the efficient use of system functions has increased. The Academy uses the cloud-based version of Raiser's Edge for its fundraising activities and a cloud-based payment gateway from Touchnet to provide secure credit card payment processing.

Teaching and Learning.

All classrooms and lecture halls on campus have been outfitted with audio visual equipment and meet the minimum classification of a "standard classroom." Presently, over 70% of these classrooms are considered "smart classrooms," as they are equipped with a PC, multimedia player, document camera, projector, screen, and control panel. Blackboard is the Learning Management System (LMS) used at the Academy. With the integration into Blackboard of various teaching tools, such as Panopto for lecture capture, faculty use of the system is steadily increasing. To support the practical, hands-on components of education in the degree programs, eight simulation labs are located on campus. In 2012, a state-of-the-art, full mission bridge simulator was installed in the ABS Information Commons. This simulator provides a 360-degree view from a mock-up of a ship's bridge and is utilized by the Marine Transportation department in ship handling and bridge resource management classes. The other simulators include radar, navigation, marine distress and safety, tugboat, engine room and liquid cargo handling simulation.

Library Services.

In August 2011, the Library moved into the newly built ABS Information Commons, an expanded physical space with more comfortable furnishings. Since the relocation, library services and collections have been significantly enhanced and augmented, circulation functions have been streamlined, the reserve system has been reorganized, and several large-scale projects have been completed to shift collections and improve patron access. Enhancing the Library's e-resources has been a strategic focus in the growth and development of Library's collections. A central search portal is utilized to manage e-resources and facilitate access to over 47,000 e-journals and over 280,000 e-books. To preserve and organize the records and artifacts held by the Library, a program is now in place to convert materials to digital media. The first such project was undertaken in 2015 when the Library collaborated with the Boston Public Library to digitize archived MMA yearbooks from 1945 to 2014. To address the growing instructional needs of the Academy, the Library has increased the number of subject-based research guides it provides and has introduced the use of subject-specific Blackboard toolkits. To increase the effectiveness of each functional and operational area, the Library continues to improve methods to access and evaluate the resources, services, and technology it provides. Finally, Help Desk Services are now available in the ABS lobby, providing critical support for IT services across campus.

Infrastructure and Physical Resources: Planning/Projections

As part of strategic planning for long-term infrastructure improvements, a comprehensive 10-year fundraising campaign was recently announced to alumni and corporate supporters and to cities with which the Academy has strong industry relationships, including New York City, Houston, Fort Lauderdale, and Miami. The campaign, called "A Rising Tide," will raise \$50 million, \$20 million of which is slated for use on capital projects to add or expand classroom, laboratory, and athletic spaces on campus.

Campus Improvement Project

Phase II of the Campus Improvement Project will remove Power Plant Road and create a central promenade connecting the Alumni Gymnasium and new Recreation Center to the central campus.

Student-centered capital construction and renewable energy.

Construction is planned for a new academic building that will provide additional laboratory and classroom space to accommodate growth in the student population.

Maximum Utilization of Maritime Assets.

The Division of Marine Operations will continue to work with the U.S. Department of Transportation's Maritime Administration on loan agreements and replacement of the training ship. The Division will also ensure that all small boats are regularly maintained and available to support the academic mission. In addition, the Division will ensure that the Herring Pond sailing and ship handling facility is available each semester to support the student life and academic programs.

Technology and Library Services Improvements and Upgrades.

A comprehensive plan will continue to improve and enhance information technology and library services on campus. The Academy will maintain and provide a high speed, redundant network infrastructure that supports wired and wireless connectivity across the campus, while advancing the use of virtualization technology to reduce energy consumption, reduce hardware costs, and improve system management efforts. In addition, the Academy will ensure that it maintains a reliable and secure computing infrastructure. Additional initiatives in this area include the following:

- Utilize a remote colocation data center to provide system recovery in the event of a disaster, a system with the potential to become the Academy's primary data center.
- Integrate cloud-based systems and services that provide value to the campus community.
- Promote the effective utilization of the Academy's enterprise systems by providing user training and exploiting the full capabilities of these systems.
- Maintain a well-trained, knowledgeable, and accessible Helpdesk staff that provides superior technical support and services.
- Promote and support Google G Suite email, calendaring, and collaboration tools.
- Provide a high performing desktop platform for staff, faculty, and classroom use.
- Provide state-of-the-art audio-visual systems in classrooms, lecture halls, and computer labs to enhance teaching and learning.
- Promote the use of course management tools, such as Blackboard LMS, video streaming, and online assessments, that provide the building blocks for the development of online programs.
- Fully leverage the capabilities of all campus simulation systems while keeping abreast of new simulation technologies that could be beneficial to the Academy.
- Work closely with faculty and staff to identify appropriate print, electronic, and media materials suited to the instructional goals of the Academy's teaching programs.
- Develop an institutional repository for the Academy's digital archives.
- Continue to improve methods for accessing and evaluating the resources, services, and technology provided by the Academy's library.

Construction Underway/Completed.

The 2017-2021 strategic plan identifies specific performance indicators for construction in upcoming years. These performance indicators are as follows:

- Complete the design for the new academic building/lab. Final design and funding is awaiting the appropriation of funding from the Division of Capital Asset Management and Maintenance
- Complete and submit the concept proposal for the new academic building.
- Collaborate with the private sector on marine hydrokinetic research projects.
- Pursuing grant funding to complete the infrastructure necessary to power the Aquaculture Center with the Schottel turbine.
- Collaborate with Brown University, Bristol Community College, the UMass system and private entities in the field of hydrokinetic research.
- Complete Housing Expansion Study to include on/off campus options in summer 2017.
- Ensure that TV *Ranger* and small craft (e.g., tugs, barges, motor-whaleboats, and monomoys) are maintained to support academics.
- Evaluate longevity of TV *Ranger* and make recommendations to President.
- Ensure Herring Pond sailing facility is activated in spring semester to support sailing, manned model ship handling training, etc.
- Conduct a kitchen expansion study.
- Complete phase I renovation of the 320 Main Street Property and relocate Facilities and Marine Departments.
- Start Phase II of athletic center renovations.
- Complete Flanagan Hall envelope and roof upgrades.
- Conduct exterior lighting upgrade study.
- Complete housing expansion study to include on/off campus locations.
- Construct sidewalks west of the Bresnahan Building.
- Obtain leadership in energy and environmental design (LEED) certification of all new construction and major building projects.
- Renovate pedestrian walkway (formerly Power Plant Road).
- Work with Cape Light Compact to maximize energy efficiency rebates.
- Continue to identify HVSAC and energy management system upgrades.

Technology and Library Services.

Given that the Technology and Library Services division is focused on service to its customers, the measurement of customer satisfaction is a valid indicator of its performance. To measure student and staff satisfaction with IT services and support, established service level agreements (SLAs) for ticket closure time by ticket priority will be measured. To measure student satisfaction with library resources and services, the undergraduate mean satisfaction rating on the annual Ruffalo Noel Levitz Student Satisfaction Index will be used.

Lastly, to measure the security, reliability and accessibility of the Academy's computer systems and services, the maturity level of each of the SANS Top 20 Security Controls will be measured. The starting

point for these measurements is an assessment that was done in 2014 by an outside firm, who selected the SANS Top 20 Security Controls as the appropriate framework for the Academy. Subsequently, measurements have been taken at the end of 2015 and 2016 to measure the progress made (Appendix I).

The goals across these 3 performance indicators are to achieve the following:

- Help Desk Service Level Agreements:
Emergency – solve 95% within 1 day (currently 84%)
Urgent – solve 95% within 4 days (currently 59%)
Normal – solve 80% within 7 days (currently 90%)
Low – solve 80% within 14 days (currently 61%)
- Undergraduate satisfaction rating :
A mean satisfaction rating of 5.0 or higher on a scale of 1 -7. On the 2017 SSI, the undergraduate mean satisfaction rating in this area was 4.88.
- Maturity levels of security controls:
The goal is to achieve, at a minimum, the “Managed” level of maturity for each of the 20 Security controls (See Appendix I).

Maritime Asset Usage.

The 2017-2021 strategic plan identifies specific performance indicators for maritime asset usage. These performance indicators are as follows:

- Activation of the training vessel for annual Sea Term, Orientation Mini-Cruise, or other voyages as directed by the President.
- Provide cadet dormitory living in the Fall of 2017 and in subsequent years, as required.

Section Four: Conclusion

Massachusetts Maritime Academy continues its long tradition of producing successful graduates through comprehensive strategic planning and by continually developing and adapting academic programming to meet the current needs of industries served while responding to developments within higher education. As a special mission college within the state university system and one of five state maritime academies serving the nation, the Academy remains an institution with a distinctive and vital mission, with a legacy of success that will continue well into the future.

Section Five: Appendices

List of Appendices

- Appendix A: Stakeholders Contributing to the Document
- Appendix B: Planning Documents
- Appendix C: Partnership Requirements (MA General Laws/Budget)
- Appendix D: Articles Showing Favorable Rankings
- Appendix E: Proposed Multicultural Events Ay 2017-18
- Appendix F: Assessment by Institutional Learning Outcomes
- Appendix G: Rubric for Course Designation of Civic Learning/Engagement
- Appendix H: Budget Figures
- Appendix I: Progress on SANS Top 20 Security Controls

Appendix A: Stakeholders Contributing to the Special Mission Renewal Plan

President of Massachusetts Maritime Academy
Senior Vice President of Academic Affairs
Vice President of Advancement
Vice President of Enrollment and External Affairs
Vice President of Finance
Vice President of Operations
Vice President of Student Services
Vice President of Technology and Library Services
Master, Training Ship Kennedy
Dean of Undergraduate Studies
Dean of Graduate Studies and Continuing Education
Dean of Human Resources
Assistant Dean: Registrar
Assistant Dean of Academic Affairs
Academic Department Faculty
Director of Admissions
Director of Athletics
Director of the Center for Maritime and Professional Training
Director of Financial Aid
Director of Institutional Effectiveness
Director of Library Services
Director of Shoreside Career Services
Director of Sports Information and Scheduling Coordinator
Director of Standards for Training, Certification and Watchkeeping / Licensing Officer
Assistant Director of Inclusive Excellence and International Programs

Appendix B: Planning Documents

The MMA planning documents can be accessed at the following links:

Massachusetts Maritime Academy Five-Year Strategic plan: FY 2017-2021
https://drive.google.com/file/d/0B_25su1o1-m-aERRd1N0T0tyOXc/view

Massachusetts Maritime Academy: Master Plan Update (June 2014)
https://docs.google.com/presentation/d/13BMjwIXxGjgb6OoQ7qpyY8jx_vpB4dzVlBkVIm2tyy4/edit

Appendix C: FY 2004 Budget Outside Sections

SECTION 49.

Section 7 of said chapter 15A, as so appearing is hereby amended by inserting at the end thereof the following paragraph:

The board of trustees of a state university or community college with the potential to expand its mission, profile, and orientation to a more regional or national focus may submit to the secretary and the Board of Higher Education a five-year plan embracing an entrepreneurial model which leverages that potential in order to achieve higher levels of excellence. Such plans shall include, but not be limited to, budget and enrollment projections for each year, projections for total student charges for each year, projections for in-state and out-of-state enrollments for each year, and plans to insure continuing access to the institution by residents of the commonwealth and affirmative action policies and programs that affirm the need for and a commitment to maintaining and increasing access for economically disadvantaged and minority students. Said proposal, upon its receipt, shall be transmitted to the secretary of administration and finance, the chairs of the house and senate committees on ways and means, and the house and senate chairs of the joint committee on higher education. The secretary, in consultation with the council, shall have the authority to approve, reject, or propose amendments to said plan. Proposed amendments shall be returned to the institution's board of trustees. If the board of trustees approves said amendments, the plan shall be considered adopted. If the institution's board of trustees rejects the proposed changes, it may submit a redrafted plan, which will be treated as a new plan under the provisions of this section.

Section 160. Notwithstanding any general or special law to the contrary, for fiscal years 2005 to 2010, inclusive, all tuition and fees received by a board of trustees of the Massachusetts Maritime Academy shall be retained by the board of trustees of that institution in a revolving trust fund or funds and shall be expended as the board of the institution may direct. Any balance in the trust funds at the close of a fiscal year shall be available for expenditure in subsequent fiscal years and shall not revert to the General Fund.

Notwithstanding any general or special law to the contrary, for employees of public higher education institutions who are paid from tuition retained pursuant to this section, fringe benefits shall be funded as if those employees' salaries were supported by state appropriations. This section shall apply only to fringe benefits associated with salaries paid from tuition retained by the boards of trustees of public higher education institutions as a direct result of the implementation of this section.

Section 163. The Massachusetts Maritime Academy shall submit to the Board of Higher Education, and said board shall consider, a proposal under clause (p) of section 22 of chapter 15A of the General Laws, as amended by section 63 of this act. The proposal shall establish tuition rates and admission standards for the college, and shall assure that the number of undergraduate degree candidates who are Massachusetts residents enrolled on October 1 of 2004 and each subsequent year thereafter shall be no less than 60 per cent of the total number of undergraduate degree candidates enrolled, or the number of Massachusetts residents enrolled on October 1, 2003, whichever is greater. In-state tuition rates for the college shall preserve affordability for Massachusetts residents. Out-of-state tuition rates shall appropriately balance the financial needs of the college with the need to be competitive with peer institutions regionally and nationwide. The proposal shall include provisions for performance standards specific to the mission of said college to be used in place of the performance measurements system otherwise in effect.

BOSTON BUSINESS JOURNAL

[Industry News](#) [Education](#)

See the 'best value' colleges in Massachusetts and New England

Apr 11, 2017, 2:57pm EDT **Updated** Apr 12, 2017, 8:41am EDT
Industries & Tags

The best value colleges in the United States are in Massachusetts, and the best-value schools in the Bay State won't surprise you. Except maybe for No. 3.

The top university in Massachusetts based on value — a metric that takes into account tuition and fees versus the average starting salary of its graduates — is the Massachusetts Institute of Technology, according to a new ranking from SmartAsset.com. MIT also ranked first nationally, with tuition of \$45,016 and a starting salary of \$78,300.

Harvard University came in at No. 2 in Massachusetts and sixth nationally, with an average tuition of \$43,938 (not including student-living costs) against an average starting salary of \$65,200 for its students after college, according to the ranking.

The website looked at five factors to determine the ranking: tuition, student living costs, scholarship and grant offerings, retention rate and starting salary.

Salary, tuition and living costs were weighted at 25 percent in the ranking, while scholarships and grants, and student retention was weighted at 12.5 percent.

Coming in at No. 3 in Massachusetts was Massachusetts Maritime Academy, where in-state tuition costs were \$7,127 and the average starting salary was \$58,900.

The No. 1 schools in the other New England states included Brown University in Rhode Island, Dartmouth College in New Hampshire, Middlebury College in Vermont, University of Maine in Maine, and Yale University in Connecticut.

Doug Banks oversees the editorial department.



HOMEROOM

THE OFFICIAL BLOG OF THE U.S. DEPARTMENT OF EDUCATION

23 four-year schools with low costs that lead to high incomes

One of the biggest concerns about college that students and families have is the costs of attending—and the possible opportunities it could create for their careers. Check out 23 four-year institutions of higher education that have demonstrated both high earnings, as well as low costs for their lowest-income students.

Institution	Median Earnings of Students 10 Years After Entering the School	Average Net Price for Low-Income Students
Massachusetts Institute of Technology	\$91,600	\$6,733
Harvard University	\$87,200	\$3,386
Stanford University	\$80,900	\$3,895
Massachusetts Maritime Academy	\$79,500	\$7,519
University of Pennsylvania	\$78,200	\$6,614
Washington and Lee University	\$77,600	\$7,663
Duke University	\$76,700	\$6,280
Princeton University	\$75,100	\$5,720
Georgia Institute of Technology-Main Campus	\$74,000	\$7,875
Columbia University in the City of New York	\$72,900	\$5,497
Dartmouth College	\$67,100	\$7,648
Yale University	\$66,000	\$7,637
Vanderbilt University	\$60,900	\$7,147
Rice University	\$59,900	\$7,960
Brown University	\$59,700	\$6,104
University of Virginia-Main Campus	\$58,600	\$7,007
Williams College	\$58,100	\$8,202
University of Michigan-Ann Arbor	\$57,900	\$7,156
Hamilton College	\$57,300	\$7,245
Amherst College	\$56,800	\$3,739
Trinity College	\$56,100	\$7,874
Haverford College	\$55,600	\$5,648
Bowdoin College	\$54,800	\$6,731

This list includes schools in the top 10 percent of predominantly four-year-degree-granting schools for 1) median positive earnings 10 years after beginning at the school and 2) low net price for students receiving federal grants or loans with a family income of \$0-\$48,000. Net price refers to the net price for in-state students in public institutions. Percentiles were calculated excluding cell sizes less than 30, schools with zero undergraduate degree-seeking students, schools not currently operating, and schools in territories.

Appendix E: Proposed Multicultural Events for Academic Year 2017-18

- International Coffee Day (two events per semester)
- National Hispanic-Latino heritage Month: September 15-October 15 (one event per week)
- Pride Week: October 16-20
- National Native American Heritage Month: November (one event per week)
- Panama Independence Day: November 3
- International Education Week: November 13 -17
- Black History Month: movie night and display on the training ship
- International Women's Day: week of March 8 to also celebrate national Women's History Month
- Heritage Fest: April

Appendix F: Institutional Student Learning Outcomes Measures for Undergraduate Education

Learning Outcomes	Direct Measures	Indirect Measures
Basic knowledge and understanding of the history, theories, scholarship, tools, technologies, methods, and/or specialized terms of a field of study.	<ul style="list-style-type: none"> • USCG License Exams (Marine Transportation and Marine Engineering majors) • Facilities Engineering Qualification Exam (FEQE) • Fundamentals of Engineering (FE) Exam (required of Energy Systems Engineering majors) • IMB Competency Exam • IMB Capstone Project • EM Capstone Project • MSEP Environmental Monitoring Project • Co-Op Employer Evaluations (shore side majors) • Commercial Shipping Evaluations (seagoing majors) • Experiential Learning Projects (shore side majors) <p><i>State licensure rates and certification outcomes are also tracked (required for some majors; optional for others)</i></p>	<ul style="list-style-type: none"> • Senior Exit Survey • Career Fair Employer Survey • Survey of Recent Alumni • IMB Exit Survey • ESE Student Curriculum Survey
Basic knowledge and understanding of humanities, social sciences, sciences, and mathematics.	<ul style="list-style-type: none"> • ETS Proficiency Profile • Pre- and post-tests (Chemistry I; Western Civilization) • Social Science assessments (essay exams, term papers) • Force Concept inventory (College Physics I and Engineering Physics I) • MathXL quizzes (Algebra and Trigonometry) 	<ul style="list-style-type: none"> • Senior Exit Survey • Career Fair Employer Survey • Survey of Recent Alumni
Ability to explore concepts and questions that bridge different areas of learning.	<ul style="list-style-type: none"> • Social Science assessments (essay exams, term papers) <p><i>Additional measure(s) TBD</i></p>	<ul style="list-style-type: none"> • Career Fair Employer Survey <p><i>Additional measure(s) TBD</i></p>
Ability to write, read, speak, and listen effectively.	<ul style="list-style-type: none"> • Writing Assessment Program (exam and portfolio) • ETS Proficiency Profile • Co-Op Employer Evaluations • Commercial Shipping Evaluations 	<ul style="list-style-type: none"> • Senior Exit Survey • Career Fair Employer Survey • Survey of Recent Alumni
Ability to critically and creatively comprehend and evaluate new information and ideas.	<ul style="list-style-type: none"> • Writing Assessment Program (exam and portfolio) • ETS Proficiency Profile • Co-Op Employer Evaluations • Commercial Shipping Evaluations 	<ul style="list-style-type: none"> • Senior Exit Survey • Career Fair Employer Survey • Survey of Recent Alumni
Ability to use quantitative reasoning skills, applying basic concepts of mathematics and science.	<ul style="list-style-type: none"> • Pre- and post-tests (Chemistry I) • Force Concept inventory (College Physics I and Engineering Physics I) • MathXL quizzes (Algebra and Trigonometry) 	<ul style="list-style-type: none"> • Senior Exit Survey • Career Fair Employer Survey

Learning Outcomes	Direct Measures	Indirect Measures
Capacity for lifelong learning, including ability to utilize technology and information literacy skills.	<ul style="list-style-type: none"> Co-Op Employer Evaluations Commercial Shipping Evaluations <p><i>Additional measure(s) TBD</i></p>	<ul style="list-style-type: none"> Senior Exit Survey Career Fair Employer Survey Survey of Recent Alumni Library Research Assessment Project survey (Western Civilization)
Ability to work and achieve goals as a member of a team.	<ul style="list-style-type: none"> Co-Op Employer Evaluations Commercial Shipping Evaluations 	<ul style="list-style-type: none"> Senior Exit Survey Career Fair Employer Survey Survey of Recent Alumni
Capacity for leadership, including the ability to make rational decisions while complying with a set of standards.	<p><i>Measure(s) TBD</i></p>	<ul style="list-style-type: none"> Senior Exit Survey Career Fair Employer Survey Survey of Recent Alumni
Ability to perform and behave in a professional manner acceptable for career goals.	<ul style="list-style-type: none"> Co-Op Employer Evaluations Commercial Shipping Evaluations 	<ul style="list-style-type: none"> Senior Exit Survey Career Fair Employer Survey Survey of Recent Alumni
Ability to make appropriate future decisions based on past and present conditions and circumstances.	<ul style="list-style-type: none"> Co-Op Employer Evaluations Commercial Shipping Evaluations 	<ul style="list-style-type: none"> Senior Exit Survey Career Fair Employer Survey Survey of Recent Alumni
Basic knowledge, understanding, and appreciation of diverse social and political values.	<ul style="list-style-type: none"> Social Science assessments (essay exams, term papers) <p><i>Additional measure(s) TBD</i></p>	<ul style="list-style-type: none"> Senior Exit Survey Career Fair Employer Survey Survey of Recent Alumni
Capacity for ethical reasoning, including the ability to make decisions and act in a socially responsible manner.	<p><i>Measure(s) TBD</i></p>	<ul style="list-style-type: none"> Senior Exit Survey Career Fair Employer Survey
Ability to integrate knowledge and skills in civic and global contexts.	<ul style="list-style-type: none"> Social Science assessments (essay exams, term papers) <p><i>Additional measure(s) TBD</i></p>	<ul style="list-style-type: none"> Career Fair Employer Survey Cultural Intelligence Scale (CQS) (IMB international experiential learning projects) <p><i>Additional measure(s) TBD</i></p>
Capacity for empathy, including an appreciation for diversity and inclusion.	<p><i>Not Applicable (learning outcome not directly observable / difficult to directly observe)</i></p>	<ul style="list-style-type: none"> Career Fair Employer Survey Campus Climate Survey Survey of Recent Alumni
Capacity for civic action, including the ability to engage in service that benefits the public good.	<ul style="list-style-type: none"> Experiential Learning Projects (shore side majors) 	<ul style="list-style-type: none"> Career Fair Employer Survey <p><i>Additional measure(s) TBD</i></p>

Massachusetts Maritime Academy Civic Learning Course Evaluation Rubric With Feedback from Governance

Objective 1:	Objective 2:	Objective 3:	Objective 4:
Civic and Democratic Knowledge	Civic and Democratic Skills	Civic and Democratic Values	Civic and Democratic Action
Locke's Social Contract	Practice in debating and defending various positions which test knowledge and values.	Embrace of Limited Government over Absolutism	Practice of working in a society which embraces the vitality of representational government
Knowledge of the scientific revolution and the most important practices of the scientific method.	Rejection of anti-scientific language and attitudes and the use of healthy skepticism and strict scientific practices to eliminate unsound conclusions	Commitment to equality of opportunity and the resulting meritocracy.	Moral courage to uphold the highest ideals of science by questioning received or popular wisdom in the search for truth.
Awareness of traditional threats to Democratic societies 17th and 18 th centuries: Absolutism Established Religion	Ability to formulate persuasive arguments using formal academic research and writing, which includes evaluation of sources and weighing of evidence.	Commitment to Religious Toleration and participatory and representative democracy.	Moral and political courage to defend toleration and the ideals of separation of powers, checks and balances and balance between state and federal powers.
Declaration of Independence	Ability to relate the ideals of the Declaration to the practical realities of history and understand how these ideals continue to motivate us today.	Primacy of Life, Liberty and Property	Ability to analyze and engage in systems to protect the timeless and prime values set forth in the Declaration of Independence
U. S. Constitution: Checks and balances within Federal Government Relationship between Federal and State governments	Ability to evaluate news sources for bias and inaccuracies	Respect for the U. S. Constitution	Participation in government through voting, serving on jury duty and meeting all duties of U.S. citizens.
Knowledge of the important First Amendment rights and values.	Ability to research and evaluate internet and textual sources for credibility and bias	Embrace of Western Enlightened values	Capacity to reject relativism in relation to Western Enlightened values

Objective 1:	Objective 2:	Objective 3:	Objective 4:
Civic and Democratic Knowledge	Civic and Democratic Skills	Civic and Democratic Values	Civic and Democratic Action
Challenges to Classic Liberal Enlightened Democratic societies in the 19 th century: Conservatism Socialism Marxism Anarchism	Ability to understand 19 th century threats to Classic Liberal ideals and democratic governments and how these threats were successfully opposed.	Embrace Western Enlightened values, stressing toleration, and the primacy of life, liberty and property.	Moral and Political courage to evaluate challenges to American Constitutional values and to make judgements among a range of different interpretations of the U. S. Constitution.
Awareness of threats to Democratic societies in the 21 st century: Radical Islamic Terrorism	Ability to defend religious toleration and peaceful debate of core beliefs.	Condemnation of the use of force against open debate and free exercise of opinions.	Courage to support truth in the face of threats to tolerant enlightened discourse.
Awareness of threats to Democratic societies in the 21 st century: Understanding environmental issues, challenges and politics	Ability to evaluate scientific sources and theories and to understand the political and economic consequences of environmental issues	Evaluate environmental issues within the context of a Classic Liberal society	Courage to defend one's conclusions and beliefs in the face of opposition.

Appendix H

Massachusetts Maritime Academy
Operating Accounts FY 2012 to FY 2017

	Actual FY 2012	Actual FY 2013	Actual FY 2014	Actual FY 2015	Actual FY 2016	Projected FY 2017
I) Unrestricted Balance Carry forward - prior year	17,635,450	20,275,411	20,363,726	25,043,666	19,488,399	22,262,259
II) Funding & Revenue	44,565,010	45,560,142	48,403,399	52,009,522	50,864,807	56,591,541
III) FY Expenditure	41,925,049	45,471,827	42,118,459	57,564,789	48,090,947	53,873,541
IV) Transfer to Fund balance (including interest on investment)	2,639,961	88,315	4,679,940	-5,555,267	2,773,860	2,718,000
Transfer to Foundation			-1,605,000			
V) Fund Balance Carry forward - year end	20,275,411	20,363,726	25,043,666	19,488,399	22,262,259	24,980,259

	Actual FY 2012	Actual FY 2013	Actual FY 2014	Actual FY 2015	Actual FY 2016	Projected FY 2017
II) Funding & Revenue - SEGMENTS						
A) State Funding	12,330,691	12,946,587	14,734,703	15,541,878	16,358,059	16,508,059
B) State Capital Appropriation	3,824,039	1,236,642	1,766,368	4,486,814	417,189	155,516
C) Student Fees						
1) Tuition	2,441,993	2,742,591	3,936,338	3,271,830	4,115,958	4,916,054
Less Tuition Waivers	-846,532	-687,786	-869,076	-982,782	-1,085,724	-1,024,033
2) Other Student Fees	23,902,395	26,051,016	26,161,749	29,638,392	32,576,522	35,029,154
Less Financial Aid	-1,491,014	-2,093,665	-2,625,550	-3,095,862	-3,842,823	-3,982,918
Total Student Fees	24,006,842	26,012,156	26,603,461	28,831,578	31,763,933	34,938,257
D) Enterprise A/C, Investment, Misc Fees	4,403,438	5,364,757	5,298,867	3,149,252	2,325,626	5,349,709
Total Funding and Revenue	44,565,010	45,560,142	48,403,399	52,009,522	50,864,807	56,951,541
III) FY Expenditure	41,925,049	45,471,827	42,118,459	57,564,789	48,090,947	53,873,541
Enrollment & Rates						
FTE Enrollment by Residency						
In-State	1,068	1,098	1,135	1,186	1,307	1,403
Regional	166	161	177	124	103	64
Out-of-State	35	44	50	85	127	174
Total	1,269	1,303	1,362	1,395	1,537	1,641
Rate - Full Year						
Mandatory Tuition & Fees, Room & Board						
In-State	16,382	17,116	17,638	18,236	18,842	19,715
Regional	17,428	18,214	18,736	19,346	20,008	20,939
Out-of-State	30,578	32,022	32,544	33,290	34,648	36,311
FTE Core Expense	21,816	23,147	22,872	22,805	22,825	

Massachusetts Maritime Academy
Operating Accounts FY 2018 to FY 2023

	Budgeted FY 2018	Budgeted FY 2019	Budgeted FY 2020	Budgeted FY 2021	Budgeted FY 2022	Budgeted FY 2023
I) Unrestricted Balance Carry forward - prior year	24,980,259	24,980,259	24,986,828	25,013,771	25,030,143	25,047,873
II) Funding & Revenue	55,694,979	58,156,569	60,576,943	63,216,372	66,017,731	68,446,413
III) FY Expenditure	55,694,979	58,150,000	60,550,000	63,200,000	66,000,000	68,400,000
IV) Transfer to Fund balance (including interest on investment)	0	6,569	26,943	16,372	17,731	46,413
Transfer to Foundation						
V) Fund Balance Carry forward - year end	24,980,259	24,986,828	25,013,771	25,030,143	25,047,873	25,094,286
<hr/>						
	Budgeted FY 2018	Budgeted FY 2019	Budgeted FY 2020	Budgeted FY 2021	Budgeted FY 2022	Budgeted FY 2023
II) Funding & Revenue - SEGMENTS						
A) State Funding	16,358,059	16,521,640	16,686,856	16,853,725	17,022,262	17,192,484
B) State Capital Appropriation						
C) Student Fees						
1) Tuition	5,419,135	6,131,090	6,835,333	7,585,746	8,386,425	8,721,882
Less Tuition Waivers	-1,075,235	-1,128,997	-1,185,446	-1,244,719	-1,306,955	-1,372,302
2) Other Student Fees	37,010,160	40,069,473	41,892,848	43,852,295	46,027,353	48,274,694
Less Financial Aid	-4,817,140	-6,292,637	-6,565,768	-6,802,057	-7,142,164	-7,461,772
Total Student Fees	36,536,920	38,778,929	40,976,967	43,391,265	45,964,659	48,162,502
D) Enterprise A/C, Investment, Misc Fees	2,800,000	2,856,000	2,913,120	2,971,382	3,030,810	3,091,426
Total Funding and Revenue	55,694,979	58,156,569	60,576,943	63,216,372	66,017,731	68,446,413
III) FY Expenditure	55,694,979	58,150,000	60,550,000	63,200,000	66,000,000	68,400,000
<hr/>						
	Budgeted FY2018	Budgeted FY2019	Budgeted FY2020	Budgeted FY2021	Budgeted FY2022	Budgeted FY2023
Enrollment & Rates						
FTE Enrollment by Residency						
In-State	1,432	1,454	1,467	1,484	1,507	1,527
Regional	50	42	47	53	56	60
Out-of-State	190	206	210	210	210	213
Total	1,672	1,702	1,724	1,747	1,773	1,800
Rate - Full Year						
Mandatory Tuition & Fees, Room & Board						
In-State	20,562	21,886	22,600	23,340	24,108	24,906
Regional	21,846	33,046	34,304	35,616	36,983	38,409
Out-of-State	37,988	38,332	39,704	41,128	42,608	44,145
FTE Core Expense						

Assumptions

Tuition and Fees FY 2018 5% increase, FY 2019 freshman only increase \$980, current students 4%, FY 202-2023 increase 4%
Room per debt schedule avg 2%
Board per contract CPI avg 2.5%
Enterprise A/C, Misc. Fees 2%. Federal Subsistence level funded. No Investment revenue
State Appropriation 1%, no CB increase. No Capital Appropriation

Appendix I: Information Technology Maturity Chart

SANS Top 20 Security Controls	INITIAL ASSESSMENT - 2014						YEAR ONE - 2015						YEAR TWO - 2016					
	Non-existent	Initial	Repeatable	Defined	Managed	Optimized	Non-existent	Initial	Repeatable	Defined	Managed	Optimized	Non-existent	Initial	Repeatable	Defined	Managed	Optimized
Inventory of Authorized and Unauthorized Devices				●						●						●		
Inventory of Authorized and Unauthorized Software				●						●	●					●	●	
Secure Configurations for Hardware and Software				●						●						●		
Continuous Vulnerability Assessment and Remediation		●						●								●		
Malware Defenses				●						●						●		
Application Software Security				●	●					●	●					●	●	
Wireless Access Control				●						●						●		
Data Recovery Capability				●							●					●		
Security Skills Assessment and Training		●						●								●		
Secure Configurations for Network Devices		●							●							●		
Limitation and Control of Ports, Protocols, and Services				●						●						●		
Controlled Use of Administrative Privileges		●						●						●				
Boundary Defense				●						●						●		
Maintenance, Monitoring, and Analysis of Audit Logs		●						●								●		
Controlled Access Based on the Need to Know			●						●						●			
Account Monitoring and Control		●							●						●			
Data Loss Prevention	●							●						●				
Incident Response Management	●						●						●					
Secure Network Engineering				●						●						●		
Penetration Tests and Red Team Exercises																		