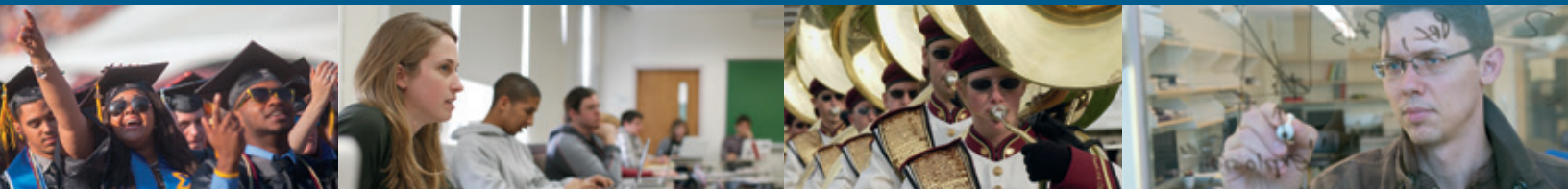


2018

University of Massachusetts

ANNUAL FINANCIAL REPORT



University of Massachusetts

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2018

University of
Massachusetts

ANNUAL FINANCIAL REPORT

UNIVERSITY ADMINISTRATION

As of August 2018

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January 8, 2019

I am pleased to present the annual financial report of the University of Massachusetts, which details the university's financial position and activities over the past year and highlights our commitment to fiscal management and accountability.

Last year, UMass continued its ascension into the top-tier of public research universities and increased its impact in the Commonwealth and beyond.

Enrollment surpassed 74,500 students, a new high, and we graduated our largest class in history, with nearly 18,000 students earning degrees. Our research portfolio rose to a record \$670 million — behind only Harvard and MIT in the state — with research concentrated in areas critical to the Commonwealth's economy. And for the third year in a row, *U.S. News & World Report* differentiated UMass by making us one of the only university systems in the country with all of its undergraduate campuses nationally ranked universities.

These incredible achievements are the result of the hard work and dedication of countless individuals across our five campuses, and they're a clear indication that we are fulfilling our mission to provide an accessible, world-class education that transforms lives.

But as we continue to grow and achieve new levels of success, we must remain sharply focused on affordability, which is critical to our mission and our position in an increasingly competitive higher education marketplace.

To that end, we have taken extensive measures to increase transparency, establish frameworks for financial accountability and be good stewards. We have implemented a series of efficiency and effectiveness projects to save nearly \$300 million over 10 years. And we are focused on several key areas to ensure we remain affordable for students of all backgrounds, including expanding our digital education offerings, forming new partnerships with businesses and nonprofits, and increasing our financial aid endowment to provide more scholarships for deserving students.

These efforts have already distinguished UMass as a well-managed university. This past May, Moody's affirmed the university's Aa2 credit rating and revised the university's outlook from negative to stable, citing strong management, improvement in fiscal oversight and healthy student demand.

I am proud of what we've achieved this year, and I'm confident that as a university community we are ready to face the opportunities and challenges that lie ahead. Together, we will ensure UMass continues to fulfill its critical mission of access, opportunity and service to the Commonwealth.

Martin T. Meehan
President

REPORT OF INDEPENDENT CERTIFIED PUBLIC ACCOUNTANTS

Board of Trustees of the
University of Massachusetts

Report on the financial statements

We have audited the accompanying financial statements of the business-type activities and the aggregate discretely presented component units of the University of Massachusetts (the “University”), an enterprise fund of the Commonwealth of Massachusetts, as of and for the years ended June 30, 2018 and 2017, and the related notes to the financial statements, which collectively comprise the University’s basic financial statements as listed in the table of contents.

Management’s responsibility for the financial statements

Management is responsible for the preparation and fair presentation of these financial statements in accordance with accounting principles generally accepted in the United States of America; this includes the design, implementation, and maintenance of internal control relevant to the preparation and fair presentation of financial statements that are free from material misstatement, whether due to fraud or error.

Auditor’s responsibility

Our responsibility is to express opinions on these financial statements based on our audit. We conducted our audit in accordance with auditing standards generally accepted in the United States of America and the standards applicable to financial audits contained in *Government Auditing Standards* issued by the Comptroller General of the United States. Those standards require that we plan and perform the audit to obtain reasonable assurance about whether the financial statements are free from material misstatement.

An audit involves performing procedures to obtain audit evidence about the amounts and disclosures in the financial statements. The procedures selected depend on the auditor’s judgment, including the assessment of the risks of material misstatement of the financial statements, whether due to fraud or error. In making those risk assessments, the auditor considers internal control relevant to the University’s preparation and fair presentation of the financial statements in order to design audit procedures that are appropriate in the circumstances, but not for the purpose of expressing an opinion on the effectiveness of the University’s internal control. Accordingly, we express no such opinion. An audit also includes evaluating the appropriateness of accounting policies used and the reasonableness of significant accounting estimates made by management, as well as evaluating the overall presentation of the financial statements.

We believe that the audit evidence we have obtained is sufficient and appropriate to provide a basis for our audit opinions.

Opinions

In our opinion, the financial statements referred to above present fairly, in all material respects, the respective financial position of the business-type activities and the aggregate discretely presented component units of the University of Massachusetts as of June 30, 2018 and 2017, and the respective changes in financial position and, where applicable, cash flows thereof for the years then ended in accordance with accounting principles generally accepted in the United States of America.

Other matters

Required supplementary information

Accounting principles generally accepted in the United States of America require that the Management's Discussion and Analysis on pages 6 through 15 and the Schedule of the University's Proportionate Share of the Net Pension Liability and the Schedule of the University's Contribution of the Massachusetts State Employees' Retirement System on page 47 be presented to supplement the basic financial statements. Such information, although not a required part of the basic financial statements, is required by the Governmental Accounting Standards Board who considers it to be an essential part of financial reporting for placing the basic financial statements in an appropriate operational, economic, or historical context. This required supplementary information is the responsibility of management. We have applied certain limited procedures to the required supplementary information in accordance with auditing standards generally accepted in the United States of America. These limited procedures consisted of inquiries of management about the methods of preparing the information and comparing the information for consistency with management's responses to our inquiries, the basic financial statements, and other knowledge we obtained during our audit of the basic financial statements. We do not express an opinion or provide any assurance on the information because the limited procedures do not provide us with sufficient evidence to express an opinion or provide any assurance.

Emphasis of Matter

The financial statements of the University are intended to present the financial position, the changes in financial position and cash flows that are attributable to the transactions of the University. They do not purpose to, and do not present fairly the position of the Commonwealth of Massachusetts as of June 30, 2018 and 2017, the changes in its financial position, or where applicable, its cash flows for the year then ended in conformity with accounting principles generally accepted in the United States of America. Our opinion is not modified with respect to this matter.

As discussed in Note 1 of the financial statements, the University adopted new accounting guidance effective July 1, 2017 related to postemployment benefits other than pensions. Our opinion is not modified with respect to this matter.

Other reporting required by Government Auditing Standards

In accordance with *Government Auditing Standards*, we have also issued our report, dated January 8, 2019, on our consideration of the University's internal control over financial reporting and on our tests of its compliance with certain provisions of laws, regulations, contracts, and grant agreements and other matters. The purpose of that report is solely to describe the scope of our testing of internal control over financial reporting and compliance and the results of that testing, and not to provide an opinion on the effectiveness of the University's internal control over financial reporting or on compliance. That report is an integral part of an audit performed in accordance with *Government Auditing Standards* in considering the University's internal control over financial reporting and compliance.



Boston, Massachusetts
January 8, 2019

Management's Discussion and Analysis (unaudited)

June 30, 2018

Introduction

This Management's Discussion and Analysis provides an overview of the financial position and activities of the University of Massachusetts (the University or UMass) for the fiscal years ended June 30, 2018 and 2017, and should be read in conjunction with the accompanying financial statements and notes. The financial statements, notes and this discussion are the responsibility of management.

The University of Massachusetts was established in 1863 as the Massachusetts Agricultural College, located at Amherst. Since then it has grown into a five-campus system that is nationally and internationally known for the quality of its academic programs and the scope and excellence of its faculty research. From Nobel Prize-winning gene-silencing research to research in such areas as renewable energy, nanotechnology, cybersecurity, life sciences and marine science, the University of Massachusetts is expanding the boundaries of knowledge and opening doors of discovery that benefit the Commonwealth of Massachusetts (Commonwealth), the nation and the world. UMass consistently ranks as one of the best universities in the world and as one of the most innovative.

UMass Amherst, founded in 1863, is the flagship of the five-campus UMass system. True to its land-grant roots, UMass Amherst is engaged in research and creative work in all fields and is classified by the Carnegie Foundation for the Advancement of Teaching as a doctoral university with the "highest research activity". Major areas of emphasis include climate science, food science, alternative energy, nano manufacturing, polymer science, computer science and linguistics. Consistently rated as a "Top Producer of Fulbright Students," UMass Amherst is ranked 26th among the nation's top public universities by *U.S. News & World Report* in 2018.

UMass Boston is nationally recognized as a model of excellence for urban public research universities. Located on Boston Harbor, it is the metropolitan area's only public research university. UMass Boston's distinguished intellectual

contributions span the social sciences, education, health and wellness, and has a student population that represents 150 countries. UMass Boston is committed to educating people from modest-income backgrounds, first-generation college students and those from urban areas here and abroad.

UMass Dartmouth distinguishes itself as a vibrant university dedicated to engaged learning and innovative research resulting in personal and lifelong student success. Located on 710 acres on the South Coast of Massachusetts, UMass Dartmouth ranks in the top 1 percent nationwide on the President's National Community Service Honor Roll and among Washington Monthly's national Top 25 in contribution to the public good. UMass Dartmouth offers students high-quality academic programs through majors and professional and doctoral programs, including the state's only public law school.

UMass Lowell, a nationally recognized doctoral university, is the 10th fastest growing university in the country, according to the Chronicle of Higher Education. National recognition of the campus is on the rise. *U.S. News & World Report* ranks UMass Lowell No. 157 in the National Universities Rankings, with programs support workforce and economic development through innovation, entrepreneurship and public-private partnerships. The university prepares students emphasizing experiential learning through cooperative education, service and research.

UMass Medical School (UMMS), founded in 1962 and situated in Worcester, is the Commonwealth's only public medical school and serves as the University's Nobel-prize winning health sciences campus. Consistently ranked in the top 10 percent for primary care training, UMMS has remained true to its founding mission while also becoming globally recognized in biomedical research. UMMS has three graduate schools—School of Medicine, Graduate School of Biomedical Sciences and Graduate School of Nursing. Unique among all medical schools, UMMS is also home to Commonwealth Medicine, a health care consulting division that partners with

states in delivering health services to vulnerable populations, and MassBiologics, the only non-profit, FDA-licensed vaccine manufacturer in the nation.

UMassOnline, the University of Massachusetts' nationally acclaimed online education consortium, features more than 1,500 online courses and 150 online certificate and degree programs from the five UMass campuses. Since its founding in 2001, UMassOnline continues to grow, with 67,000 course enrollments across the five campuses. UMassOnline students can pursue an associate's, bachelor's, master's or doctoral degree in a variety of in-demand subject areas, including liberal arts, education, management, nursing, public health and information technology. Online students learn from the same world-class instructors as students who study on campus, and they receive an identical degree. UMassOnline programs consistently earn high rankings in *U.S. News & World Report* and GetEducated.com.

Financial Highlights

The University's income before other revenues, expenses, gains, and losses was \$2.8 million for fiscal year 2018. Excluding the impact on operating expenses for both Governmental Accounting Standards Board (GASB) Statement No. 75, *Accounting and Financial Reporting for Postemployment Benefits Other Than Pensions* (GASB 75) and GASB 68, *Accounting and Reporting for Pensions* (GASB 68), the, the University's income before other revenues, expenses, gains, and losses was \$78.7 million.

From fiscal year 2017 to fiscal year 2018, the University's operating revenues increased by \$28.2 million driven by an increase in tuition & fees and auxiliary revenue from both a rate increase and enrollment increases. Grant revenues increased due to new government and private grant activity. Operating expenses increased by \$141.0 million primarily driven by the impact of recording postemployment benefit expenses in connection with the adoption of GASB 75, a collective bargaining rate increase, a state fringe rate increase and depreciation associated with the University's capital plan. Non-operating revenues increased \$25.7 million primarily attributed to an increase in state appropriations and strong investment performance.

The University's combined net position decreased \$665.4 million from \$3.1 billion in fiscal year 2017 to \$2.4 billion in fiscal year 2018. This decrease is primarily a result of the University's implementation of GASB 75. In addition to the expenses recorded in 2018 related to OPEB, the implementation of this standard resulted in a reduction of \$743.0 million to the beginning net position in the 2018 Statement of Revenues, Expenses, and Changes in Net Position as of July 1, 2017. The application of GASB 75 was recorded at the beginning of fiscal year 2018 because this was the earliest date for which recognition was practical, based on available information.

Using the Annual Financial Report

The University's financial statements are prepared in accordance with U.S. generally accepted accounting principles as prescribed by GASB, which establishes financial reporting standards for public colleges and universities. The University's significant accounting policies are summarized in Note 1 of the accompanying financial statements, including further information on the financial reporting entity.

This report includes the University's Statements of Net Position, Statements of Revenues, Expenses and Changes in Net Position and the Statements of Cash Flows for the fiscal years ended June 30, 2018 and 2017. The University's net position (the difference between assets and liabilities) is one indicator of the University's financial health. Over time, increases or decreases in net position are indicators of the improvement or erosion of an institution's financial health when considered together with non-financial factors such as enrollment levels and the condition of the facilities.



The Statements of Net Position include all assets and liabilities, as well as deferred inflows and outflows of resources of the University. Net position is further broken down into three categories: net investment in capital assets, restricted and unrestricted. Amounts reported in net investment in capital assets represent the historical cost of property and equipment, reduced by the balance of related debt outstanding and depreciation expense charged over the years. Net position is reported as restricted when constraints are imposed by third parties, such as donors or enabling legislation. Restricted net position is either non-expendable, as in the case of endowment gifts to be held in perpetuity, or expendable, as in the case of funds to be spent on scholarships and research. All other assets are unrestricted; however, they may be committed for use under contract or designation by the Board of Trustees. Note 15 to the accompanying financial statements depicts the designations of unrestricted net position at June 30, 2018.

The Statements of Revenues, Expenses and Changes in Net Position present the revenues earned and expenses incurred during the year. Activities are reported as either operating or non-operating, as prescribed by GASB. According to the GASB definitions, operating revenues and expenses include tuition and fees, grant and contract activity, auxiliary enterprises and activity for the general operations of the institution not including appropriations from state and federal sources. Non-operating revenues and expenses include appropriations, capital grants and contracts, endowment gifts, investment income, and non-operating federal grants (such as Pell grants). With a public university's dependency on support from the state, Pell grants, and gifts, it is common for institutions to have operating expenses exceed operating revenues. This is because the financial reporting model prescribed by GASB classifies state and federal appropriations, Pell grants, and gifts as non-operating revenues. Due to the materiality of the state appropriations upon which the University relies, these appropriation amounts are included in certain analysis throughout this MD&A as operating revenue. The utilization of long-lived assets, referred to as capital assets, is reflected in the financial statements as depreciation expense, which amortizes the cost of a capital asset over its expected useful life.

Another important factor to consider when evaluating financial viability is the University's ability to meet financial obligations as they mature. The Statements of Cash Flows present information related to cash inflows and outflows summarized by operating, capital and non-capital, financing and investing activities.

Reporting Entity

The financial statements of the University include financial activities of the following blended component units: the University of Massachusetts Building Authority (Building Authority), Worcester City Campus Corporation (WCCC) and Subsidiary, and the University of Massachusetts Amherst Foundation. Separate Statements of Financial Position and Statements of Activities are presented in this report for the University's discretely presented component units, the University of Massachusetts Foundation, Inc., and the University of Massachusetts Dartmouth Foundation, Inc. The statements for these entities are presented in accordance with Financial Accounting Standards Board (FASB) standards, which differ from GASB standards in certain areas such as reporting of pledges to endowment and net position.

Net Position

Condensed statements of net position at June 30, 2018, 2017, and 2016, respectively, are presented on page 9.

As of June 30, 2018, total net position was \$2.4 billion. The University's largest asset continues to be its capital assets, net of accumulated depreciation, of \$5.1 billion at June 30, 2018, \$4.9 billion at June 30, 2017 and \$4.6 billion at June 30, 2016.

Liabilities totaled \$5.1 billion at June 30, 2018, an increase of \$1.0 billion over fiscal year 2017. Long-term liabilities represent 82% of total liabilities at June 30, 2018, primarily consisting of \$2.6 billion of long-term debt and \$1.2 billion of pension and other postemployment benefit (OPEB) liabilities. With the adoption of GASB 75, the University was required to recognize \$817.4 million related to OPEB obligations.

The University's current assets as of June 30, 2018 of \$918.7 million were less than current liabilities of \$934.5 million, and as a result the current ratio was \$0.98 in assets to every one dollar in liabilities. This is due to an increase of the current portion of long-term liabilities. As of June 30, 2017, current assets of \$742.5 million were greater than current liabilities of \$622.1 million, resulting in a current ratio of \$1.19. As of June 30, 2016, current assets of \$677.9 million were less than current liabilities of \$774.8 million, resulting in a current ratio of \$0.86.

Revenues, Expenses, and Changes in Net Position

Condensed statements of revenues, expenses, and changes in net position for the three years ended June 30, 2018 are presented on page 9.

CONDENSED STATEMENTS OF NET POSITION

As of June 30, 2018, 2017, and 2016 (\$ in thousands)	2018	2017	2016
Assets			
Current assets	\$ 918,685	\$ 742,482	\$ 677,927
Noncurrent assets			
Capital assets, net	5,075,476	4,854,110	4,615,776
All other noncurrent assets	1,291,309	1,404,203	1,294,028
Total assets	7,285,470	7,000,795	6,587,731
Deferred Outflows of Resources	341,335	275,725	293,432
Liabilities			
Current liabilities	934,525	622,084	774,837
Noncurrent liabilities	4,161,911	3,562,485	3,294,183
Total liabilities	5,096,436	4,184,569	4,069,020
Deferred Inflows of Resources	141,485	37,671	12,050
Net Position			
Net investment in capital assets	2,288,599	2,208,370	2,013,966
Restricted:			
Nonexpendable	28,022	27,443	18,384
Expendable	222,343	201,710	218,272
Unrestricted	(150,080)	616,757	549,471
Total Net Position	\$ 2,388,884	\$ 3,054,280	\$ 2,800,093

CONDENSED STATEMENTS OF REVENUES, EXPENSES, AND CHANGES IN NET POSITION

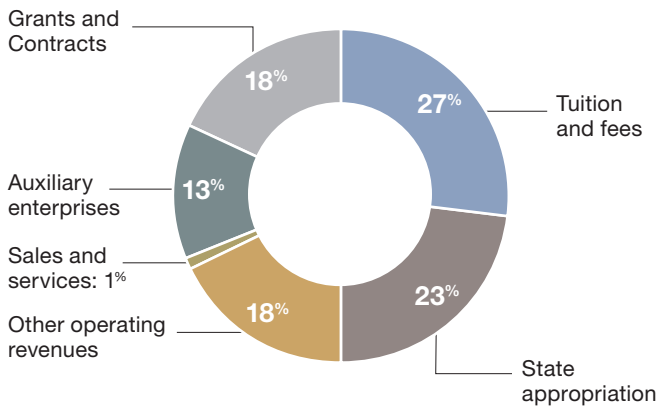
As of June 30, 2018, 2017, 2016 (\$ in thousands)	2018	2017	2016
Operating Revenues			
Tuition and fees, net of scholarships	\$ 874,826	\$ 847,832	\$ 826,815
Grants and contracts	560,990	560,081	528,352
Auxiliary enterprises	416,733	400,822	383,281
Other operating revenues	616,265	631,854	665,048
Total operating revenues	2,468,814	2,440,589	2,403,496
Operating Expenses	3,300,392	3,158,953	3,140,753
Operating Loss	(831,578)	(718,364)	(737,257)
Nonoperating Revenues (Expenses)			
Federal appropriations	6,688	6,602	6,827
State appropriations	751,894	720,817	669,748
Interest on indebtedness	(115,851)	(110,069)	(105,276)
Nonoperating federal grants	81,590	74,050	75,743
Other nonoperating income	110,062	117,248	90,443
Total nonoperating revenues (expenses)	834,383	808,648	737,485
Income Before Other Revenues, Expenses, Gains and Losses	2,805	90,284	228
Other Revenues, Expenses, Gains And Losses			
Capital appropriations, grants and other sources	76,169	150,460	172,557
Disposal of plant facilities	(6,695)	(4,274)	(10,462)
Other additions (deductions)	5,307	17,717	(29,578)
Total other revenues, expenses, gains, and losses	74,781	163,903	132,517
Total Increase In Net Position	77,586	254,187	132,745
Net Position			
Net position at the beginning of the year	3,054,280	2,800,093	2,667,348
Cumulative effect of adopting GASB 75*	(742,982)	-	-
Net position at the beginning of the year, restated	2,311,298	2,800,093	2,667,348
Net position at the end of the year	\$ 2,388,884	\$ 3,054,280	\$ 2,800,093

* Refer to Note 13 of the accompanying financial statements for further discussion related to the adoption of GASB 75

Operating revenues and expenses

While not classified on the financial statements as operating revenue, state appropriations serve as a primary source for funding the core mission of the University. State appropriation revenue, described in detail below, is used almost exclusively to fund payroll for University employees, and as such is considered as operating revenue for management's planning and analysis purposes. Total operating revenues for fiscal year 2018, including state appropriations, increased \$59.3 million (1.9%) from \$3.2 billion in fiscal year 2017. Total operating revenues in fiscal year 2017, including state appropriations, increased \$88.2 million (2.9%) from \$3.1 billion in fiscal year 2016.

FISCAL YEAR 2018 OPERATING REVENUES (including State Appropriations)



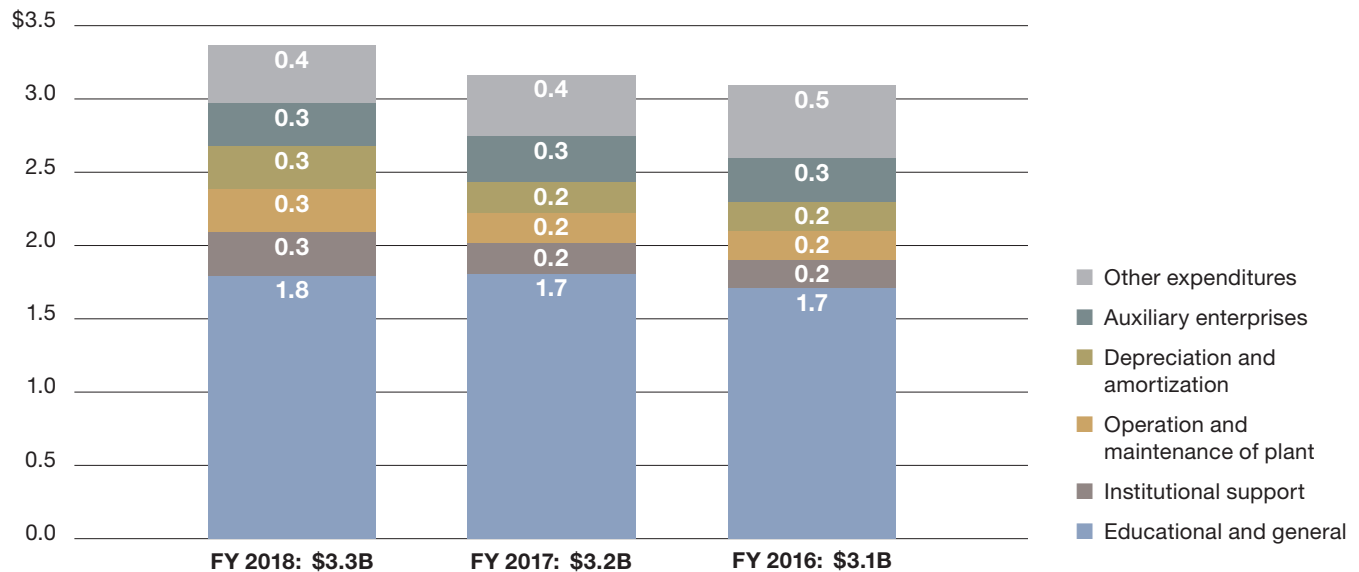
As noted in the fiscal year 2018 operating revenues chart below, the most significant sources of operating revenue for the University in fiscal year 2018 were tuition and fees, grants and contracts, and State appropriations.

Other operating revenues include revenues related to public service activities and consist largely of sales and services provided to third parties by UMMS through its Commonwealth Medicine (CWM) programs. These programs provide public consulting and services in health care financing, administration and policy to federal, state and local agencies and not-for-profit health and policy organizations. In addition to CWM activities, public service activities also include revenue received by UMMS for educational services it provides to its clinical affiliate UMass Memorial Health Care, Inc. (UMass Memorial) as required by the enabling legislation enacted by the Commonwealth in 1997. Public service activities expenditures also include payments made to the Commonwealth pursuant to requirements of legislation enacted by the State Legislature of Massachusetts.

In fiscal year 2018, operating expenses, including depreciation and amortization, totaled \$3.3 billion, as compared to \$3.2 billion in 2017 and \$3.1 billion in 2016. Of this total, \$1.8 billion or 55% was used to support the academic core activities of the University, including \$471.4 million in research. The education and general portion in the three year operating expenses chart below represents expenses in the following functional categories: instruction, research, public service, academic support, student services and scholarships and fellowships.

THREE YEAR OPERATING EXPENSES

(\$ in billions)



State Appropriations

In fiscal year 2018, State appropriations represented approximately 23% of all operating and non-operating revenues. The level of state support is a key factor influencing the University's overall financial condition. Although the state appropriation is unrestricted revenue, nearly 100% of the state appropriation supports payroll and benefits for University employees. In addition to the direct state appropriation there are several smaller appropriations that add to the total state support for the University such as the Star Store lease at the Dartmouth campus and the Springfield Satellite Center, among others. While these smaller line items are in support of campus specific programs and do not support general University operations, they are included in the State appropriations line in the accompanying financial statements, and in the State appropriations line in the table below.

The Commonwealth pays the fringe benefits for University employees paid from state appropriations. Therefore, such fringe benefit support is added to the State appropriations financial statement line item in the accompanying Statements of Revenues, Expenses and Change in Net Position. The University pays the Commonwealth for the fringe benefit cost of the employees paid from funding sources other than Commonwealth operating appropriations (details of the payment are referenced in Note 11 to the accompanying financial statements). These amounts are not included in the State appropriations.

The University's State appropriation including fringe benefits increased in fiscal year 2018 by \$31.1 million from fiscal year 2017, due to a slightly higher level of state appropriation support and an increase in related fringe benefit support. The difference between 2017 and 2016 is mainly based on a change in the accounting treatment of mandatory waivers and tuition remitted as a result of full tuition retention implemented in fiscal year 2017. The passage of this legislation allowed for



100% of tuition to be retained by the University. Beginning in fiscal year 2017, the State appropriation decreased to reflect the reduction in appropriation to offset the tuition that previously was remitted to the State. These changes served to have a net zero impact on both the State funding and the University's operating budget.

The table below details the State appropriations for the fiscal years ended June 30, 2018, 2017, and 2016 and highlights the change as a result of full tuition retention in 2017. The State appropriations are primarily utilized by the University to fund payroll.

STATE APPROPRIATIONS— Change as a Result of Full Tuition Retention

(\$ in thousands)	FY 2018	FY 2017	FY 2016
State appropriations	\$ 528,868	\$ 512,900	\$ 546,952
Plus: fringe benefits	223,026	207,917	178,032
	751,894	720,817	724,984
Less: mandatory waivers	-	-	(24,653)
Less: tuition remitted	-	-	(30,583)
Commonwealth support, net	\$ 751,894	\$ 720,817	\$ 669,748

Capital Appropriations

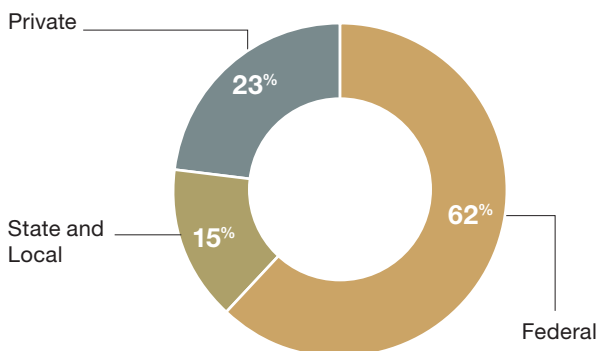
The University faces a financial challenge to maintain and upgrade its capital assets including its infrastructure, buildings and grounds. In order to have a successful capital program, the University must rely on a combination of revenue sources to fund its capital investment. In fiscal year 2018, 2017 and 2016, the capital support provided to the University through appropriations and grants from the Commonwealth was \$67.4 million, \$121.4 million and \$121.3 million, respectively. Beginning in fiscal year 2008, this funding was attributed to the Commonwealth's Division of Capital Asset Management ("DCAM") which funded several large capital projects through the State's Higher Education Bond Bill and Life Sciences Bond Bill, and funds projects on each of the campuses. More recently, state funding has significantly decreased as a result of the implementation of a new capital planning process coordinated by the Executive Office of Education. Funding for this new process is focused on deferred maintenance and as a result the University has changed its funding model for capital investments in new projects, including debt financing and exploring public private partnerships.

Grant and Contract Revenue

Among Massachusetts colleges and universities, the University ranks third in research and development expenditures, behind only MIT and Harvard. Most research at the University is externally funded, with the federal government providing a majority of the funding through the National Institutes of Health, the National Science Foundation, and other agencies.

Collectively, UMass Amherst and UMass Medical School account for approximately 75% of the total research enterprise. The chart below details the University's grant and contract revenues by source for the year ended June 30, 2018.

GRANT AND CONTRACT REVENUE



Discretely Presented Component Units

The University's financial statements include the financial information of the University's discretely presented component units, the University of Massachusetts Foundation, Inc. (UMF) and the University of Massachusetts Dartmouth Foundation, Inc. (UMDF). Further information about these foundations can be found in Note 1 to the accompanying financial statements. Additionally, the individual financial statements of each foundation can be obtained by contacting the foundations directly: jmurphy@umassp.edu for UMF and giving@umassd.edu for UMDF.

University of Massachusetts Foundation, Inc.

UMF was established in 1950 to foster and promote the growth, progress and general welfare of the University, and to solicit, receive and administer gifts and donations for such purposes. UMF maintains a portion of the University's investment portfolio, predominantly the endowment and the quasi-endowment investments. The total portfolio held at UMF as of June 30, 2018, 2017 and 2016 was \$871.9 million, \$819.7 million and \$734.2 million, respectively.

University of Massachusetts Dartmouth Foundation, Inc.

UMDF was established in 1973 to raise funds for the development and improvement of the academic and educational environment for students at the Dartmouth campus and the continued engagement of its alumni. In addition to holding investments for the University, UMF holds a significant portion of the UMDF investments. The total portfolio held by UMDF at June 30, 2018, 2017 and 2016 was \$54.8 million, \$53.1 million and \$52.7 million, of which the majority is invested with UMF.

Tuition and Fees

For academic year 2017–2018, tuition was raised an average of 3.1% for in-state undergraduate students. For academic year 2016–2017, tuition was raised on average 5.6%. Affordability continues to be a priority of the University and increases in fees are considered in conjunction with State support on an annual basis.

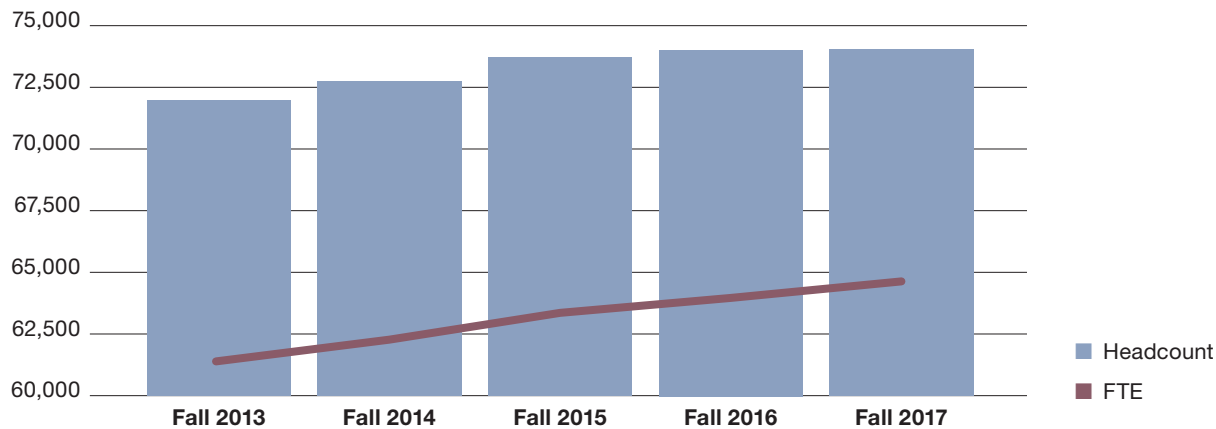
Enrollment

As shown in the table on page 14, total enrollment in the fall of 2017 was 64,530 FTE (74,572 headcount students), an increase of 0.9% over the previous year's enrollment of 63,977 FTE (74,496 headcount students). Enrollment in the fall of 2015 was 63,333 FTE (73,744 headcount students). The five year enrollment growth of 5.2% is meaningful as other institutions of higher education have seen declining enrollments over this period. This growth is consistent with the University's efforts to increase its reach across the Commonwealth and to recruit non-resident students, and is reflective of the quality education provided by the University of Massachusetts.

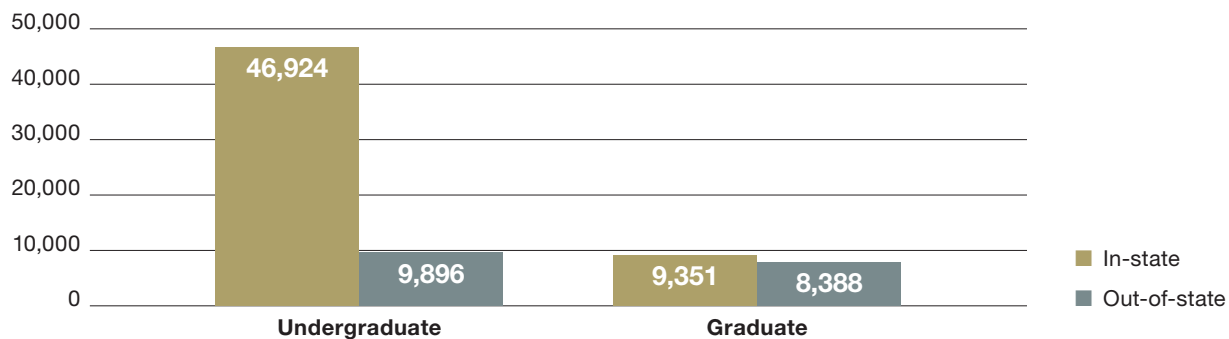
Admission to the University is open to residents of the Commonwealth and non-residents on a competitive basis. For the fall 2017 semester, Massachusetts residents accounted for 82.6% of the University's total undergraduate enrollment. Refer to the table below for detail on the fall 2017 enrollment.

The online learning consortium of the University, UMassOnline, has shown significant growth in enrollments, course offerings and revenue generation benefiting the campuses and raising the profile of the University. UMassOnline provides marketing and technology support for UMass' online offerings that enable students, professionals, and lifelong learners to take courses anywhere, anytime. For fiscal year 2018, UMassOnline and the Continuing Education units at the five campuses collaboratively generated tuition revenue of \$113.2 million and supported 78,404 course enrollments, an increase of 7.9% for revenue and an increase of 3.8% for course enrollments as compared to fiscal year 2017. For fiscal year 2017, UMassOnline generated tuition revenue of \$104.9 million and supported 75,565 course enrollments, an increase of 9.2% for revenue and an increase of 6.6% for course enrollments as compared to fiscal year 2016.

TOTAL ENROLLMENT



FALL 2017 ENROLLMENT BY TYPE



Long-Term Debt

The University had outstanding long-term debt of \$3.1 billion at June 30, 2018, 2017 and 2016. The principal issuer of the University's debt is the Building Authority. Additional issuers utilized by the University include Massachusetts Health and Educational Facilities Authority (MHEFA) and WCCC. Long-term debt is the University's largest liability as of June 30, 2018. For further details on outstanding balances with each issuer, refer to Note 9 of the accompanying financial statements.

The debt financed through the Building Authority is being used for construction and renovation of residence halls and general education buildings, replacement of core infrastructure, and construction of academic, laboratory, and research facilities. The proceeds from the UMass MHEFA bonds were used to create an internal revolving loan program and to fund the construction of two new campus centers at the Boston and Lowell campuses (funded jointly with the Commonwealth).

University Rating

The University is relying on a carefully planned and executed debt strategy to support master and strategic planning at the campuses and for the University as a whole. Bonds issued by the University of Massachusetts and the University of Massachusetts Building Authority are rated AA, Aa2 and

AA- as rated by Fitch, Moody's and Standard & Poor's rating agencies, respectively.

During fiscal year 2018, Moody's revised the University's outlook from negative to stable citing the University's strong management team, steady enrollment, positive operating performance, growth in financial resources and manageable plans for future borrowing. The Moody's rating exceeds some of the University's peer public research universities in New England. The stable outlook for the University is also notable because Moody's revised its rating for the higher education industry to negative in December 2017, noting that negative rating actions are more likely on average in the higher education sector.

Limitations on Additional Indebtedness

The University may, without limit, issue additional indebtedness or request the Building Authority to issue additional indebtedness on behalf of the University so long as such indebtedness is payable from all available funds of the University. As noted in the Board of Trustee policy, each campus' outstanding debt cannot exceed 8% of total operating expenditures.

The Building Authority is authorized by its enabling act to issue bonds with the unconditional guarantee of the Commonwealth



for the punctual payment of the interest and principal payments on the guaranteed bonds. The full faith and credit of the Commonwealth are pledged for the performance of its guarantee. The enabling act, as amended, presently limits to \$200.0 million the total principal amount of notes and bonds of the Building Authority that may be Commonwealth guaranteed and outstanding at any one time. The amount of bond obligations guaranteed by the Commonwealth at June 30, 2018, 2017 and 2016 was \$113.5 million, \$115.3 million and \$117.4 million, respectively.



Capital Plan

A majority of the capital spending during fiscal year 2018 related to continued investments in new buildings and renovation projects. In September 2018, the University's Trustees approved a five-year update to its capital plan for fiscal years 2019–2023, with \$2.1 billion of projects approved to continue or commence over the next 24 months. The University generally has funded its capital plans through a combination of funding received from University operations, bonds issued by the Building Authority and MHEFA, Commonwealth appropriations, and private fundraising.

The University's five-year capital plan for fiscal years 2019–2023 includes major projects that were previously approved by the University Trustees in prior-year capital plans. In recent years, the University enhanced its policy regarding the approval of capital projects to ensure a clear process and to provide for multiple reviews during the process so that the President's Office, Building Authority and the Board of Trustees (the Board) are actively involved. Since the capital program requires significant investment, the President's office and the Board wanted to ensure that the proper steps were in place for reviewing and approving projects so that the University continues to live within its current capital and debt policies.

Factors Impacting Future Periods

There are a number of issues of University-wide importance that directly impact the financial operations of the University. Many of these issues, such as improving academic quality, realizing strong financial results, investing in capital assets, expanding fundraising capacity, operating more efficiently, being the most effective University for students and the Commonwealth given the available resources, and measuring performance are ongoing activities of continuous importance to the Board of Trustees and University leadership that impact the financial and budget planning each year. Student enrollment, the level of state support, the impact of collectively bargained wage increases, and the ability of student-fee supported activities to meet inflationary pressures determine the limits of program expansion, new initiatives and strategic investments, as well as the ability of the University to meet its core mission and ongoing operational needs.

Contacting the University

This financial report is designed to provide the University, the Commonwealth, the public and other interested parties with an overview of the financial results of the University and an explanation of the University's financial condition. If you have any questions about this report or require additional information, please contact the University Controller, Barbara Cevallos, at (617) 287-6017 or by email at bcevallos@umassp.edu.

STATEMENTS OF NET POSITION

As of June 30, 2018 and 2017 (\$ in thousands)	2018	2017
Assets		
Current assets		
Cash and cash equivalents	\$ 88,463	\$ 92,344
Cash held by state treasurer	14,689	15,114
Accounts receivable, net	310,371	316,075
Short-term investments	470,139	286,171
Other current assets	35,023	32,778
Total current assets	918,685	742,482
Noncurrent assets		
Cash held by state treasurer	8,009	7,599
Deposits with bond trustees	319,228	438,585
Accounts receivable, net	64,251	62,121
Long-term investments	775,294	766,392
Other assets	124,527	129,506
Capital assets, net	5,075,476	4,854,110
Total noncurrent assets	6,366,785	6,258,313
Total assets	7,285,470	7,000,795
Deferred Outflows of Resources	341,335	275,725
Liabilities		
Current liabilities		
Accounts payable and accrued expenses	336,077	306,463
Unearned revenues and advances	59,323	52,503
Long-term debt, current portion	445,035	207,424
Other current liabilities	94,090	55,694
Total current liabilities	934,525	622,084
Noncurrent liabilities		
Unearned revenues and advances	120,990	60,702
Long-term debt	2,644,033	2,886,927
Derivative instruments, interest rate swaps	41,602	61,839
Net pension liability	420,234	429,871
Net other postemployment benefits liability	817,357	-
Other long-term liabilities	117,695	123,146
Total noncurrent liabilities	4,161,911	3,562,485
Total liabilities	5,096,436	4,184,569
Deferred Inflows of Resources	141,485	37,671
Net Position		
Net investment in capital assets	2,288,599	2,208,370
Restricted:		
Nonexpendable	28,022	27,443
Expendable	222,343	201,710
Unrestricted	(150,080)	616,757
Total net position	\$ 2,388,884	\$ 3,054,280

See accompanying notes to the financial statements.

STATEMENTS OF REVENUES, EXPENSES, AND CHANGES IN NET POSITION

For The Years Ended June 30, 2018 and 2017 (\$ in thousands)	2018	2017
Revenues		
Operating Revenues		
Tuition and fees (net of scholarship allowances of \$310,106 at June 30, 2018 and \$288,708 at June 30, 2017)	\$ 874,826	\$ 847,832
Grants and contracts	560,990	560,081
Sales and services, educational activities	30,591	28,910
Auxiliary enterprises	416,733	400,822
Other operating revenues:		
Sales and services, independent operations	68,497	79,261
Sales and services, public service activities	381,018	418,726
Other	136,159	104,957
Total operating revenues	2,468,814	2,440,589
Expenses		
Operating expenses		
Educational and general		
Instruction	876,235	824,042
Research	471,135	447,370
Public service	78,238	68,083
Academic support	187,495	177,173
Student services	156,934	151,033
Institutional support	271,535	247,740
Operation and maintenance of capital assets	255,825	240,501
Depreciation and amortization	261,417	245,300
Scholarships and fellowships	50,410	47,710
Auxiliary enterprises	313,741	306,850
Other expenditures		
Independent operations	52,211	57,276
Public service activities	325,216	345,875
Total operating expenses	3,300,392	3,158,953
Operating loss	(831,578)	(718,364)
Nonoperating Revenues (Expenses)		
Federal appropriations	6,688	6,602
State appropriations	751,894	720,817
Gifts	39,022	26,253
Investment income	37,622	31,567
Unrealized gain on investments	5,558	15,466
Endowment income distributed for operations	26,742	26,877
Interest on indebtedness	(115,851)	(110,069)
Nonoperating federal grants	81,590	74,050
Other nonoperating income	1,118	17,085
Net nonoperating revenues	834,383	808,648
Income before other revenues, expenses, gains, and losses	2,805	90,284
Other Revenues, Expenses, Gains and Losses		
Capital appropriations	67,437	121,380
Capital grants, contracts and gifts	8,732	29,080
Endowment return, net of amount used for operations	8,166	21,278
Disposal of plant facilities	(6,695)	(4,274)
Other deductions	(2,859)	(3,561)
Total other revenues, expenses, gains, and losses	74,781	163,903
Total increase in net position	77,586	254,187
Net Position		
Net position at beginning of year	3,054,280	2,800,093
Cummulative effect of adopting GASB 75	(742,982)	-
Net position at beginning of year, adjusted	2,311,298	2,800,093
Net position at end of year	\$ 2,388,884	\$ 3,054,280

See accompanying notes to the financial statements.

STATEMENTS OF CASH FLOWS

For The Years Ended June 30, 2018 and 2017 (\$ in thousands)	2018	2017
Cash Flows from Operating Activities		
Tuition and fees	\$ 974,631	\$ 852,889
Grants and contracts	569,408	814,018
Payments to suppliers	(848,595)	(1,131,219)
Payments to employees	(1,690,799)	(1,461,100)
Payments for benefits	(402,823)	(401,143)
Payments for scholarships and fellowships	(50,402)	(47,675)
Loans issued to students and employees	(8,068)	(8,105)
Collections of loans to students and employees	8,751	6,989
Auxiliary enterprises	416,628	357,968
Sales and services, educational	30,573	25,118
Sales and services, independent operations	68,497	76,221
Sales and services, public service activities	394,927	428,012
Other receipts, net	194,419	-
Net cash used for operating activities	(342,853)	(488,027)
Cash Flows from Noncapital Financing Activities		
State appropriations	751,894	720,817
Federal appropriations	6,688	6,602
Grants, contracts and gifts for other than capital purposes	38,809	32,856
Nonoperating federal grants	81,590	74,050
Student organization agency transactions	1,549	155
Net cash provided by noncapital financing activities	880,530	834,480
Cash Flows from Capital and Other Financing Activities		
Proceeds from capital debt	105,380	236,666
Bond issuance costs paid	-	(620)
Capital appropriations	67,437	121,333
Capital grants, contracts and gifts	8,945	9,332
Purchases of capital assets and construction	(487,912)	(475,488)
Principal paid on capital debt and leases	(96,325)	(120,353)
Interest paid on capital debt and leases	(125,825)	(115,201)
Net cash used for capital financing activities	(528,300)	(344,331)
Cash Flows from Investing Activities		
Proceeds from sales and maturities of investments	1,244,020	1,124,176
Interest on investments	19,774	10,605
Purchases of investments	(1,396,424)	(1,187,713)
Net cash used for investing activities	(132,630)	(52,932)
Net Decrease in Cash and Cash Equivalents	(123,253)	(50,810)
Cash and cash equivalents: beginning of the year	553,642	604,452
Cash and cash equivalents: end of the year	430,389	553,642
Reconciliation of Operating Loss to Net Cash Used by Operating Activities		
Operating loss	(831,578)	(718,364)
Adjustments to reconcile loss to net cash used by operating activities:		
Depreciation and amortization expense	261,417	245,300
Changes in assets and liabilities:		
Accounts receivable, net	3,574	(33,994)
Other assets	2,734	44,153
Accounts payable and accrued expenses	41,749	(26,041)
Unearned revenues and advances	67,108	11,846
Other liabilities	33,411	(46,969)
Pension liability	(9,637)	21,453
Other postemployment benefits liability	74,375	-
Changes in deferred outflows related to employee benefits	(89,820)	(11,032)
Changes in deferred inflows	103,814	25,621
Net cash used for operating activities	(342,853)	(488,027)
Supplemental Disclosure of Noncash Activities		
Bonds issued to refund existing debt	-	130,325
Assets acquired and included in accounts payable and other liabilities	49,110	60,853
Donated assets	1,727	85,632
Accrued interest and bond issuance costs	22,305	22,696

See accompanying notes to the financial statements.

COMPONENT UNITS STATEMENTS OF FINANCIAL POSITION

As of June 30, 2018 and 2017 (\$ in thousands)	2018	2017
Assets		
Cash	\$ 1,153	\$ 1,424
Bequests receivable	399	963
Pledges receivable, net	25,180	24,960
Investments of the Foundation and held on behalf of the University	1,223,596	1,165,270
Prepaid expenses and other assets	2,592	2,576
Land, property, plant and equipment, net	16,906	17,332
Total assets	1,269,826	1,212,525
Liabilities and Net Assets		
Liabilities		
Accounts payable and accrued expenses	448	74
Deferred revenue	1,049	1,162
Obligations to beneficiaries of split-interest agreements	2,384	2,764
Assets held on behalf of others	678,890	660,074
Total liabilities	682,771	664,074
Net assets		
Unrestricted	33,993	40,589
Temporarily restricted	119,694	99,883
Permanently restricted	433,368	407,979
Total net assets	587,055	548,451
Total liabilities and net assets	\$ 1,269,826	\$ 1,212,525

COMPONENT UNITS STATEMENTS OF ACTIVITIES

For The Years Ended June 30, 2018 (with summarized financial information for the year ended June 30, 2017) (\$ in thousands)	Unrestricted	Temporarily Restricted	Permanently Restricted	Total 2018	Total 2017
Support and Revenue					
Gifts, bequests and grants	\$ 552	\$ 6,056	\$ 24,995	\$ 31,603	\$ 43,573
Other contributions	946	515	509	1,970	3,199
Total investment income, including net gains (losses) - net of fees	36,000	28,998	(283)	64,715	109,274
Investment management fee	11,022	-	-	11,022	10,010
Other income	51	236	36	323	301
Net assets released from restrictions	15,783	(15,783)	-	-	-
Total support and revenue	64,354	20,022	25,257	109,633	166,357
Expenses					
Distributions to the University	30,846	-	-	30,846	31,161
University program support	10,084	-	-	10,084	11,037
Fundraising support	6,210	-	-	6,210	5,684
Administrative and general	3,122	-	-	3,122	2,611
Total expenses	50,262	-	-	50,262	50,493
Excess of support and revenue over expenses	14,092	20,022	25,257	59,371	115,864
Less: amounts held on behalf of the University	(18,697)	-	-	(18,697)	(38,633)
Less: amounts held on behalf of EMKI	(1,683)	-	-	(1,683)	(489)
Transfers to (from) other funds	(89)	(43)	132	-	-
Change in value of split interest agreements	(387)	-	-	(387)	(737)
Adjustment for underwater endowments	168	(168)	-	-	-
Change in net assets	(6,596)	19,811	25,389	38,604	76,005
Net assets, beginning of year	40,589	99,883	407,979	548,451	472,446
Net assets, end of year	\$ 33,993	\$ 119,694	\$ 433,368	\$ 587,055	\$ 548,451

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Notes to Consolidated Financial Statements

1. Summary of Significant Accounting Policies

Reporting entity

The financial statements herein present the financial position, results of operations, changes in net position, and cash flows of the University of Massachusetts (University), a federal land grant institution. The financial statements of the University include the campuses of Amherst, Boston, Dartmouth, Lowell, Medical School, and the President's Office of the University, Worcester City Campus Corporation (WCCC), the University of Massachusetts Amherst Foundation (UMass Amherst Foundation), as well as the University of Massachusetts Building Authority (Building Authority).

The Building Authority is a public instrumentality of the Commonwealth of Massachusetts (Commonwealth) created by Chapter 773 of the Acts of 1960 (referred to as the Enabling Act), whose purpose is to provide dormitories, dining commons, and other buildings and structures for use by the University. WCCC is a tax exempt organization founded to support research and real property activities for the University. The UMass Amherst Foundation was established in 2003 to support private fundraising on behalf of the faculty and students of the Amherst campus. These component units are included in the financial statements of the University because of the significance and exclusivity of their financial relationships with the University.

The University also includes the financial information of the University's discretely presented component units, the University of Massachusetts Foundation, Inc. (UMF) and the University of Massachusetts Dartmouth Foundation, Inc. (UMDF). These foundations are related tax-exempt organizations founded to foster and promote the growth, progress and general welfare of the University. These foundations are Massachusetts not-for-profit organizations legally separate from the University but included in the financial statements due to the nature and significance of their financial relationship with the University. These foundations are separately presented as an aggregate component unit on page 19 of these financial statements in accordance with accounting and reporting requirements prescribed by the Financial Accounting Standards Board (FASB). All of the financial data for these organizations was derived from each entity's individual audited financial statements, each having a fiscal year end of June 30. In these financial statements, UMF and UMDF are collectively known as The Foundation. Refer to Note 4 which includes the Foundation agency funds held on behalf of the University.

The separately audited financial statements of the component units noted above may be obtained from the various entities, or by contacting the University Controller, bcevallos@umassp.edu, for component unit contact information.

The University is a business-type activity of the Commonwealth. The financial balances and activities included in these financial statements are, therefore, also included in the Commonwealth's comprehensive annual financial report.

Basis of presentation

The accompanying financial statements have been prepared in accordance with U.S. generally accepted accounting principles (GAAP) as prescribed by the Governmental Accounting Standards Board (GASB) using the economic resources measurement focus and the accrual basis of accounting. These financial statements are reported on a combined basis, and all intra-University transactions are eliminated.

Pursuant to GASB Statement No. 35, *Basic Financial Statements and Management's Discussion and Analysis-for Public Colleges and Universities* (GASB 35), the University's activities are considered to be a single business-type activity and accordingly, are

reported in a single column in the financial statements. Business-type activities are those that are financed in whole or part by funds received by external parties for goods or services.

On the Statement of Revenues, Expenses and Changes in Net Position, the University's operating activities consist of tuition and fees, grants and contracts, sales and services and auxiliary enterprise revenues. Operating expenses include, among other items, payroll, fringe benefits, utilities, supplies and services, depreciation, and amortization. Nonoperating revenues or expenses are those in which the University receives or gives value without directly giving or receiving equal value, such as State and Federal appropriations, Federal Pell grants, private gifts, and investment income. Revenues are recognized when earned and expenses are recognized when incurred with the exception of revenue earned on certain public service activities. Restricted grant revenue is recognized only when all eligibility requirements have been met. The University applies restricted net assets first when an expense or outlay is incurred for purposes for which both restricted and unrestricted net assets are available.

Net position

GASB 35 establishes standards for external financial reporting by public colleges and universities that resources be classified into the following net position categories:

- **Invested in capital assets, net of related debt:** Capital assets, at historical cost or fair market value on date of gift, net of accumulated depreciation and outstanding principal balances of debt attributable to the acquisition, construction or improvement of those assets.
- **Restricted nonexpendable:** Resources subject to externally imposed stipulations that they be maintained permanently by the University.
- **Restricted expendable:** Resources whose use by the University is subject to externally imposed stipulations. Such assets include restricted grants and contracts, the accumulated net gains/losses on true endowment funds, as well as restricted funds loaned to students, restricted gifts and endowment income, and other similar restricted funds.
- **Unrestricted:** The net position that is not subject to externally imposed restrictions governing their use are classified as unrestricted net position. The University's unrestricted net position may be designated for specific purposes by management or the Board of Trustees. Substantially all of the University's unrestricted net position is designated to support academic and research initiatives or programs, auxiliary enterprises, quasi-endowments, or commitments to capital construction projects. Note 15 describes these designations in more detail.

Cash and cash equivalents

Cash and cash equivalents consist primarily of demand deposit accounts, savings accounts, and money market accounts with an original maturity of three months or less.

Accounts receivable, net

Accounts receivable consists of receivables for tuition and fees, grants and contracts, student loans, Commonwealth Medicine, and pledges. The University establishes an allowance for receivables based on management's expectation regarding the collection of the receivable and the University's historical experience for collections.

The University receives unconditional promises to give through private donations or pledges from corporations, foundations, alumni and other supporters of the University. Revenue is recognized when a pledge is received and all eligibility requirements, including time and purpose requirements, are met. These pledges have been recorded as pledges receivable on the Statement of Net Position and as non-endowment gift revenues or capital gift revenue on the Statement of Revenues, Expenses, and Changes in Net Position, at the present value of the estimated future cash flows. Since the University cannot fulfill the time requirement for pledges to endowments until the gift is received, pledges to endowments are not reported. Because of uncertainties with regard to their realizability and valuation, bequests and other conditional promises are not recorded.

Investments

Investments are measured and recorded at fair value. Short-term investments consist of deposits with original maturities of less than one year and are available for current use. Securities received as a gift are recorded at estimated fair value at the date of the gift. Investment income includes dividends and interest income and is recognized on the accrual basis. In computing realized gains and losses, cost is determined on a specific identification basis.

Endowment

The University of Massachusetts Foundation, Inc. (Foundation) maintains and administers the University's endowment assets and Intermediate Term Investment Fund (ITIF). The Foundation utilizes the pooled investment concept whereby all invested funds are included in one investment pool, unless otherwise required by the donor.

Pooled investment funds will receive an annual distribution, based on the endowment fund's average market value for the preceding twelve quarters on a one year lag. Only quarters with funds on deposit are included in the average. In addition, a prudence rule is utilized, limiting spending from a particular endowment fund to be no lower than 93% of its carrying value. The actual spending rate approved for the years ended June 30, 2018 and 2017 was 4%.

Inventories

The University inventories consist of books, general merchandise, central stores, vaccines, and operating supplies which are carried at the lower of cost (first-in, first-out and average cost methods) or market value. Inventory balances are included within other current assets on the Statements of Net Position.

Capital assets

Capital assets are stated at cost on the date of acquisition or, in the case of gifts, fair value upon date of donation. Net interest costs incurred during the construction period for major capital projects are capitalized. Repairs and maintenance costs are expensed as incurred, whereas major improvements that extend the estimated useful lives of the assets are capitalized as additions to capital assets. The University does not capitalize works of art, historical treasures or library books.

The University capitalizes assets with useful lives greater than one year and acquisition costs greater than or equal to \$5,000. The University computes depreciation using the straight-line method over the asset's useful life and applies a half year convention in the year the asset is acquired or placed in service. Land is not depreciated.

In the table to the right is the range of useful lives for the University's depreciable assets:

The University leases various facilities and equipment through capital leases. Facilities and equipment under capital leases are recorded at the present value of future minimum lease payments.

Depreciable Asset	Useful Life
Land improvements	20 years
Buildings	20–50 years
Building improvements	3–20 years
Equipment, furniture and IT infrastructure	3–15 years
Software	5 years

Deferred outflows of resources

Deferred outflows of resources are the consumption of assets or increase in liabilities that are applicable to future reporting periods and are reported in a separate section of the Statements of Net Position.

The University's deferred outflows consist of:

- The difference between the reacquisition price and the carrying value of refunded revenue bonds. These amounts are to be recognized as a component of interest expense over the shorter of the remaining life of the refunded bonds or the life of the new bonds.
- The accumulated change in the fair value of hedging derivatives. This change is recorded to offset the value of the University's interest-rate swap liabilities which qualify for treatment as an effective hedge based on historic interest flows.
- The deferral of the impact of assumption changes and investment losses that increase the pension and other postemployment benefits liabilities. These amounts are recognized as a component of operating expenses in future reporting periods.

Compensated absences

Employees earn the right to be compensated during absences for annual vacation leave and sick leave. Within the Statements of Net Position, a liability is recorded for vacation and sick leave benefits earned as of the fiscal year-end. The recorded liability is classified as current and noncurrent based on the amount estimated to be paid to eligible employees in one year and beyond one year, respectively, on the Statements of Net Position.

Unearned revenue and advances

Unearned revenue consists of amounts billed or received in advance of the University providing goods or services. Unearned revenue is subsequently recognized as qualifying expenses are incurred and therefore the revenue is earned.

In addition, certain loans to students are administered by the University with funding primarily supported by the federal government. The University's Statements of Net Position include both the notes receivable and the related federal refundable loan liability, representing federal capital contributions owed upon termination of the program.

Deferred inflows of resources

Deferred inflows of resources are the acquisition of assets or reduction of liabilities that are applicable to future reporting periods and are reported in a separate section of the Statements of Net Position.

The University's deferred inflows consist of:

- Experience gains that reduce the pension and other postemployment benefits liabilities to be recognized as a component of operating expenses in future reporting periods.

Tuition and fees, net of scholarship allowances

Student tuition and fees, housing, dining, and other similar auxiliary revenues are reported net of any related scholarships and fellowships applied to student accounts. However, scholarships and fellowships paid directly to students are separately reported as scholarships and fellowships expenses.

Grants and contracts

The University receives monies from federal and state government agencies under grants and contracts for research and other activities including medical service reimbursements. The University records a receivable and corresponding revenue for grants and contracts and capital appropriations at the point all eligibility requirements (e.g. allowable costs are incurred) are met.

The University records the recovery of indirect costs applicable to research programs and other activities which provide for the full or partial reimbursement of such costs, as revenue. Recovery of indirect costs for the years ended June 30, 2018 and 2017 was \$131.4 million and \$131.6 million, respectively, and is a component of grants and contracts revenue on the Statements of Revenues, Expenses, and Changes in Net Position.

Auxiliary enterprises

An auxiliary enterprise is an entity that exists to furnish a service to students, faculty or staff acting in a personal capacity, and that charges a fee for the use of goods and services.

Other operating revenues and expenditures: sales and services, public service activities

Public service activities consist largely of sales and services provided to third parties by the UMass Medical School under its Commonwealth Medicine (CWM) programs, which provide public consulting and services in health care financing, administration and policy to federal, state and local agencies and not-for-profit health and policy organizations. Included in this category of activities are CWM revenues of \$226.2 million and \$296.0 million for the years ended June 30, 2018 and 2017, respectively. Included in expenditures are CWM expenditures of \$173.6 million and \$253.0 million for the years ended June 30, 2018 and 2017, respectively.

Public Service Activities also include payments received by the Medical School for educational services it provides to its clinical affiliate, UMass Memorial Hospital, as required by the enabling legislation enacted by the Commonwealth in 1997. Educational services revenues included in public service revenues were \$171.7 million and \$140.0 million for the years ended June 30, 2018 and 2017, respectively. Finally, Public Service Activity expenditures include payments made to the Commonwealth of \$154.7 million and \$96.5 million for the years ended June 30, 2018 and 2017, pursuant to requirements of legislation enacted by the Commonwealth.

Fringe benefits for current employees and postemployment obligations: pension and non-pension

The University participates in the Commonwealth's fringe benefit programs, including active employee and postemployment health insurance, unemployment compensation, pension, and workers' compensation benefits. Health insurance and pension costs for active employees and retirees are paid through a fringe benefit rate charged to the University by the Commonwealth. Workers' compensation costs are assessed separately based on actual University experience.

Pursuant to the provisions of Paragraph(e), Section 5 of Chapter 163 of the Acts of 1997 and consistent with the September 22, 1992 Memorandum of Understanding between the Commonwealth's Executive Office of Administration and Finance and the University of Massachusetts, the University's Medical School campus has assumed the obligation for the cost of fringe benefits provided by the Commonwealth to University Medical School employees (other than those employees paid from state appropriated funds) for all periods on or after July 1, 1989. The Medical School determines the actual costs for the health insurance benefits and actuarially calculates the incurred service costs for pensions and retiree health insurance.

Use of estimates

The preparation of financial statements in conformity with GAAP requires management to make estimates and assumptions that affect the reported amounts of assets and liabilities, the disclosure of contingent assets and liabilities at the dates of the financial statements, and the reported amounts of revenues and expenses during the reporting periods. Actual results could differ from these estimates. The most significant areas that require management estimates relate to valuation of certain investments and derivative instruments, useful lives and related depreciation of capital assets, and accruals for pension and other postemployment related benefits.

Income tax status

The University and the Building Authority are component units of the Commonwealth and are exempt from Federal and state income tax under the doctrine of intergovernmental tax immunity found in the U.S. Constitution. The University qualifies as a public charity eligible to receive charitable contributions under Section 170(b)(1)(A)(ii) of the Internal Revenue Code, as amended (the Code). The Building Authority qualifies as a public charity under Section 170(b)(1)(A)(iv) of the Code.

WCCC, UMF and UMDF are organizations described in Section 501(c)(3) of the Code, and are generally exempt from income taxes pursuant to Section 501(a) of the Code. WCCC, UMF and UMDF are required to assess uncertain tax positions and have determined that there were no such positions that are material to the financial statements as of June 30, 2018 and 2017, respectively.

Newly implemented accounting standards

Effective for fiscal year 2018, the University adopted GASB Statement No. 75, *Accounting and Financial Reporting for Postemployment Benefits Other Than Pensions*. The Statement supersedes GASB Statement No. 45 and establishes new requirements for calculating and reporting the University's postemployment benefits. The implementation of GASB 75 resulted in a cumulative effect adjustment of \$743.0 million to the beginning net position of the 2018 Statement of Revenues, Expenses, and Changes in Net Position as of July 1, 2017 for the recording of the obligation associated with postemployment benefits other than pensions. The application of GASB 75 was recorded effective in the beginning of fiscal year 2018 because this was the earliest date for which was practical based on available information.

Effective for fiscal year 2018, GASB issued Statement No. 86, *Certain Debt Extinguishment Issues*, to improve consistency in accounting and financial reporting for in-substance defeasance of debt. This Statement also improves accounting and financial reporting for prepaid insurance on debt that is extinguished and notes to financial statements for debt that is defeased in substance. Adoption of this standard is reflected in the required disclosures surrounding debt in fiscal year 2018, with no material impact to those disclosures.

Effective for fiscal year 2018, GASB issued Statement No. 81, *Irrevocable Split-Interest Agreements*, which intends to improve accounting and financial reporting for irrevocable split-interest agreements by providing recognition and measurement guidance for beneficiaries of these type of agreements. Adoption of this standard had no effect on the University's financial statements.

Reclassifications

Certain reclassifications were made in prior year to conform to current year presentation.

2. Cash Held by State Treasurer

Accounts payable, accrued salaries and outlays for future capital projects to be funded from state-appropriated funds totaled \$22.7 million at June 30, 2018 and June 30, 2017. The University has recorded a comparable amount of cash held by the State Treasurer for the benefit of the University, which will be subsequently utilized to pay for such liabilities. The cash is held in the State Treasurer's pooled cash account. The Commonwealth requires all bank deposits in excess of insurance coverage by the FDIC to be collateralized with a perfected pledge of eligible collateral. Eligible collateral must be pledged in an amount equal to 102% of the amount of the deposits that exceed FDIC insurance. Sufficient collateral to cover total Commonwealth deposits in excess of the FDIC insured amount must be pledged and held in safekeeping by a custodian that is approved by and under the control of the Treasurer and Receiver - General.

3. Deposits with Bond Trustees

Deposits with bond trustees primarily consist of unspent bond proceeds, amounts held for the future payment of debt service on such borrowings and designated funds from the Building Authority. At June 30, 2018 and 2017, there was \$319.2 million and \$438.6 million, respectively, held by trustees related to the Building Authority.

Pursuant to Trust Agreements between the Building Authority and its bond trustees, all funds deposited with those trustees shall be continuously maintained for the benefit of the Building Authority and Registered owners of the Bonds.

All investments shall be held with a bank or trust company approved by the Trustees and the Building Authority, as custodians, or in such other manner as may be required or permitted by applicable state and Federal laws and regulations. Investments shall consist of direct obligations of, or obligations which are unconditionally guaranteed by the United States of America, or any other agency or corporation which has been created pursuant to an act of Congress of the United States as an agency or instrumentality thereof; or other marketable securities eligible as collateral for the deposit of trust funds under regulations of the Comptroller of the Currency having a market value not less than the amount of such deposit. Direct obligations of, or obligations which are unconditionally guaranteed by the United States of America or any other agency or corporation which has been created pursuant to an act of Congress of the United States as an agency or instrumentality thereof, may be subject to repurchase upon demand by the owner pursuant to a repurchase agreement with a bank or trust company.

Custodial Credit Risk – Custodial credit risk is the risk that, in the event of a failure of the counterparty, the University would not be able to recover the value of its deposits and cash equivalents that were in the possession of an outside party. The Building Authority holds a majority of its cash and cash equivalents in high quality money market mutual funds that invest in securities that are permitted investments under the Building Authority's Enabling Act or in money market mutual funds that have been specifically permitted by state legislation.

For the years ending June 30, 2018 and 2017, the Building Authority's cash and cash equivalents consisted of the following (\$ in thousands):

	2018	2017
Cash	\$ 4,093	\$ 5,553
Permitted Money Market Accounts	303,431	426,797
Total Cash and Cash Equivalents	\$ 307,524	\$ 432,350

Deposits are exposed to custodial risk if they are uninsured and uncollateralized. The University does not have a deposit policy for custodial credit risk. As of June 30, 2018 and June 30, 2017, the bank balances of uninsured deposits totaled \$4.4 million and \$5.1 million, respectively.

Custodial credit risk generally applies only to direct investments in marketable securities. Custodial credit risk does not apply to indirect investment in securities through the use of mutual funds or government investment pools, such as Massachusetts Municipal Depository Trust (MMDT), a money market account sponsored by the Treasurer of the Commonwealth and managed by Federated Investors, Inc. Direct investments in marketable securities are held by the Building Authority's Bond Trustee as the Building Authority's agent. In accordance with the Building Authority's repurchase agreements, collateral for the agreements is held in segregated accounts with market values between 100% and 105% of the repurchase price, depending on the type of asset used as security and the specific repurchase agreement.

Concentration of Credit Risk – Concentration of credit risk is assumed to arise when the amount of deposits or investments that the University has with one issuer exceeds 5% or more of the total value of the University's investments or deposits. The Building Authority places no limit on the amount it may invest in any one issuer. As of June 30, 2018 and 2017, the Building Authority had 98.3% and 98.8% of its investments in MMDT, respectively.

Credit Risk – Debt securities are subject to credit risk, which is the chance that an issuer will fail to pay interest or principal in a timely manner, or that negative perceptions of the issuer’s ability to make these payments will cause security prices to decline. These circumstances may arise due to a variety of factors such as financial weakness, bankruptcy, litigation and/or adverse political developments. Certain debt securities, primarily obligations of the U.S. government or those explicitly guaranteed by the U.S. government, are not considered to have credit risk. Credit risk is the risk that an issuer of an investment will not fulfill its obligation to the holder of the investment. The risk is measured by the assignment of a rating by a nationally recognized statistical rating organization.

Interest Rate Risk – Interest rate risk is the risk that changes in interest rates over time will adversely affect the fair value of an investment. The Building Authority has a formal investment policy that establishes minimum credit quality of certain instruments, outlines investment procedures, and provides for periodic reporting. Generally, the Building Authority holds its investments until maturity.

4. Investments

The investment portfolio of the University reflected on the Statements of Net Position for the year ended June 30, 2018 and 2017, respectively, includes the following:

	2018	2017
Short-term investments	\$ 470,139	\$ 286,171
Long-term investments	775,294	766,392
Total	\$1,245,433	\$1,052,563

Investment policies are established by the Board of Trustees of the University (the Board). The goals of these policies are to preserve capital, provide liquidity, and generate investment income. The University has statutory authority under Massachusetts General Laws Chapter 75 to collect, manage, and disburse trust funds of the University. The Foundation holds investments on behalf of the University. In the table below, these investments are identified as Foundation Agency Funds.

The endowment and similar investment holdings of the University, Foundation Agency Funds, and the Foundation, as of June 30, 2018 and 2017, respectively are summarized below (\$ in thousands):

	University		Foundation	
	2018	2017	2018	2017
Cash and cash equivalents	\$ 118,491	\$ 65,303	\$ 30,545	\$ 29,477
Money market and other investments	321,900	199,000	4,430	6,265
Fixed income investments	135,852	139,294	4,662	4,643
Pooled investments - Fund I	-	-	528,921	488,163
Commercial ventures and intellectual property	1,994	1,674	-	-
Annuity life income funds	15,833	14,657	3,675	4,087
	\$ 594,070	\$ 419,928	\$ 572,233	\$ 532,635
Foundation agency funds:				
Pooled investments - Fund I	341,464	331,524	341,464	331,524
Pooled investments - Fund II	309,899	301,111	309,899	301,111
Total	\$1,245,433	\$1,052,563	\$1,223,596	\$1,165,270

Investments held at the Foundation within Fund I represent the University’s endowment funds. These funds include both donor-restricted endowments and quasi-endowments. Investments held at the Foundation within Fund II represent a portion of the operating cash balance of the University that has been transferred to the Foundation for investment purposes.

Custodial Credit Risk – Investment securities are exposed to custodial credit risk if they are uninsured or not registered in the name of the University and are held by either the counterparty or the counterparty’s trust department or agent but not in the University’s name.

The University maintains depository, payroll, disbursement, receipt, and imprest accounts. In addition to bank account deposits, the University held money market instruments which are classified as investments. Interest bearing and money market accounts carry Federal Deposit Insurance Corporation (FDIC) insurance up to \$250,000 per account. None of the accounts are collateralized above the FDIC insured amounts.

Within the University endowment and similar investment holdings table above, the carrying amounts of bank balances with uninsured or uncollateralized deposits were \$450.1 million and \$293.9 million, at June 30, 2018 and 2017, respectively.

The University held non-money market investments with a carrying and fair market value of \$811.1 million and \$778.0 million at June 30, 2018 and 2017, respectively. In the event of negligence due to the University's custodian and/or investment manager(s), it is expected that the investment balances would be fully recovered. However, these amounts are subject to both interest rate risk and credit risk.

Concentration of Credit Risk – As of June 30, 2018 and 2017, there is no concentration of investments from one issuer equal or greater than 5% of the portfolio. Investments issued or guaranteed by the U.S. government, as well as investments in mutual funds and other pooled investments are excluded from consideration when evaluating concentration risk.

Credit Risk – The University's Investment Policy and Guidelines Statement allows each portfolio manager full discretion within the parameters of the investment guidelines specific to that manager. Nationally recognized statistical rating organizations, such as Standards & Poor's (S&P) assign credit ratings to security issues and issuers that indicate a measure of potential credit risk to investors.

The table below presents the rated debt investments at fair value by credit quality of the University's investment portfolio as of June 30, 2018 (\$ in thousands):

	S&P quality ratings								Total
	AAA	AA	A	BBB	BB	B	<B	Unrated	
Debt securities									
US treasury securities	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 44,611	\$ 44,611
Government agency bonds	-	-	-	-	-	-	-	351	351
Asset backed securities	11,763	-	167	389	-	-	-	5,333	17,652
Commercial mortgage-backed securities	298	-	-	-	-	-	-	6,966	7,264
Government issued commercial mortgage-backed securities	-	-	-	-	-	-	-	122	122
Government mortgage-backed securities	-	-	-	-	-	-	-	3,772	3,772
Non-government backed CMO's	640	-	-	-	-	-	-	799	1,439
Corporate bonds	561	4,119	28,168	29,328	314	-	-	763	63,253
Municipal and provincial bonds	412	731	405	647	-	-	-	-	2,195
Other fixed income	69,199	18,373	16,452	22,319	7,658	2,451	276	8,049	144,777
Total debt securities	\$ 82,873	\$ 23,223	\$ 45,192	\$ 52,683	\$ 7,972	\$ 2,451	\$ 276	\$ 70,766	\$ 285,436

The table below presents the rated debt investments at fair value by credit quality of the University's investment portfolio as of June 30, 2017 (\$ in thousands):

	S&P quality ratings								Total
	AAA	AA	A	BBB	BB	B	<B	Unrated	
Debt securities									
US treasury securities	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 48,919	\$ 48,919
Government agency bonds	-	-	-	-	-	-	-	432	432
Asset backed securities	14,381	-	179	-	-	-	-	6,011	20,571
Commercial mortgage-backed securities	1,119	-	-	-	-	-	-	4,652	5,771
Government issued commercial mortgage-backed securities	-	-	-	-	-	-	-	253	253
Government mortgage-backed securities	-	-	-	-	-	-	-	3,047	3,047
Non-government backed CMO's	-	-	-	-	-	-	-	885	885
Corporate bonds	743	3,178	23,812	34,950	196	-	-	1,250	64,129
Municipal and provincial bonds	425	1,773	460	1,491	-	-	-	-	4,149
Other fixed income	61,128	25,099	18,617	27,621	13,038	5,683	1,225	8,944	161,355
Total debt securities	\$ 77,796	\$ 30,050	\$ 43,068	\$ 64,062	\$ 13,234	\$ 5,683	\$ 1,225	\$ 74,393	\$ 309,511

Interest Rate Risk – The University’s Investment Policy and Guidelines Statement establishes targets for the preferred duration of the fixed income component of the investment portfolio by asset class by limiting investments through targeted allocations to different asset classes.

The following table presents the fair value by investment maturity of the rated debt investments component of the University’s investment portfolio as of June 30, 2018 (\$ in thousands):

	Investment maturity (in years)				Total
	Less than 1	1 to 5	6 to 10	More than 10	
Debt securities					
US treasury securities	\$ -	\$ 39,226	\$ 5,385	\$ -	\$ 44,611
Government agency bonds	-	351	-	-	351
Asset backed securities	4,960	12,525	167	-	17,652
Commercial mortgage-backed securities	529	5,797	938	-	7,264
Government issued commercial mortgage-backed securities	122	-	-	-	122
Government mortgage-backed securities	446	3,326	-	-	3,772
Non-government backed CMO’s	640	799	-	-	1,439
Corporate bonds	15,131	45,172	2,527	423	63,253
Municipal and provincial bonds	2,051	144	-	-	2,195
Other fixed income	27,843	90,162	19,541	7,231	144,777
Total debt securities	\$51,722	\$197,502	\$28,558	\$ 7,654	\$ 285,436

The following table presents the fair value by investment maturity of the rated debt investments component of the University’s investment portfolio as of June 30, 2017 (\$ in thousands):

	Investment maturity (in years)				Total
	Less than 1	1 to 5	6 to 10	More than 10	
Debt securities					
US treasury securities	\$ -	\$ 44,383	\$ 4,536	\$ -	\$ 48,919
Government agency bonds	296	136	-	-	432
Asset backed securities	10,194	10,198	179	-	20,571
Commercial mortgage-backed securities	1,671	4,100	-	-	5,771
Government issued commercial mortgage-backed securities	23	230	-	-	253
Government mortgage-backed securities	425	2,622	-	-	3,047
Non-government backed CMO’s	-	885	-	-	885
Corporate bonds	18,784	40,626	4,307	412	64,129
Municipal and provincial bonds	4,003	146	-	-	4,149
Other fixed income	24,751	81,212	44,488	10,904	161,355
Total debt securities	\$60,147	\$184,538	\$53,510	\$11,316	\$ 309,511

Fair Value Measurement – GASB Statement No. 72, *Fair Value Measurement and Application*, establishes general principles for measuring fair value and requires enhanced disclosures about fair value measurements of certain assets and liabilities, such as investments and interest-rate swaps. Fair value represents the price that would be received to sell an asset or paid to transfer a liability in an orderly transaction between market participants at the measurement date. GASB 72 requires that the University categorize these assets and liabilities measured at fair value using a three-tiered hierarchy based on the valuation methodologies employed.

The hierarchy is defined as follows:

Level 1 – Inputs to the valuation methodology are unadjusted quoted prices for identical assets or liabilities in active markets that are available at the measurement date.

Level 2 – Inputs to the valuation methodology include:

- Quoted prices for similar assets or liabilities in active markets;
- Quoted prices for identical or similar assets or liabilities in inactive markets;
- Inputs other than quoted prices that are observable for the asset or liability;
- Inputs that are derived principally from or corroborated by observable market data by correlation or other means.

Level 3 – Inputs to the valuation methodology are unobservable and significant to the fair value measurement. Unobservable inputs reflect the University’s own assumptions about the inputs market participants would use in pricing the asset or liability (including assumption about risk). Unobservable inputs are developed based on the best information available in the circumstances and may include the University’s own data.

When available, quoted prices are used to determine fair value. When quoted prices in active markets are available, investments are classified within Level 1 of the fair value hierarchy. The University’s Level 1 investments primarily consist of investments in U.S. Treasury obligations, equity securities, and mutual funds. When quoted prices in active markets are not available, fair values are based on evaluated prices received from the University’s custodian of investments in conjunction with a third party service provider and are reported within Level 2 of the fair value hierarchy. The inputs for Level 2 include, but are not limited to, pricing models such as benchmarking yields, reported trades, broker-dealer quotes, issuer spreads and benchmarking securities, among others. The University’s Level 2 investments primarily consist of investments in U.S. government and agency obligations, asset-backed securities, and corporate debt securities that did not trade on the University’s fiscal year end date.

As a practical expedient to estimate the fair value of the University’s interests, certain investments in commingled funds and limited partnerships are reported at the net asset value (NAV) determined by the fund managers. Because these investments are not readily marketable, their estimated fair values may differ from the values that would have been assigned had a ready market for such investments existed, and such differences could be material. As of June 30, 2018 and 2017, the University had no plans or intentions to sell such investments at amounts different from NAV.

The following table summarizes the fair value of the University’s investments by type as of June 30, 2018 (\$ in thousands):

	Investments measured at NAV	Investments classified in the fair value hierarchy			
		Level 1	Level 2	Level 3	Total
Cash equivalents					
Money market funds	\$ -	\$ 503,288	\$ -	\$ -	\$ 503,288
Certificates of deposit	-	48	-	-	48
Debt securities					
US treasury securities	-	44,611	-	-	44,611
Government agency bonds	-	-	351	-	351
Asset backed securities	-	-	17,652	-	17,652
Commercial mortgage-backed securities	-	-	7,264	-	7,264
Government issued commercial mortgage-backed securities	-	-	122	-	122
Government mortgage-backed securities	-	-	3,772	-	3,772
Non-government backed CMO’s	-	-	1,439	-	1,439
Corporate bonds	-	-	63,209	44	63,253
Municipal and provincial bonds	-	-	2,195	-	2,195
Other fixed income	-	110,652	34,125	-	144,777
Total debt securities	-	155,263	130,129	44	285,436
Equity securities					
Domestic equities	-	120,875	-	1,384	122,259
International equities	-	106,955	-	-	106,955
Total equity securities	-	227,830	-	1,384	229,214
Alternative investments					
Multi-strategy hedge funds					
Equity	69,885	-	-	-	69,885
Long/short	19,971	-	-	-	19,971
Fixed income	34,798	-	-	-	34,798
Absolute return	40,213	-	-	-	40,213
Real assets	11,689	-	-	-	11,689
Private equity	8,652	-	-	-	8,652
Private debt	19,462	-	-	-	19,462
Private real estate	4,762	-	-	-	4,762
Total alternative investments	209,432	-	-	-	209,432
Other securities	-	18,015	-	-	18,015
Total investments	\$209,432	\$904,444	\$130,129	\$1,428	\$1,245,433

The following table presents unfunded commitments, redemption frequency and notice period for investments that have been valued using NAV as a practical expedient as of June 30, 2018 (\$ in thousands):

	NAV	Unfunded commitments	Redemption frequency	Notice period
Alternative investments				
Multi-strategy hedge funds				
Equity	\$ 69,885	\$ -	daily to quarterly	01–60 days
Long/short	19,971	-	quarterly to not eligible	30–95 days
Fixed income	34,798	-	annual to not eligible	60–days
Absolute return	40,213	-	daily to annual	01–65 days
Real assets	11,689	-	annual	90 days
Private equity	8,652	18,573	temporarily illiquid	(1)
Private debt	19,462	12,408	temporarily illiquid	(1)
Private real estate	4,762	4,170	temporarily illiquid	(1)
Total	\$ 209,432	\$ 35,151		

(1) As noted above, the University has made commitments to various private equity, private debt and private real estate partnerships. The University expects these funds to be called over the next 1-5 years. Liquidity is expected to be received in the next 1-9 years.

The following table summarizes the fair value of the University's investments by type as of June 30, 2017 (\$ in thousands):

	Investments measured at NAV	Investments classified in the fair value hierarchy			
		Level 1	Level 2	Level 3	Total
Cash equivalents					
Money market funds	\$ -	\$ 285,380	\$ -	\$ -	\$ 285,380
Certificates of deposit	-	10,500	-	-	10,500
Debt securities					
US treasury securities	-	48,919	-	-	48,919
Government agency bonds	-	-	432	-	432
Asset backed securities	-	-	20,571	-	20,571
Commercial mortgage-backed securities	-	-	5,771	-	5,771
Government issued commercial mortgage-backed securities	-	-	253	-	253
Government mortgage-backed securities	-	-	3,047	-	3,047
Non-government backed CMO's	-	-	885	-	885
Corporate bonds	-	-	63,892	237	64,129
Municipal and provincial bonds	-	-	4,149	-	4,149
Other fixed income	-	147,948	13,407	-	161,355
Total debt securities	-	196,867	112,407	237	309,511
Equity securities					
Domestic equities	-	94,729	-	1,250	95,979
International equities	-	128,458	-	-	128,458
Total equity securities	-	223,187	-	1,250	224,437
Alternative investments					
Multi-strategy hedge funds					
Equity	46,681	-	-	-	46,681
Long/short	12,640	-	-	-	12,640
Fixed income	48,196	-	-	-	48,196
Absolute return	50,623	-	-	-	50,623
Real assets	11,784	-	-	-	11,784
Private equity	3,402	-	-	-	3,402
Private debt	19,221	-	-	-	19,221
Private real estate	3,829	-	-	-	3,829
Total alternative investments	196,376	-	-	-	196,376
Other securities	-	26,359	-	-	26,359
Total Investments	\$ 196,376	\$ 742,293	\$ 112,407	\$ 1,487	\$ 1,052,563

The following table presents unfunded commitments, redemption frequency and notice period for investments that have been valued using NAV as a practical expedient as of June 30, 2017 (\$ in thousands):

	Fair value	Unfunded commitments	Redemption frequency	Notice period
Alternative investments				
Multi-strategy hedge funds				
Equity	\$ 46,681	\$ -	quarterly to not eligible	45–60 days
Long/short	12,640	-	quarterly to annual	30–95 days
Fixed income	48,196	-	quarterly to not eligible	30–60 days
Absolute return	50,623	-	quarterly to not eligible	01–65 days
Real assets	11,784	-	annual	150 days
Private equity	3,402	18,089	temporarily illiquid	(1)
Private debt	19,221	15,847	temporarily illiquid	(1)
Private real estate	3,829	5,060	temporarily illiquid	(1)
Total	\$ 196,376	\$ 38,996		

(1) As noted above, the University has made commitments to various private equity, private debt and private real estate partnerships. The University expects these funds to be called over the next 1-5 years. Liquidity is expected to be received in the next 1-9 years.

5. Accounts Receivable, Net

Accounts receivable as of June 30, 2018 and 2017 are as follows (\$ in thousands):

	2018	2017
Student tuition and fees	\$ 60,454	\$ 58,065
Student loans	62,462	63,660
Pledges receivable	25,199	20,437
Grants and contracts	94,235	94,583
Commonwealth Medicine	64,690	76,093
UMass Memorial	42,157	33,818
Other receivables	55,983	60,304
	405,180	406,960
Less: allowance for doubtful accounts and discount to present value for pledges	(30,558)	(28,764)
Accounts receivable, net	\$ 374,622	\$ 378,196

The receivable from UMass Memorial, which is uncollateralized, represents a potential concentration of credit risk for the University. The receivable from UMass Memorial represents 11.3% and 8.9% of total accounts receivable for the University at June 30, 2018 and 2017, respectively.

6. UMass Memorial Medical Center

The University has granted UMass Memorial Medical Center (UMass Memorial) the right to occupy portions of the University's Medical School campus facilities for a period of 99 years. As part of the ongoing agreement, UMass Memorial has agreed to share responsibility for various capital and operating expenses relating to the occupied premises. UMass Memorial also contributes to capital improvements to shared facilities.

In addition, UMass Memorial has agreed to make certain payments to the University, including an annual fee of \$12.0 million, adjusted for inflation as necessary, for 99 years as long as the University continues to operate a medical school, and a participation payment based on a percentage of the net operating income of UMass Memorial. The University recognizes revenue when the participation payments are received.

The University is reimbursed by, and reimburses UMass Memorial for shared services, cross-funded employees, and other agreed upon activities provided and purchased. For the years ended June 30, 2018 and 2017, the reimbursements for services provided to

UMass Memorial were \$140.5 million and \$147.7 million, respectively. Included in these amounts are payroll paid by the University on behalf of UMass Memorial in an agency capacity in the amount of \$85.5 million and \$89.2 million for the years ended June 30, 2018 and 2017, respectively. As of June 30, 2018 and 2017, the University has recorded a receivable in the amount of \$42.2 million and \$33.8 million, respectively from UMass Memorial which includes \$29.6 million and \$22.0 million, respectively, in payroll and related fringe charges. The University has recorded a payable of \$4.5 million and \$4.4 million at June 30, 2018 and 2017, respectively, primarily for cross-funded payroll.

7. Capital Assets

The following table represents the University's capital assets activity for the years ended June 30, 2018 and 2017 (\$ in thousands):

	2016	Additions	Retirements/ Adjustments	2017	Additions	Retirements/ Adjustments	2018
Land	\$ 84,161	\$ 14,394	\$ (895)	\$ 97,660	\$ 68,771	\$ (1,063)	\$ 165,368
Buildings and improvements	5,611,906	456,132	(12,432)	6,055,606	444,250	(991)	6,498,865
Software	136,503	4,272	(29,737)	111,038	10,224	(8,078)	113,184
Equipment and furniture	651,947	79,975	(46,856)	685,066	52,453	(37,626)	699,893
Library books	65,978	-	(5,834)	60,144	-	(6,570)	53,574
	6,550,495	554,773	(95,754)	7,009,514	575,698	(54,328)	7,530,884
Accumulated depreciation	(2,690,595)	(245,300)	82,907	(2,852,988)	(261,417)	37,509	(3,076,896)
	3,859,900	309,473	(12,847)	4,156,526	314,281	(16,819)	4,453,988
Construction in progress	674,705	478,566	(455,687)	697,584	407,191	(483,287)	621,488
Total capital assets	\$4,534,605	\$788,039	\$(468,534)	\$4,854,110	\$721,472	\$(500,106)	\$5,075,476

The University purchased the capital assets of Mount Ida College in May 2018 for \$75.0 million. The assets have been allocated between land and construction in progress at June 30, 2018.

The University has capitalized interest on borrowings, net of interest earned on related debt reserve funds, during the construction period of major capital projects. Capitalized interest is added to the cost of the underlying assets being constructed, and is amortized over the useful lives of the assets. For the years ended June 30, 2018 and 2017, the University capitalized net interest costs of \$11.6 million and \$20.5 million, respectively.

8. Leases

The University leases certain equipment and facilities under operating leases with terms exceeding one year, which are cancelable at the University's option with 30 day notice. The rent expense related to these operating leases amounted to \$20.6 million and \$24.6 million for the years ended June 30, 2018 and 2017, respectively. The leases primarily relate to telecommunications, software, and co-generation systems. The University also leases space to third party tenants. During the years ended June 30, 2018 and 2017, the amount reported as rental income was \$20.5 million and \$18.9 million, respectively.

The following presents a schedule of future minimum payments under non-cancelable leases for the next five years and in subsequent five-year periods for the University as of June 30, 2018 (\$ in thousands):

Fiscal year end	Operating lease payments
2019	\$ 25,471
2020	23,879
2021	21,805
2022	18,931
2023	15,059
2024 and thereafter	131,687
Total payments	\$ 236,832

9. Long-Term Debt

The following table represents the outstanding long-term debt as of June 30, 2018, and the related activity during the fiscal year (\$ in thousands):

	Original borrowing	Maturity date	Interest rate	As of July 1, 2017	Additions	Reductions	As of June 30, 2018
Building Authority							
Series 2008-A	\$ 26,580	2038	variable	\$ 19,145	\$ -	\$ (995)	\$ 18,150
Series 2008-1	232,545	2038	variable	171,430	-	(8,315)	163,115
Series 2008-2	120,560	2038	4.0–5.0%	3,065	-	(3,065)	-
Series 2009-1	247,810	2039	3.0–5.0%	28,400	-	(13,115)	15,285
Series 2009-2	271,855	2039	6.4–6.6%	271,855	-	-	271,855
Series 2009-3	28,570	2039	5.8–6.2%	25,685	-	(585)	25,100
Series 2010-1	118,985	2020	5.0%	59,230	-	(13,745)	45,485
Series 2010-2	430,320	2040	3.8–5.5%	430,320	-	-	430,320
Series 2010-3	3,005	2040	5.8%	2,730	-	(55)	2,675
Series 2011-1	135,040	2034	variable	126,540	-	(1,550)	124,990
Series 2011-2	101,700	2034	variable	96,115	-	(1,060)	95,055
Series 2013-1	212,585	2043	2.0–5.0%	198,655	-	(4,910)	193,745
Series 2013-2	71,970	2043	0.4–2.7%	65,090	-	(2,265)	62,825
Series 2013-3	24,640	2043	4.0–5.0%	24,640	-	-	24,640
Series 2014-1	293,890	2044	3.0–5.0%	293,015	-	(525)	292,490
Series 2014-2	14,085	2019	0.4–2.1%	8,555	-	(2,805)	5,750
Series 2014-4	157,855	2025	0.2–3.4%	122,125	-	(30,030)	92,095
Series 2014-3	67,635	2029	2.0–5.0%	61,640	-	(3,480)	58,160
Series 2015-1	298,795	2036	4.0–5.0%	298,795	-	-	298,795
Series 2015-2	191,825	2036	3.0–5.0%	191,825	-	(2,825)	189,000
Series 2017-1	165,130	2047	3.3–3.8%	165,130	-	-	165,130
Series 2017-2	19,510	2027	1.6–3.4%	19,510	-	-	19,510
Series 2017-3	35,945	2038	3.0–5.0%	187,680	-	(2,920)	184,760
Series 2018-1	75,000	2043	2.0–2.9%	-	37,650	-	37,650
Unamortized bond premium				164,887	-	(14,188)	150,699
				3,036,062	37,650	(106,433)	2,967,279
HEFA/MDFA							
Series A	20,000	2030	variable	20,000	-	-	20,000
Series 2011	29,970	2034	2.5–4.0%	25,925	-	(1,045)	24,880
Unamortized bond premium				870	-	(53)	817
				46,795	-	(1,098)	45,697
WCCC HEFA/MDFA							
Series 2005-D	99,325	2029	5.0–5.3%	715	-	(100)	615
Series 2011	10,495	2023	2.0–5.0%	6,690	-	(830)	5,860
Unamortized bond premium				624	-	(98)	526
				8,029	-	(1,028)	7,001
MDFA							
Clean renewable Energy bonds	1,625	2027	3.50%	956	-	(96)	860
Total bonds payable				3,091,842	37,650	(108,655)	3,020,837
Notes and commercial paper				1,917	64,535	(483)	65,969
Capital lease obligations				592	3,195	(1,525)	2,262
Total long-term debt				\$ 3,094,351	\$ 105,380	\$ (110,663)	\$ 3,089,068

The following table represents the outstanding long-term debt as of June 30, 2017, and the related activity during the fiscal year (\$ in thousands):

	As of July 1, 2016	Additions	Reductions	As of June 30, 2017
Building Authority				
Series 2004-1	\$ 1,515	\$ -	\$ (1,515)	\$ -
Series 2008-A	20,105	-	(960)	19,145
Series 2008-1	179,425	-	(7,995)	171,430
Series 2008-2	63,025	-	(59,960)	3,065
Series 2009-1	108,365	-	(79,965)	28,400
Series 2009-2	271,855	-	-	271,855
Series 2009-3	26,235	-	(550)	25,685
Series 2010-1	72,310	-	(13,080)	59,230
Series 2010-2	430,320	-	-	430,320
Series 2010-3	2,785	-	(55)	2,730
Series 2011-1	128,245	-	(1,705)	126,540
Series 2011-2	97,265	-	(1,150)	96,115
Series 2013-1	203,420	-	(4,765)	198,655
Series 2013-2	67,335	-	(2,245)	65,090
Series 2013-3	24,640	-	-	24,640
Series 2014-1	293,465	-	(450)	293,015
Series 2014-2	11,330	-	(2,775)	8,555
Series 2014-4	149,975	-	(27,850)	122,125
Series 2014-3	64,470	-	(2,830)	61,640
Series 2015-1	298,795	-	-	298,795
Series 2015-2	191,825	-	-	191,825
Series 2017-1	-	165,130	-	165,130
Series 2017-2	-	19,510	-	19,510
Series 2017-3	-	187,680	-	187,680
Unamortized bond premium	122,146	55,987	(13,246)	164,887
	2,828,851	428,307	(221,096)	3,036,062
HEFA/MDFA				
2000 Series A	20,000	-	-	20,000
2007 Series D	8,645	-	(8,645)	-
Series 2011	26,940	-	(1,015)	25,925
Unamortized bond premium	949	-	(79)	870
	56,534	-	(9,739)	46,795
WCCC HEFA/MDFA				
Series 2005-D	1,335	-	(620)	715
Series 2007-E	31,250	-	(31,250)	-
Series 2007-F	51,890	-	(51,890)	-
Series 2011	7,495	-	(805)	6,690
Unamortized bond premium	1,215	-	(591)	624
	93,185	-	(85,156)	8,029
MDFA				
Clean renewable energy bonds	1,052	-	(96)	956
Total bonds payable	2,979,622	428,307	(316,087)	3,091,842
Notes and commercial paper	2,433	-	(516)	1,917
Capital lease obligations	598	161	(167)	592
Total long-term debt	\$2,982,653	\$ 428,468	\$ (316,770)	\$ 3,094,351

Principal and interest, which is estimated using rates in effect at June 30, 2018, on long-term debt for the next five fiscal years and in subsequent five-year periods are as follows (\$ in thousands):

Fiscal Year	Principal	Interest
2019	\$ 100,270	\$ 118,528
2020	103,930	115,106
2021	107,866	111,092
2022	100,356	107,078
2023	104,641	103,170
2024–2028	530,997	456,206
2029–2033	503,675	350,345
2034–2038	531,100	245,546
2039–2043	541,515	113,966
2044–2048	244,445	19,763
Total	\$ 2,868,795	\$ 1,740,800

In accordance with GASB 1, the University classifies variable rate bonds subject to remarketing as current, unless supported by liquidity arrangements such as lines of credit or standby bond purchase agreements, which could refinance the debt on a long-term basis. In the event that variable rate bonds are put back to the University by the debt holder, management believes that the University's strong credit rating will ensure that the bonds will be remarketed within a reasonable period of time. As a result, the University's variable rate bonds are listed in the table above at their original maturities.

Bond Premium and Issuance Expenses – During the year ended June 30, 2017, premiums received totaled \$56.0 million. The University amortizes premiums received as a reduction of interest expense over the life of the respective bond issue. There were no new premiums received during the year ended June 30, 2018.

The University incurs certain costs associated with bond issuances. For the years ended June 30, 2018 and 2017, bond issuance costs amounted to \$0.2 million and \$2.3 million, respectively, and were expensed in accordance with the provisions of GASB Statement No. 65, *Items Previously Reported as Assets and Liabilities*.

Commercial Paper – The maximum aggregate principal amount of commercial paper the Building Authority may have outstanding at one time is \$200.0 million. The Building Authority currently has standby liquidity facility agreements with State Street Bank and Trust Company for \$125.0 million and with U.S. Bank National Association for \$75.0 million. Each agreement expires on August 12, 2019. During the fiscal year 2018, the Building Authority issued \$64.5 million of commercial paper and has an outstanding balance of \$64.5 million as of June 30, 2018. The Building Authority incurred total fees of \$0.7 million and \$0.8 million for the years ending June 30, 2018 and 2017, respectively, associated with the use of commercial paper.

Bond Refundings – During the year ended June 30, 2017, the Building Authority issued \$187.7 million of Refunding Revenue Senior Series 2017-3 Bonds which advance refunded \$77.3 million of the WCCC bonds series, \$57.0 million of the Building Authority's 2008-2 bonds and \$65.0 million of the Building Authority's 2009-1 bonds. The Building Authority deposited into trust accounts funds sufficient to provide for all future debt service payments on the refunded bonds until the bonds are called. These advanced refunded bonds are considered defeased and, accordingly, the liability for the bonds and the assets held to repay the debt are not recorded in the Building Authority's financial statements.

In connection with the Building Authority's refundings, the Building Authority recorded a difference between the reacquisition price and the net carrying amount of the refunded debt of \$5.8 million. This balance is being reported as a component of deferred outflows and will be amortized as an increase in interest expense over the remaining term of the original life of the refunded bonds. These refundings reduced the Building Authority's debt service payments in future years by \$30.2 million and resulted in present value savings of \$21.4 million as an economic gain.

During fiscal year ended June 30, 2017, the University refunded \$10.4 million of MHEFA Revenue Bonds, University of Massachusetts Issue Series D. The proceeds from this issuance were used to advance refund a portion of the MHEFA Revenue Bonds, University of Massachusetts Issue, 2001 Series B (the Series B Bonds). These advance refunded bonds were defeased, and accordingly, the liability for the bonds and the assets held to repay the debt have not been included in the University's financial statements.

There was no refunding of bonds in the year ended June 30, 2018.

Interest Rate Swaps – The Building Authority uses derivative instruments to manage the impact of interest rate changes on its cash flows and net position by mitigating its exposure to certain market risks associated with operations, and does not use derivative instruments for trading or speculative purposes.

All interest rate swaps held by the Building Authority are cash flow hedges and considered to be synthetic fixed. The Building Authority's interest rate swaps at June 30, 2018 and 2017 are as follows (\$ in thousands):

	Notional Value	As of July 1, 2017	Net Change	As of June 30, 2018	Effective Date	Term Date	Authority Pays	Authority Receives
Series 2008-1	\$232,545	\$25,267	\$ (8,690)	\$ 16,577	05/01/08	05/01/38	3.4%	70% of 1-Month LIBOR
Series 2008-A	26,580	2,884	(953)	1,931	11/13/08	05/01/38	3.4%	70% of 1-Month LIBOR
Series 2006-1	243,830	33,688	(10,594)	23,094	04/20/06	11/01/34	3.5%	60% of 3-Month LIBOR + .18%
Total		\$61,839	\$(20,237)	\$41,602				

Swap payments and associated debt – Using rates as of June 30, 2018, the debt service requirements of the variable-rate debt and net swap payments, assuming current interest rates remain the same for their term, were as follows (\$ in thousands):

Fiscal Year Ending June 30	Principal	Interest	Interest rate swaps, net	Total
2019	\$ 12,215	\$ 6,073	\$ 7,645	\$ 25,933
2020	12,720	5,885	7,409	26,014
2021	28,390	5,576	7,020	40,986
2022	29,545	5,140	6,471	41,156
2023	33,915	4,663	5,869	44,447
2024–2028	155,640	16,102	20,259	192,001
2029–2033	112,390	5,579	7,011	124,980
2034–2038	16,495	373	469	17,337
Total	\$401,310	\$49,391	\$62,153	\$512,854

	2018	2017
Change in fair value of interest rate swap	\$ 18,887	\$ 37,768
Loss on debt refundings	74,443	79,771

For the years ended June 30, 2018 and 2017, the amortization of the loss on debt refundings totaled \$5.3 million and \$6.8, respectively, which increases interest expenses.

10. Other Liabilities

During the years ended June 30, 2018 and 2017, the following changes occurred in other liabilities as recorded in the statements of net position (\$ in thousands):

	2016	Additions	Reductions	2017	Additions	Reductions	2018
Compensated absences	\$ 35,671	\$ -	\$ (5,276)	\$30,395	\$ 3,410	\$ (2,249)	\$ 31,556
Workers' compensation	12,160	-	(214)	11,946	233	(635)	11,544
Unearned revenues	23,936	24,257	(15,596)	32,597	73,697	(13,154)	93,140
Advances and deposits	27,705	799	(399)	28,105	490	(745)	27,850
Other liabilities	105,354	800	(25,349)	80,805	-	(6,210)	74,595

During the fiscal year 2018, the University received approximately \$87.0 million from the sale of its royalty revenue stream related to a licensed product. This transaction resulted in an increase to current and non-current liabilities.

11. Fringe Benefits

During the years ended June 30, 2018 and 2017, the Commonwealth paid \$358.1 million and \$329.3 million, respectively, for the University's portion of fringe benefit costs which includes pension expense, health insurance for active employees and retirees, and terminal leave. Of this amount, the University reimbursed the Commonwealth \$134.1 million and \$123.8 million during the years ended June 30, 2018 and 2017, respectively. The remaining portion is included in revenue as state appropriations.

12. Pensions

The Massachusetts State Employees' Retirement System (MSERS) is a public employee retirement system (PERS) that administers a cost-sharing multi-employer defined benefit plan as defined by GASB Statement No. 67, *Financial Reporting for Pension Plans*, covering substantially all employees of the Commonwealth including University employees.

MSERS provides retirement, disability, survivor and death benefits to members and their beneficiaries. Massachusetts General Laws (MGL) establishes uniform benefit and contribution requirements for all contributory PERS. These requirements provide for superannuation retirement allowance benefits up to a maximum of 80% of a member's highest three-year average annual rate of regular compensation. For employees hired after April 1, 2012, retirement allowances are calculated on the basis of the last five years or any five consecutive years, whichever is greater in terms of compensation. Benefit payments are based upon a member's age, length of creditable service, and group creditable service, and group classification. The authority for amending these provisions rests with the Legislature.

The MSERS' funding policies have been established by Chapter 32 of MGL. The Legislature has the authority to amend these policies. The annuity portion of the MSERS retirement allowance is funded by employees, who contribute a percentage of their regular compensation. Costs of administering the plan are funded out of plan assets.

Member contributions for MSERS vary depending on the most recent date of membership:

Hire Date	% of Compensation
Prior to 1975	5% of regular compensation
1975 – 1983	7% of regular compensation
1984 – 6/30/1996	8% of regular compensation
7/1/1996 – present	9% of regular compensation except for State Police which is 12% of regular compensation
1979 – present	An additional 2% of regular compensation in excess of \$30,000

In addition, members within this group who join the system on or after April 2, 2012 will have their withholding rate reduced to 6% after achieving 30 years of creditable service.

The University makes contributions on behalf of the employees through a fringe benefit charge assessed by the Commonwealth. The fringe benefit charge amounted to \$107.4 million and \$89.9 million for the years ended June 30, 2018 and 2017, respectively. Annual covered payroll was 75.9% and 75.8% of annual total payroll for the University for the years ended June 30, 2018 and 2017, respectively. Pension expense of \$33.3 million and \$26.3 million was included in the fringe charge for the years ended June 30, 2018 and 2017, respectively.

As allowable under the terms of GASB 68, the University has elected to measure the net pension liability one year prior to the fiscal year end reporting date. The net pension liability as of June 30, 2018 was determined based on a measurement date of June 30, 2017 from an actuarial valuation as of January 1, 2017 rolled forward to June 30, 2017. The net pension liability measured as of June 30, 2017 was determined based on a measurement date of June 30, 2016 from an actuarial valuation as of January 1, 2016 rolled forward to June 30, 2016. There are no significant changes known which would impact the total pension liability between the measurement date and the reporting date, other than typical plan experience.

Actuarial Assumptions – Significant actuarial assumptions used at each respective measurement date are as follows:

	June 30, 2017	June 30, 2016
Investment rate of return	7.50%	7.50%
Interest rate credited to the annuity savings fund	3.50%	3.50%
Cost of living increases on the first \$13,000 per year	3.00%	3.00%
Salary increases*	4.0% to 9.0%	4.0% to 9.0%
Mortality rates		
Pre-retirement	RP-2014 Blue Collar Employees Scale MP-2016	RP-2000 Employees Scale BB base year 2015
Post-retirement	RP-2014 Blue Collar Healthy Annuitant Scale MP-2016	RP-2000 Healthy Annuitant Scale BB base year 2015
Disability	RP-2000 Healthy Annuitant Scale BB base year 2015	RP-2000 Healthy Annuitant Scale BB base year 2015

*Salary increases were based on analysis of past experiences depending on group and length of service

Chapter 176 of the Acts of 2011 created a one-time election for eligible members of the Optional Retirement Plan (ORP) to transfer to the State Employees' Retirement System (SERS) and purchase service for the period while members of the ORP.

For these actuarial valuations, experience studies were performed on February 27, 2014 and encompass the period January 1, 2006 to December 31, 2011.

Investment Allocation – Investment assets of MSERS are with the Pension Reserves Investment Trust (PRIT) Fund. The long-term expected rate of return on pension plan investments was determined using a building-block method in which best-estimate ranges of expected future rates of return are developed for each major asset class. These ranges are combined to produce the long-term expected rate of return by weighting the expected future rates of return by the target asset allocation percentage.

Best estimates of geometric rates of return for each major asset class included in the PRIT Fund's target asset allocation as of June 30, 2017 and 2016 are summarized in the following table:

Asset Class	June 30, 2017		June 30, 2016	
	Target Allocation	Long-term Expected Real Rate of Return	Target Allocation	Long-term Expected Real Rate of Return
Core Fixed Income	12.00%	1.10%	13.00%	1.60%
Global Equity	40.00%	5.00%	40.00%	6.90%
Hedge Funds	0.00%	3.60%	9.00%	4.00%
Portfolio Completion Strategies	13.00%	3.60%	4.00%	3.60%
Private Equity	11.00%	6.60%	10.00%	8.70%
Real Estate	10.00%	3.60%	10.00%	4.60%
Timber / Natural Resources	4.00%	3.20%	4.00%	5.40%
Value Added Fixed Income	10.00%	3.80%	10.00%	4.80%
Total	100.00%		100.00%	

Discount Rate – The discount rate used to measure the total pension liability was 7.50% at June 30, 2017 and 2016. The projection of cash flows used to determine the discount rate assumed that plan member contributions will be made at the current contribution rates and the Commonwealth's contributions will be made at rates equal to the difference between actuarially determined contribution rates and the member rates. Based on those assumptions, the net position was projected to be available to make all projected future benefit payments of current plan members. Therefore, the long-term expected rate of return on pension plan investments was applied to all periods of projected benefit payments to determine the total pension liability.

Sensitivity Analysis – The following illustrates the impact a 1% change in the discount rate for the net pension liability at June 30, 2018 (\$ in thousands):

Fiscal Year Ended	1% Decrease	Current Discount Rate 7.5%	1% Increase
June 30, 2018	\$621,615	\$420,234	\$323,338

Pension Liabilities, Pension Expense, and Deferred Outflows of Resources and Deferred Inflows of Resources

Related to Pensions – At June 30, 2018 and 2017, the University reported a liability of \$420.2 million and \$429.9 million, respectively, for its proportionate share of MSERS's net pension liability, respectively. The University's proportion of the net pension liability was based on a projection of the University's long-term share of contributions to the pension plan relative to the total projected contributions of all participating entities, actuarially determined.

The following table shows the components of pension expense for the years ended June 30, 2018 and 2017 (\$ in thousands):

	2018	2017
Proportionate share of plan pension expense	\$ 52,383	\$ 58,723
Net amortization of deferred amounts from change in proportion	6,085	2,935
Employer contributions after measurement date	(28,292)	(25,618)
Pension expense	\$30,176	\$36,040

The University reported its proportionate share of MSERS's deferred outflows of resources and deferred inflows of resources related to pensions from the following sources as of June 30, 2018 and 2017 (\$ in thousands):

	2018		2017	
	Deferred Inflows of Resources	Deferred Outflows of Resources	Deferred Inflows of Resources	Deferred Outflows of Resources
Changes of assumptions	\$ -	\$ 43,732	\$ -	\$ 47,670
Changes in proportion due to internal allocation	28,949	36,532	37,464	34,668
Employer contributions after measurement date	-	28,292	-	25,618
Differences between expected and actual experience	11,434	16,248	-	20,418
Net difference between projected and actual investment earnings on pension plan investments	5,007	-	-	28,853
Changes in proportion from Commonwealth	150	1,440	207	958
Total	\$45,540	\$126,244	\$37,671	\$158,185

The net amounts of the University's balances of deferred outflows and inflows of resources related to pensions will be recognized in pension expense as follows:

Year Ended June 30	
2019	\$ 16,098
2020	29,325
2021	13,310
2022	(7,018)
2023	697
Thereafter	-
Total	\$ 52,412

Non-vested faculty and certain other employees of the University can opt out of MSERS and participate in a defined contribution plan, the ORP, administered by the Commonwealth's Department of Higher Education. As of June 30, 2018 and 2017, there were 1,687 and 1,674 University employees, respectively, participating in ORP. Employees contribute at the same rate as members in SERS and the Commonwealth matches 5% of employee contributions. The Commonwealth contributed \$8.4 million and \$7.2 million in 2018 and 2017, respectively. University employees contributed \$17.4 million and \$15.8 million in 2018 and 2017, respectively.

The MSERS and ORP retirement contributions of employees who become members of MSERS or ORP after January 1, 2011 are subject to a state compensation limit. Effective January 1, 2011, the University established a defined contribution plan, the University of Massachusetts 401(a) Retirement Gap Plan (Gap Plan). Employees with MSERS or ORP membership dates after January 1, 2011 are eligible to participate in for the Gap Plan. Eligible employees begin participation in the Gap Plan when their regular compensation exceeds the state compensation limit in effect for the plan year, at which point their contributions to MSERS or ORP are required to stop for the remainder of the plan year. Employee contributions to the Gap Plan are mandatory and at the same rate as MSERS and ORP; the University contributes 5%. As of June 30, 2018 and 2017, the plan assets were \$3.4 million and \$2.5 million, respectively.

13. Other Postemployment Benefits

The Commonwealth administers a single employer defined Postemployment Benefits Other Than Pensions (OPEB) Plan (the Plan). Benefits are managed by the Group Insurance Commission (GIC) and investments are managed by the Pension Reserves Investment Management Board (PRIM).

Benefits provided – Under Chapter 32A of the Massachusetts General Laws (MGL) the Commonwealth is required to provide certain health care and life insurance benefits for retired employees of the Commonwealth. Substantially all of the Commonwealth’s employees may become eligible for these benefits if they reach retirement age while working for the Commonwealth. Eligible retirees are required to contribute a specified percentage of the health care/benefit costs, which are comparable to contributions required from employees.

Employer and employee contribution rates are set in MGL. The Commonwealth recognizes its share of the costs on an actuarial basis. As of June 30, 2017, retirees contribute between 0% - 20% of premium costs, depending on the date of hire.

As allowable under the terms of GASB 75, the University has elected to measure the total postemployment liability one year prior to the fiscal year end reporting date. The total OPEB liability as of June 30, 2018 was determined based on a measurement date of June 30, 2017 from an actuarial valuation as of January 1, 2017 rolled forward to June 30, 2017. There are no significant changes known which would impact the total postemployment liability between the measurement date and the reporting date, other than typical plan experience.

Actuarial Assumptions – Significant actuarial assumptions used at the 2017 measurement date are as follows:

Annual healthcare cost trend rates		
Medical	8.5% decreasing by 0.5% each year to an ultimate rate of 5.0% in 2024	
Employer group waiver program	5.0%	
Administrative costs	5.0%	
Mortality rates	RP-2014 Blue Collar Employees projected with Scale MP-2016	
Participation rates	100% of all retirees who currently have health care coverage will continue the same coverage, except the following: <ul style="list-style-type: none"> • retirees under the age of 65 with POS/PPO coversate switch to Indemnity at age 65 • retirees over the age of 65 with POS/PPO coverage switched to HMO Current retirees and spouses - Medicare coverage upon attainment of age 65 Future retirees - Medicare coverage upon attainment of age 65 80% of current and future contingent eligible participants will elect health care benefits at 65 or later Actives, upon retirement, take coverage, and are assumed to have the following coverage:	
	Retirement Age	
	Under 65	Over 65
Indemnity	40.0%	85.0%
POS/PPO	50.0%	0.0%
HMO	10.0%	15.0%

Investment Allocation – Investment assets of the Plan are with the Pension Reserves Investment Trust (PRIT) Fund. The long-term expected rate of return on OPEB plan investments was determined using a building-block method in which best-estimate ranges of expected future rates of return are developed for each major asset class.

These ranges are combined to produce the long-term expected rate of return by weighting the expected future rates of return by the target asset allocation percentage.

Best estimates of geometric rates of return for each major asset class included in the PRIT Fund's target asset allocation as of June 30, 2017 and 2016 are summarized in the following table:

Asset Class	Long-term Expected Real Rate of Return		
	Target Allocation	2017	2016
Global equity	40.00%	5.0%	6.9%
Portfolio completion strategies	13.00%	3.6%	3.6%
Core fixed income	12.00%	1.1%	1.6%
Private equity	11.00%	6.6%	8.7%
Value added fixed income	10.00%	3.8%	4.8%
Real estate	10.00%	3.6%	4.6%
Timber/natural resources	4.00%	3.2%	5.4%
Hedge funds	0.00%	3.6%	4.0%
Total	100.00%		

Discount Rate – The discount rates used to measure the OPEB liability as of June 30, 2017 and 2016 were 3.63% and 2.88%, respectively. These rates were based on a blend of the Bond Buyer Index rates of 3.58% and 2.85%, respectively, as of the measurement dates June 30, 2017 and 2016 and the expected rates of return. The plan's fiduciary net position was not projected to be available to make all projected future benefit payments for current plan members. The projected "depletion date" when projected benefits are not covered by projected assets is 2023. Therefore, the long-term expected rate of return on plan investments of 7.50% per annum was not applied to all periods of projected benefit payments to determine the total OPEB liability as of June 30, 2017 and 2016.

Sensitivity Analysis of Discount – The following presents the net OPEB liability of the Commonwealth calculated using the discount rate, as well as what the net OPEB liability would be if it were calculated using a discount rate that is 1- percentage-point lower or 1-percentage-point higher than the current rate (\$ in thousands):

Fiscal Year Ended	1% Decrease	Current Discount	1% Increase
June 30, 2017	\$970,268	\$817,357	\$695,780

Sensitivity Analysis of Healthcare Cost Trend Rate – The following presents the net OPEB liability of the Commonwealth, as well as what the net OPEB liability would be if it were calculated using a healthcare cost trend rate that is 1-percentage-point lower or 1-percentage-point higher than the current healthcare cost trend rate (\$ in thousands):

Fiscal Year Ended	1% Decrease	Current Rate	1% Increase
June 30, 2017	\$676,259	\$817,357	\$1,003,033

OPEB Liabilities, OPEB Expense, and Deferred Outflows of Resources and Deferred Inflows of Resources Related to OPEB – In connection with the adoption of GASB 75, the University recorded \$817.4 million as the proportionate share of the OPEB liability as of June 30, 2018 and the cumulative effect of the prior year's beginning balances of \$743.0 million. The University's proportion of the net OPEB liability was based on a projection of the University's long-term share of contributions to the OPEB relative to the total projected contributions of all participating entities, actuarially determined.

The following table shows the components of OPEB expense for the year ended June 30, 2018 (\$ in thousands):

	2018
Proportionate share of plan OPEB expense	\$ 47,783
Net amortization of deferred amounts from change in proportion	357
Net amortization of deferred amounts from internal allocation change in proportion	20,591
Employer specific OPEB expenses	1,249
Employer contributions after measurement date	(21,421)
OPEB expense	\$48,559

The University reported its proportionate share of deferred outflows of resources and deferred inflows of resources related to OPEB from the following sources as of June 30, 2018 (\$ in thousands):

	Deferred Inflows of Resources	Deferred Outflows of Resources
Changes of assumptions	\$ 92,574	\$ -
Changes in proportion due to internal allocation	-	98,629
Employer contributions after measurement date	-	21,421
Differences between expected and actual experience	1,880	-
Net difference between projected and actual investment earnings on OPEB plan investments	1,491	-
Changes in proportion from Commonwealth	-	1,711
Total	\$ 95,945	\$ 121,761

The difference between the University's balances of deferred outflows and inflows of resources related to OPEB will be recognized in OPEB expense as follows:

Year Ended June 30	
2019	\$ (24)
2020	(24)
2021	(24)
2022	(24)
2023	4,491
Total	\$ 4,395

14. Operating Expenses

The following table summarizes the University's operating expenses by natural and functional classification for the year ended June 30, 2018 (\$ in thousands):

	Compensation and benefits	Supplies and services	Scholarships and fellowships	Depreciation and amortization	Interest	Total
Educational and general						
Instruction	\$ 761,546	\$ 114,689	\$ -	\$ -	\$ -	\$ 876,235
Research	282,123	189,012	-	-	-	471,135
Public service	63,995	14,243	-	-	-	78,238
Academic support	134,392	53,103	-	-	-	187,495
Student services	119,601	37,333	-	-	-	156,934
Institutional support	241,374	30,161	-	-	-	271,535
Operation and maintenance of plant	126,923	128,902	-	-	-	255,825
Depreciation and amortization	-	-	-	261,417	-	261,417
Scholarships and fellowships	-	-	50,410	-	-	50,410
Auxiliary enterprises	146,623	167,118	-	-	-	313,741
Other expenditures						
Independent operations	24,854	27,357	-	-	-	52,211
Public service activities	83,260	241,956	-	-	-	325,216
Total operating expenses	1,984,691	1,003,874	50,410	261,417	-	3,300,392
Interest on indebtedness	-	-	-	-	115,851	115,851
Total operating expenses and interest	\$1,984,691	\$1,003,874	\$50,410	\$261,417	\$115,851	3,416,243

The following table summarizes the University's operating expenses by natural and functional classification for the year ended June 30, 2017 (\$ in thousands):

	Compensation and benefits	Supplies and services	Scholarships and fellowships	Depreciation and amortization	Interest	Total
Educational and general						
Instruction	\$ 716,135	\$ 107,907	\$ -	\$ -	\$ -	\$ 824,042
Research	273,638	173,732	-	-	-	447,370
Public service	58,381	9,702	-	-	-	68,083
Academic support	124,239	52,934	-	-	-	177,173
Student services	112,183	38,850	-	-	-	151,033
Institutional support	231,935	15,805	-	-	-	247,740
Operation and maintenance of plant	118,304	122,197	-	-	-	240,501
Depreciation and amortization	-	-	-	245,300	-	245,300
Scholarships and fellowships	-	-	47,710	-	-	47,710
Auxiliary enterprises	142,438	164,412	-	-	-	306,850
Other expenditures						
Independent operations	23,854	33,422	-	-	-	57,276
Public service activities	88,452	257,423	-	-	-	345,875
Total operating expenses	1,889,559	976,384	47,710	245,300	-	3,158,953
Interest on indebtedness	-	-	-	-	110,069	110,069
Total operating expenses and interest	\$1,889,559	\$976,384	\$47,710	\$245,300	\$110,069	\$3,269,022

15. Unrestricted Net Position

The University adopted a reserve policy and standards in 2018. According to the policy, unrestricted net position is designated for certain purposes. Below are the designations used by the University, as described in the University's policy:

- **Unexpended plant and facilities** – funds designated for capital projects, equipment and the major renovations of all existing buildings including research, education and general, and auxiliary.
- **Auxiliary enterprises** – funds related to self-supporting activities which provide non-instructional support in the form of goods and services to students, faculty, and staff upon payment of a specific user charge or fee.
- **Education and general** – funds designated for operational requirements, academic initiatives, research, faculty recruitment, and University initiatives.
- **Quasi-endowment** – funds related to unrestricted resources invested in the Foundation's pooled endowment fund, intended to be invested for the long-term unless otherwise approved by the Board of Trustees or a designated authority.
- **Stabilization** – funds designated to provide budgetary stabilization for operations due to unforeseen and/or uncontrollable circumstances to ensure responsible long-term financial stability.
- **Other unrestricted** – funds undesignated for a specific use or purpose.

The following table summarizes the University's unrestricted net position as of June 30, 2018 (\$ in thousands):

	2018
Unrestricted resources	
Unexpended plant and facilities	\$ 267,319
Auxiliary enterprises	91,539
Education and general	244,472
Quasi-endowment	280,517
Stabilization	109,168
Other unrestricted	(12,024)
Subtotal	980,991
Unfunded portion of pension liabilities	(339,530)
Unfunded portion of postretirement benefits other than pension liabilities	(791,541)
Total unrestricted net position	\$(150,080)

16. Commitments and Contingencies

The Building Authority, University, and WCCC have outstanding purchase commitments under construction contracts and real estate agreements of \$120.7 million and \$283.6 million at June 30, 2018 and 2017, respectively. In connection with investments in certain limited partnership agreements, the University has \$35.2 million and \$39.0 million in committed calls as of June 30, 2018 and 2017, respectively, which are scheduled to be funded over a number of years. The University has entered an Energy Performance Contract that is being managed by the Commonwealth's Division of Capital Asset Management (DCAM) under its Clean Energy Investment Program. This project includes 32 energy conservation measures. The installation costs will be incurred over 2 phases with Phase 1 being \$18.0 million and Phase 2 being \$13.5 million. The term of these transactions is 20 years. The University has a commitment to the Commonwealth for Clean Energy Investment Program Funds used through June 30, 2018 and 2017 of \$26.1 million and \$27.1 million, respectively.

The University, as an agency of the Commonwealth, is self-insured for property loss exposure, subject to appropriation from the state legislature. However, properties owned by the Building Authority located on a campus of the University, such as the Mullins Center, dining commons, and most dormitories, are insured by the Building Authority. The University and its employees are protected against tort claims through sovereign immunity under Chapter 258 of the Massachusetts General Laws. The University maintains certain liability insurance policies, including commercial general liability, leased automotive liability, directors and officers and comprehensive crime policies. Employees of the University are covered for Worker's Compensation protection under Chapter 152 of the Massachusetts General Laws. The University has recorded a liability for future expected costs of its workers' compensation claims of \$14.7 million and \$14.6 million as of June 30, 2018 and 2017, respectively. Estimated future payments related to such costs have been discounted at a rate of 4.0%.

The University is a defendant in various lawsuits and is subject to various contractual matters; however, University management is of the opinion that the ultimate outcome of all litigation or potential contractual obligations will not have a material effect on the financial position, financial results or cash flows of the University.

17. Subsequent Events

Subsequent to year-end, the University issued \$38.4 million of Series 2013-A commercial paper to be used for funding of approved capital projects at the Lowell, Amherst and Dartmouth campuses. The commercial paper is expected to be repaid with proceeds from the University's next long-term bond financing.

On November 14, 2018, the University entered into an agreement whereby the University sub-leased property on the University of Massachusetts Dartmouth campus to Provident Commonwealth Educational Resources II Inc., a Massachusetts not-for-profit corporation. The land is leased to the University by the Commonwealth. Provident Commonwealth Educational Resources II Inc. will engage a contractor to construct a 1,210-bed student housing facility on the site. The University will sub-lease the property to Provident Commonwealth Educational Resources II Inc. for a term of approximately 45 years. Commencing with the first lease year of the lease following the completion of the project (estimated completion is August 2020), the annual rental amount payable to the University under the ground lease will be \$0.6 million.

Pursuant to the Dining Facility Sublease dated November 14, 2018 between Provident Commonwealth Educational Resources II Inc., as sub-lessor and the University, as sub-lessee, the Provident Commonwealth Educational Resources II Inc. shall lease the dining facility, located within the residential hall, to the Campus and shall operate the Dining Facility or cause it to be operated.

For purposes of determining the effects of subsequent events on these financial statements, management has evaluated events subsequent to June 30, 2018 and through January 8, 2019, the date on which the financial statements were available to be issued and, determined that there were no matters requiring recognition or disclosure to the accompanying financial statements.



Required Supplementary Information (unaudited)

For the last ten years¹ (\$ in thousands)

SCHEDULE OF THE UNIVERSITY'S PROPORTIONATE SHARE OF THE NET PENSION LIABILITY MASSACHUSETTS STATE EMPLOYEES' RETIREMENT SYSTEM

	6/30/2018	6/30/2017	6/30/2016	6/30/2015
University's proportion of the net pension liability	3.56%	3.39%	3.92%	3.49%
University's proportionate share of the net pension liability	\$ 420,234	\$ 429,871	\$ 408,418	\$ 237,134
University's covered-employee payroll	\$ 1,168,661	\$ 1,156,082	\$ 1,139,719	\$ 1,061,132
University's proportionate share of the net pension liability as a percentage of its covered-employee payroll	35.96%	37.18%	35.83%	22.35%
Plan fiduciary net position as a percentage of total pension liability	67.21%	63.48%	67.87%	76.32%

SCHEDULE OF THE UNIVERSITY'S CONTRIBUTIONS MASSACHUSETTS STATE EMPLOYEES' RETIREMENT SYSTEM

	6/30/2018	6/30/2017	6/30/2016	6/30/2015
Contractually required contribution	\$28,292	\$25,618	\$22,386	\$22,870
Contributions in relation to the contractually required contribution	(28,292)	(25,618)	(22,386)	(22,870)
Contribution deficiency (excess)	\$ -	\$ -	\$ -	\$ -
University's covered-employee payroll	\$ 1,168,661	\$ 1,156,082	\$ 1,139,719	\$ 1,061,132
Contributions as a percentage of covered-employee payroll	2.42%	2.22%	1.96%	2.16%

SCHEDULE OF THE UNIVERSITY'S PROPORTIONATE SHARE OF THE NET OTHER POSTEMPLOYMENT BENEFITS (OPEB) LIABILITY STATE RETIREES' BENEFIT TRUST

	6/30/2018
University's proportion of the net OPEB	4.13%
University's proportionate share of the net OPEB	\$ 817,357
University's covered-employee payroll	\$ 1,168,661
University's proportionate share of the net OPEB as a percentage of its covered-employee payroll	69.94%
Plan fiduciary net position as a percentage of total OPEB liability	4.80%

SCHEDULE OF THE UNIVERSITY'S CONTRIBUTIONS STATE RETIREES' BENEFIT TRUST

	6/30/2018
Contractually required contribution	\$21,421
Contributions in relation to the contractually required contribution	(21,421)
Contribution deficiency (excess)	\$ -
University's covered-employee payroll	\$ 1,168,661
Contributions as a percentage of covered-employee payroll	1.83%

1 Until a full ten year trend is compiled, the University is presenting only information for the years for which information is available.

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