

University of Massachusetts
ANNUAL FINANCIAL REPORT
2019



University of Massachusetts

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University of Massachusetts

ANNUAL FINANCIAL REPORT 2019

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As of November 2019

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December 18, 2019

I am pleased to present the annual financial report of the University of Massachusetts, which outlines the university's financial activities over the past year and serves to underscore our long-held commitment to fiscal management and accountability.

As the Commonwealth's public research university, UMass continues to be a beacon of excellence and is widely recognized for its highly engaged faculty, rigorous academic offerings and groundbreaking research.

This year, UMass has maintained its position among top-ranked campuses by *U.S. News & World Report*, remaining one of the only university systems in the country with all of its undergraduate campuses in the top tier. For the fourth consecutive year, UMass was named to *Reuters'* list of the World's Most Innovative Universities, placing it among the institutions doing the most to advance science, invent new technologies and power new markets.

With more than 300,000 alumni living in Massachusetts and roughly 18,000 students graduating every year, UMass is the single-largest contributor to the Massachusetts workforce. UMass continues to educate and prepare students for careers in high-demand fields, like healthcare, engineering and computer science.

Alongside this growth, UMass has remained unwavering in our mission to maintain affordability, increasing our own commitment to institutional financial aid to a record high \$347 million this year.

We also continue to take our responsibility to prudently manage the university's resources seriously. We have established accountability in finance structures, increased transparency and more effectively managed operating costs across the five campuses. Over the past year, the university has maintained its strong bond ratings, with an Aa2 rating from Moody's, an AA- rating from S&P and an AA rating by Fitch. These reports reflect continued confidence in the institution's overall financial health, bucking the trend for colleges and universities nationwide and highlighting our own effective stewardship.

Additionally, we are implementing a Unified Procurement Services Team, which will continue to realize efficiencies in our operations. Over the first 18 months alone, we expect to realize \$16.5 million in savings, with more to come in subsequent years as additional areas of opportunity are identified.

With the dedication of students, faculty and staff across our five campuses, we will ensure UMass continues to fulfill its critical mission of affordability, opportunity and service to the Commonwealth.

Martin T. Meehan
President



KPMG LLP
Two Financial Center
60 South Street
Boston, MA 02111

Independent Auditors' Report

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 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 year ended June 30, 2019, and the related notes to the financial statements, which collectively comprise the University's basic financial statements for the year then ended 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 U.S. generally accepted accounting principles; 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.

Auditors' 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. The financial statements of the discretely presented component units identified in note 1 were not audited in accordance with *Government Auditing Standards*.

An audit involves performing procedures to obtain audit evidence about the amounts and disclosures in the financial statements. The procedures selected depend on the auditors' 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 entity'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 entity'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, 2019, and the respective changes in financial position and, where applicable, cash flows thereof for the year then ended in accordance with U.S. generally accepted accounting principles.

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Emphasis of Matter

As discussed in Note 1, the financial statements of the University are intended to present the financial position, the changes in financial position and, where applicable, cash flows of only that portion of the business-type activities and the aggregate remaining fund information of the Commonwealth of Massachusetts that is attributable to the transactions of the University. They do not purport to, and do not, present fairly the financial position of the Commonwealth of Massachusetts as of June 30, 2019, the changes in its financial position, or where applicable, its cash flows for the year then ended in conformity with U.S. generally accepted accounting principles. Our opinion is not modified with respect to this matter.

Other Matters

2018 Financial Statements

The accompanying financial statements of the University of Massachusetts as of and for the year ended June 30, 2018 were audited by other auditors whose report thereon, expressed an unmodified opinion on those financial statements.

Required Supplementary Information

U.S. generally accepted accounting principles require that the Management's Discussion and Analysis on pages 6-15 and the Schedules of the University's Proportionate Share of the Net Pension and Other Post Employment Benefit Liabilities and the Schedules of the University's Contributions on pages 54-55 be presented to supplement the basic financial statements. Such information, although not a 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. We have applied certain limited procedures to the required supplementary information in accordance with auditing standards generally accepted in the United States of America, which 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.

Other Reporting Required by Government Auditing Standards

In accordance with *Government Auditing Standards*, we have also issued our report dated December 18, 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 on the effectiveness of the University's opinion on 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.

KPMG LLP

Boston, Massachusetts
December 18, 2019

Management's Discussion and Analysis (unaudited)

June 30, 2019

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, 2019 and 2018, 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 in 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 is the flagship campus of the University. 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 24th among the nation's top public schools in the 2020 *U.S. News & World Report*.

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. With 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 offers students high-quality academic programs through undergraduate majors and professional and doctoral programs, including the state's only public law school.

UMass Law, the only public law school in Massachusetts, is committed to providing an excellent, affordable, and accessible legal education that balances legal theory, doctrine, skills, experience, and professionalism. UMass Law prepares students to thrive in a changing profession and advances justice through research, writing, teaching, learning, and practice. UMass Law's July 2018 Massachusetts first-time bar passage rate was 92.6%, the third highest passage rate of the Massachusetts law schools.

UMass Lowell is ranked 179th among the National Universities Rankings within the 2020 *U.S. News & World Report*, with programs supporting workforce and economic development through innovation, entrepreneurship and public-private partnerships. UMass Lowell 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 according to *U.S. News & World Report*, UMMS has remained true to its

founding mission while also becoming globally recognized in biomedical research. UMMS has three graduate schools—the School of Medicine, the Graduate School of Biomedical Sciences and the 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 over 80,000 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 combined net position increased \$114.0 million from \$2.4 billion in fiscal year 2018 to \$2.5 billion in fiscal year 2019.

The University's income before other revenues, expenses, gains, and losses was \$78.1 million for fiscal year 2019. 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 University's income before other revenues, expenses, gains, and losses was \$108.2 million.

From fiscal year 2018 to fiscal year 2019, the University's operating revenues decreased by \$15.5 million driven primarily by a decrease in revenue generated from public service activities provided by UMMS through

its Commonwealth Medicine (CWM) programs offset by increases in grant and contract revenues. Operating expenses decreased by \$29.6 million primarily driven by the decrease in expenses related to public service activities, which can be directly correlated to the decrease in revenues for these activities. Non-operating revenues increased \$61.1 million primarily attributed to an increase in state appropriations and strong investment performance.

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, 2019 and 2018. The University's net position (the difference between assets, deferred outflows, deferred inflows, 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 (the Board). Note 15 to the accompanying financial statements depicts the designations of unrestricted net position at June 30, 2019 and 2018, respectively.

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, 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 analyses 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 and Subsidiary (WCCC), 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, 2019, 2018, and 2017, respectively, are presented on page 9.

At June 30, 2019, total net position was \$2.5 billion. The University's largest asset continues to be its capital assets, net of accumulated depreciation, of \$5.2 billion at June 30, 2019, \$5.1 billion at June 30, 2018 and \$4.9 billion at June 30, 2017.

Liabilities totaled \$4.9 billion at June 30, 2019, a decrease of \$236.5 million over fiscal year 2018. Long-term liabilities represent 84% of total liabilities at June 30, 2019, primarily consisting of \$2.7 billion of long-term debt and \$1.1 billion of pension and other postemployment benefit (OPEB) liabilities.

The University's current assets at June 30, 2019 of \$921.6 million exceeded current liabilities of \$799.3 million, and as a result the current ratio was \$1.15 in assets to every one dollar in liabilities. This is due to a decrease of the current portion of long-term debt related to the refinancing of debt in 2019. At June 30, 2018, current assets of \$918.7 million were less than current liabilities of \$934.5 million, resulting in a current ratio of \$0.98. At June 30, 2017, current assets of \$742.5 million exceeded current liabilities of \$662.1 million, resulting in a current ratio of \$1.19.

Revenues, expenses, and changes in net position

Condensed statements of revenues, expenses, and changes in net position for the three years ended June 30, 2019, 2018, and 2017, are presented on page 9.

CONDENSED STATEMENTS OF NET POSITION

As of June 30, 2019, 2018, and 2017 (\$ in thousands)	2019	2018	2017
Assets			
Current assets	\$ 921,582	\$ 918,685	\$ 742,482
Noncurrent assets			
Capital assets, net	5,164,200	5,075,476	4,854,110
All other noncurrent assets	1,281,662	1,291,309	1,404,203
Total assets	7,367,444	7,285,470	7,000,795
Deferred outflows of resources	356,683	341,335	275,725
Liabilities			
Current liabilities	799,310	934,525	622,084
Noncurrent liabilities	4,060,669	4,161,911	3,562,485
Total liabilities	4,859,979	5,096,436	4,184,569
Deferred inflows of resources	361,245	141,485	37,671
Net position			
Net investment in capital assets	2,343,872	2,288,599	2,208,370
Restricted:			
Nonexpendable	28,617	28,022	27,443
Expendable	206,023	222,343	201,710
Unrestricted	(75,609)	(150,080)	616,757
Total net position	\$ 2,502,903	\$ 2,388,884	\$ 3,054,280

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

As of June 30, 2019, 2018, 2017 (\$ in thousands)	2019	2018	2017
Operating revenues			
Tuition and fees, net of scholarships	\$ 894,904	\$ 874,826	\$ 847,832
Grants and contracts	593,086	560,990	560,081
Auxiliary enterprises	441,795	416,733	400,822
Other operating revenues	523,569	616,265	631,854
Total operating revenues	2,453,354	2,468,814	2,440,589
Operating expenses	3,270,790	3,300,392	3,158,953
Operating loss	(817,436)	(831,578)	(718,364)
Nonoperating revenues (expenses)			
Federal appropriations	7,004	6,688	6,602
State appropriations	780,221	751,894	720,817
Interest on indebtedness	(116,217)	(115,851)	(110,069)
Nonoperating federal grants	84,454	81,590	74,050
Other nonoperating income	140,047	110,062	117,248
Total nonoperating revenues (expenses)	895,509	834,383	808,648
Income before other revenues, expenses, gains and losses	78,073	2,805	90,284
Other Revenues, Expenses, Gains and Losses			
Capital appropriations, grants and other sources	38,665	76,169	150,460
Other (deductions) additions	(2,719)	(1,388)	13,443
Total other revenues, expenses, gains, and losses	35,946	74,781	163,903
Total increase in net position	114,019	77,586	254,187
Net position			
Net position at the beginning of the year	2,388,884	3,054,280	2,800,093
Cumulative effect of adopting GASB 75*	-	(742,982)	-
Net position at the beginning of the year, restated	2,388,884	2,311,298	2,800,093
Net position at the end of the year	\$ 2,502,903	\$ 2,388,884	\$ 3,054,280

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

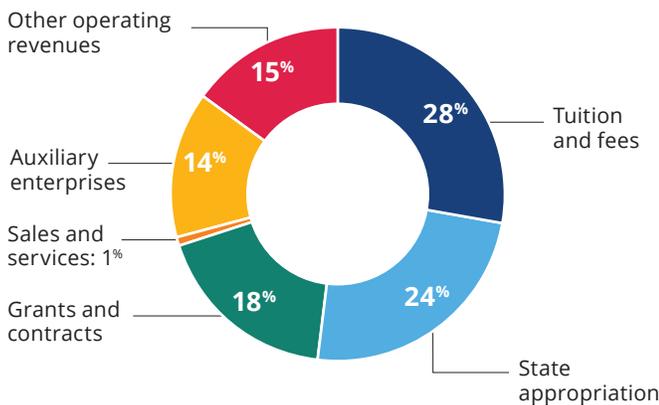
Operating revenues and expenses

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 appropriations 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, including state appropriations, increased \$12.9 million (0.4%) from \$3.2 billion in fiscal year 2018 to \$3.2 billion in FY19. Total operating revenues in fiscal year 2018, including state appropriations, increased \$59.3 million (1.9%) from \$3.2 billion in fiscal year 2017.

As noted in the fiscal year 2019 operating revenues chart below, over 50% of the University's operating revenues were from tuition and fees and state appropriations.

Other operating revenues includes revenues generated from 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, other operating revenues also include revenue earned 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.

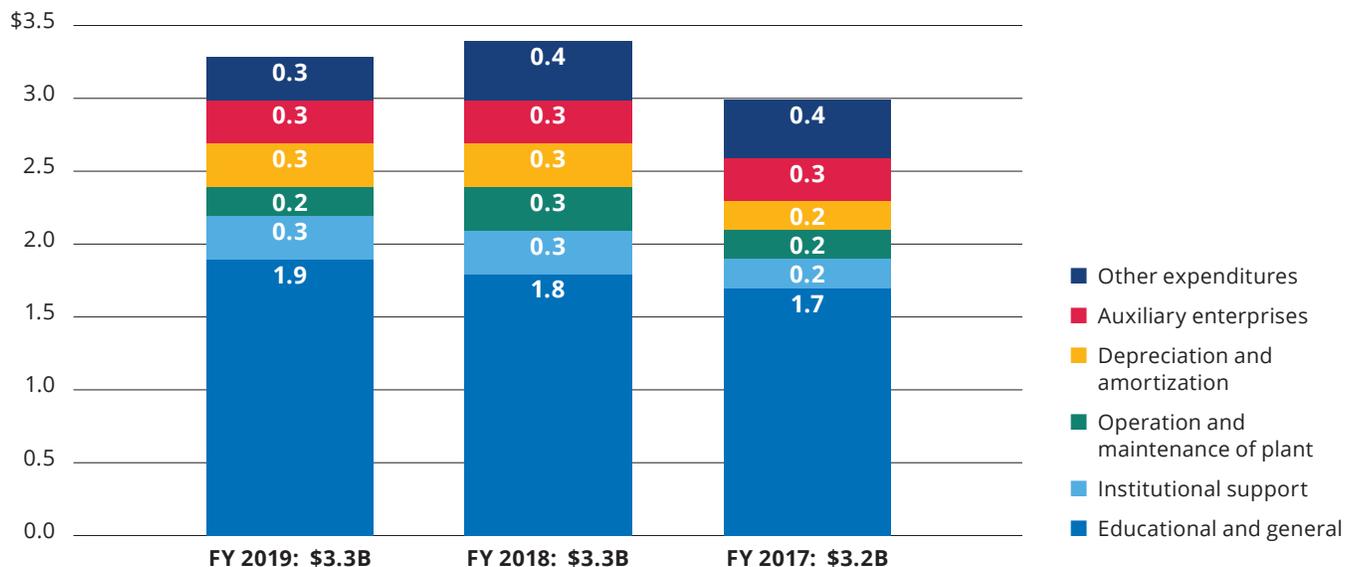
FISCAL YEAR 2019 OPERATING REVENUES (including State Appropriations)



In fiscal year 2019, operating expenses, including depreciation and amortization, totaled \$3.3 billion, as compared to \$3.3 billion in 2018 and \$3.2 billion in 2017. Of the fiscal year 2019 total, \$1.9 billion or 57% was used to support the academic core activities of the University, including \$487.7 million in research. The education and general portion of 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. Public service activities expenditures include payments made to the Commonwealth pursuant to requirements of legislation enacted by the State Legislature of Massachusetts.

THREE YEAR OPERATING EXPENSES

(\$ in billions)





State appropriations

In fiscal year 2019, 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 appropriations are unrestricted revenue, nearly 100% of the state appropriations support 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 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 Changes in Net Position. The University pays the Commonwealth for the fringe benefit cost of the employees paid from funding sources other than state operating appropriations. These amounts are not included in state appropriations.

The University's state appropriations including fringe benefits increased in fiscal year 2019 by \$28.3 million from fiscal year 2018 primarily due to increased collective bargaining costs determined by the State, as well as an increase in the State's fringe benefit rate.

The table below details the state appropriations for the fiscal years ended June 30, 2019, 2018, and 2017:

STATE APPROPRIATIONS

(\$ in thousands)

	FY 2019	FY 2018	FY 2017
State appropriations	\$ 551,953	\$ 528,868	\$ 512,900
Plus: fringe benefits	228,268	223,026	207,917
Commonwealth support	\$ 780,221	\$ 751,894	\$ 720,817

State capital appropriations

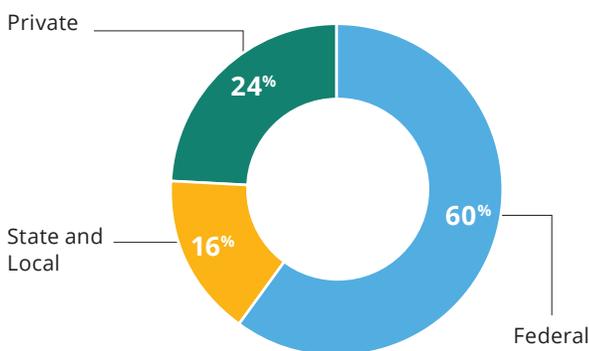
The University faces a financial challenge to maintain and upgrade its capital assets including its infrastructure, buildings and grounds. In order to have a successful capital program, the University must rely on a combination of revenue sources to fund its capital investments. In fiscal years 2019, 2018 and 2017, the capital support provided to the University through appropriations and grants from the Commonwealth was \$25.5 million, \$67.4 million and \$121.4 million, respectively. Beginning in fiscal year 2019, the Commonwealth established a new strategic framework for approving the allocation of state funding for capital projects across higher education. The new framework provides funding in four distinct categories: major projects, critical repairs, critical infrastructure and readiness determination projects. The Commonwealth's fiscal year 2019 capital plan included approved projects from the prior year and the following new capital investments.

- Major Projects - Science and Engineering Building Renovation at Dartmouth for \$25 million.
- Critical Repairs - UMass is expected to receive \$75 million over the next five years to fund small-scale critical repairs (deferred maintenance) projects across the five campuses.

Grant and contract revenue

Among Massachusetts colleges and universities, the University ranks fourth in research and development expenditures, behind only MIT, Harvard, and Boston University. 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.

GRANT AND CONTRACT REVENUE FY2019



Collectively, UMass Amherst and UMass Medical School account for approximately 76% of the University's total research enterprise of \$593.1 million. The chart below details the University's grant and contract revenues by source for the year ended June 30, 2019.

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 Notes 1 and 18 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 at June 30, 2019, 2018 and 2017 was \$973.3 million, \$871.9 million and \$819.7 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, 2019, 2018 and 2017 was \$56.4 million, \$54.8 million and \$53.1 million, of which the majority is invested with UMF.

Tuition and fees

For academic year 2018–2019, tuition was raised an average of 2.5% for in-state undergraduate students over the prior year. For academic year 2017–2018, tuition was raised on average 3.0% over the prior year. Affordability continues to be a priority of the University and increases in fees are considered in conjunction with State support on an annual basis.

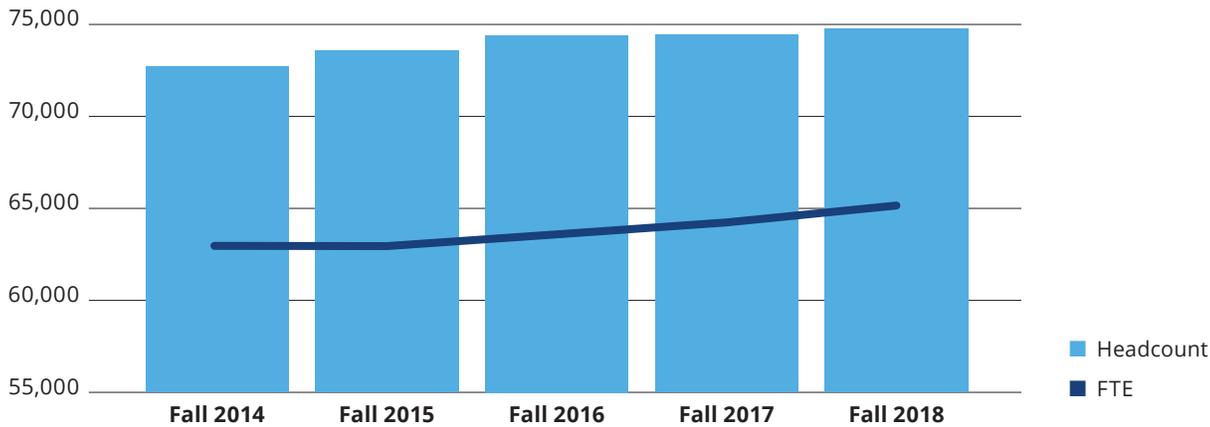
Enrollment

As shown in the table below, total enrollment in the fall of 2018 was 65,346 FTE (74,705 headcount students), an increase of 1.3% over the previous year's enrollment of 64,530 FTE (74,572 headcount students). Enrollment in the fall of 2016 was 63,977 FTE (74,496 headcount students). The five year enrollment growth of 4.7% is meaningful as other institutions of higher education have experienced 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.

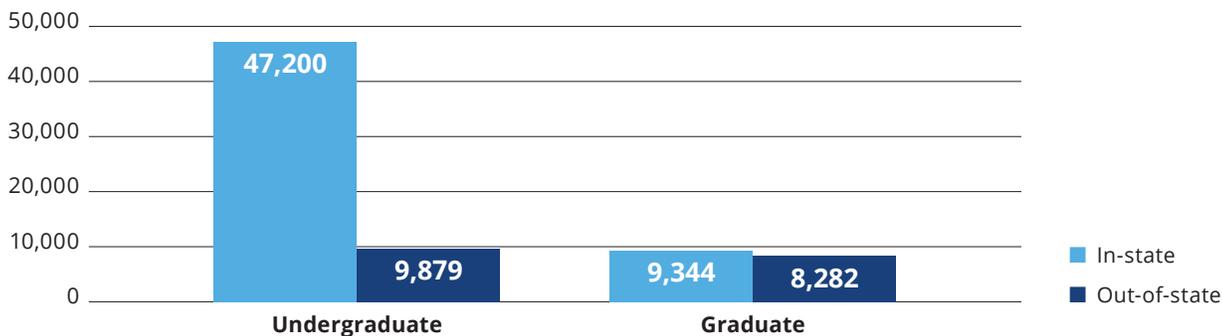
Admission to the University is open to residents of the Commonwealth and non-residents on a competitive basis. For the fall semester, Massachusetts residents accounted for 83.5% and 82.6% of the University's total undergraduate enrollment in Fall 2018 and Fall 2017, respectively as shown in the table below.

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 2019, UMassOnline and the Continuing Education units at the five campuses collaboratively generated tuition revenue of \$116.1 million and supported 80,399 course enrollments, an increase of 2.6% for revenue and an increase of 2.5% for course enrollments as compared to fiscal year 2018. For fiscal year 2018, UMassOnline 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.

TOTAL ENROLLMENT



FALL 2018 ENROLLMENT BY TYPE



Long-term debt

Long-term debt is the University's largest liability at June 30, 2019, 2018 and 2017. The University had outstanding debt of \$3.0 billion at June 30, 2019, and \$3.1 billion at June 30, 2018 and 2017. 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 Worcester City Campus Corporation.

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). For further details on outstanding balances with each issuer, refer to Note 9 of the accompanying financial statements.

University bond 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 and the 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 policy, each campus' outstanding debt cannot exceed 8% of its 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 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, currently 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, 2019, 2018 and 2017 was \$111.1 million, \$113.5 million and \$115.3 million, respectively.

Capital plan

A majority of the capital spending during fiscal year 2019 related to continued investments in deferred maintenance. In September 2018, the Board approved an updated five-year capital plan for fiscal years 2019–2023 totaling \$2.1 billion. The University's capital plan is funded through a combination of



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 Board in prior-year capital plans. The University's capital approval process provides for a two-step review process involving the President's Office, the Building Authority and the Board. Additional approvals have been put in place for any capital project seeking alternative funding and/or delivery options.

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 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, 2019 and 2018 (\$ in thousands)	2019	2018
Assets		
Current assets		
Cash and cash equivalents	\$ 84,986	\$ 88,463
Cash held by state treasurer	12,560	14,689
Accounts receivable, net	286,028	310,371
Short-term investments	489,907	470,139
Other current assets	48,101	35,023
Total current assets	921,582	918,685
Noncurrent assets		
Cash held by state treasurer	8,420	8,009
Deposits with bond trustees	211,926	319,228
Accounts receivable, net	55,123	64,251
Long-term investments	869,663	775,294
Other assets	136,530	124,527
Capital assets, net	5,164,200	5,075,476
Total noncurrent assets	6,445,862	6,366,785
Total assets	7,367,444	7,285,470
Deferred outflows of resources	356,683	341,335
Liabilities		
Current liabilities		
Accounts payable and accrued expenses	325,624	336,077
Unearned revenues and advances	61,340	59,323
Long-term debt, current portion	341,888	445,035
Other current liabilities	70,458	94,090
Total current liabilities	799,310	934,525
Noncurrent liabilities		
Unearned revenues and advances	61,658	120,990
Long-term debt	2,700,490	2,644,033
Derivative instruments, interest rate swaps	55,622	41,602
Net pension liability	409,319	420,234
Net other postemployment benefits liability	718,955	817,357
Other long-term liabilities	114,625	117,695
Total noncurrent liabilities	4,060,669	4,161,911
Total liabilities	4,859,979	5,096,436
Deferred inflows of resources	361,245	141,485
Net position		
Net investment in capital assets	2,343,872	2,288,599
Restricted:		
Nonexpendable	28,617	28,022
Expendable	206,023	222,343
Unrestricted	(75,609)	(150,080)
Total net position	\$ 2,502,903	\$ 2,388,884

See accompanying notes to the financial statements.

STATEMENTS OF REVENUES, EXPENSES, AND CHANGES IN NET POSITION

For The Years Ended June 30, 2019 and 2018 (\$ in thousands)	2019	2018
Revenues		
Operating revenues		
Tuition and fees (net of scholarship allowances of \$328,845 at June 30, 2019 and \$310,106 at June 30, 2018)	\$ 894,904	\$ 874,826
Grants and contracts	593,086	560,990
Sales and services, educational activities	34,984	30,591
Auxiliary enterprises	441,795	416,733
Other operating revenues:		
Sales and services, independent operations	59,893	68,497
Sales and services, public service activities	291,085	381,018
Other	137,607	136,159
Total operating revenues	2,453,354	2,468,814
Expenses		
Operating expenses		
Educational and general		
Instruction	901,235	876,235
Research	487,725	471,135
Public service	83,566	78,238
Academic support	184,462	187,495
Student services	158,991	156,934
Institutional support	269,126	271,535
Operation and maintenance of capital assets	246,725	255,825
Depreciation and amortization	276,638	261,417
Scholarships and fellowships	49,509	50,410
Auxiliary enterprises	338,207	313,741
Other expenditures		
Independent operations	47,785	52,211
Public service activities	226,821	325,216
Total operating expenses	3,270,790	3,300,392
Operating loss	(817,436)	(831,578)
Nonoperating revenues (expenses)		
Federal appropriations	7,004	6,688
State appropriations	780,221	751,894
Gifts	43,705	39,022
Investment income	48,943	37,622
Unrealized gain on investments	18,082	5,558
Endowment income distributed for operations	27,741	26,742
Interest on indebtedness	(116,217)	(115,851)
Nonoperating federal grants	84,454	81,590
Other nonoperating income	1,576	1,118
Net nonoperating revenues	895,509	834,383
Income before other revenues, expenses, gains, and losses	78,073	2,805
Other revenues, expenses, gains and losses		
Capital appropriations	25,500	67,437
Capital grants, contracts and gifts	13,165	8,732
Endowment return, net of amount used for operations	13,467	8,166
Other deductions	(16,186)	(9,554)
Total other revenues, expenses, gains, and losses	35,946	74,781
Total increase in net position	114,019	77,586
Net position		
Net position at beginning of year	2,388,884	3,054,280
Cumulative effect of adopting GASB 75	-	(742,982)
Net position at beginning of year, adjusted	2,388,884	2,311,298
Net position at end of year	\$ 2,502,903	\$ 2,388,884

See accompanying notes to the financial statements.

STATEMENTS OF CASH FLOWS

For The Years Ended June 30, 2019 and 2018 (\$ in thousands)

	2019	2018
Cash flows from operating activities		
Tuition and fees	\$ 985,247	\$ 974,631
Grants and contracts	587,539	569,408
Payments to suppliers	(950,398)	(848,595)
Payments to employees	(1,603,488)	(1,690,799)
Payments for benefits	(480,477)	(402,823)
Payments for scholarships and fellowships	(76,927)	(50,402)
Loans issued to students and employees	(8,882)	(8,068)
Collections of loans to students and employees	17,660	8,751
Auxiliary enterprises	441,563	416,628
Sales and services, educational	35,360	30,573
Sales and services, independent operations	59,893	68,497
Sales and services, public service activities	293,383	394,927
Other receipts, net	190,651	194,419
Net cash used for operating activities	(508,876)	(342,853)
Cash flows from noncapital financing activities		
State appropriations	780,221	751,894
Federal appropriations	7,004	6,688
Grants, contracts and gifts for other than capital purposes	52,308	38,809
Nonoperating federal grants	84,454	81,590
Student organization agency transactions	(1,297)	1,549
Net cash provided by noncapital financing activities	922,690	880,530
Cash flows from capital and other financing activities		
Proceeds from capital debt	278,041	105,380
Proceeds from premiums received	47,633	-
Capital lease payments received	4,252	-
Bond issuance costs paid	(1,430)	-
Capital appropriations	25,500	67,437
Capital grants, contracts and gifts	4,562	8,945
Purchases of capital assets and construction	(382,048)	(487,912)
Retirement of debt	(254,910)	-
Principal paid on capital debt and leases	(103,170)	(96,325)
Interest paid on capital debt and leases	(137,517)	(125,825)
Net cash used for capital financing activities	(519,087)	(528,300)
Cash flows from investing activities		
Proceeds from sales and maturities of investments	1,350,013	1,244,020
Interest on investments	47,623	19,774
Purchases of investments	(1,404,860)	(1,396,424)
Net cash used for investing activities	(7,224)	(132,630)
Net decrease in cash and cash equivalents	(112,497)	(123,253)
Cash and cash equivalents: beginning of the year	430,389	553,642
Cash and cash equivalents: end of the year	317,892	430,389

STATEMENTS OF CASH FLOWS

For The Years Ended June 30, 2019 and 2018 (\$ in thousands)

	2019	2018
Reconciliation of operating loss to net cash used by operating activities		
Operating loss	(817,436)	(831,578)
Adjustments to reconcile loss to net cash used by operating activities:		
Depreciation and amortization expense	276,638	261,417
Changes in assets and liabilities:		
Accounts receivable, net	29,219	3,574
Other assets	(23,761)	2,734
Accounts payable and accrued expenses	5,335	41,749
Unearned revenues and advances	(57,315)	67,108
Other liabilities	(26,702)	33,411
Pension liability	(10,915)	(9,637)
Other postemployment benefits liability	(98,402)	74,375
Changes in deferred outflows related to assets	(1,782)	-
Changes in deferred inflows related to future revenues	76,839	-
Changes in deferred outflows and inflows related to employee benefits	139,406	13,994
Net cash used for operating activities	(508,876)	(342,853)
Supplemental disclosure of noncash activities		
Assets acquired and included in accounts payable and other liabilities	36,558	49,110
Loss on disposals of capital assets	(14,331)	(6,695)
Donated assets	1,390	1,727

See accompanying notes to the financial statements.



STATEMENTS OF FINANCIAL POSITION

For The Years Ended June 30, 2019 and 2018 (\$ in thousands)	2019	2018
Assets		
Cash	\$ 925	\$ 1,153
Bequests receivable	2,311	399
Pledges receivable, net	20,417	25,180
Investments of the Foundations and held on behalf of the University	1,338,359	1,223,596
Prepaid expenses and other assets	2,917	2,592
Land, property, plant and equipment, net	16,481	16,906
Total assets	1,381,410	1,269,826
Liabilities and net assets		
Liabilities		
Accounts payable and accrued expenses	492	448
Deferred revenue	944	1,049
Obligations to beneficiaries of split-interest agreements	2,386	2,384
Assets held on behalf of others	762,232	678,890
Total liabilities	766,054	682,771
Net assets		
Without donor restrictions	37,404	34,342
With donor restrictions	577,952	552,713
Total net assets	615,356	587,055
Total liabilities and net assets	\$ 1,381,410	\$ 1,269,826

STATEMENTS OF ACTIVITIES

For The Years Ended June 30, 2019 (with summarized financial information for the year ended June 30, 2018) (\$ in thousands)	Without donor restriction	With donor restriction	Total 2019	Total 2018
Support and revenue				
Gifts, bequests and grants	\$ 891	\$ 20,173	\$ 21,064	\$ 31,603
Other contributions	60,237	636	60,873	1,970
Total investment income, including net gains (losses) - net of fees	46,124	29,199	75,323	64,715
Investment management fee	10,935	-	10,935	11,022
Other income	41	230	271	323
Net assets released from restrictions	25,803	(25,803)	-	-
Total support and revenue	144,031	24,435	168,466	109,633
Expenses				
Distributions to University	36,334	-	36,334	30,846
Program services	9,718	-	9,718	10,084
Fundraising support	7,999	-	7,999	6,210
Administrative and general	2,353	-	2,353	3,122
Total expenses	56,404	-	56,404	50,262
Excess of support and revenue over expenses	87,627	24,435	112,062	59,371
Less: Fiscal 2019 activity related to assets held on behalf of University	(87,384)	-	(87,384)	(18,697)
Less: Fiscal 2019 activity related to assets held on behalf of Edward M. Kennedy Institute	4,011	-	4,011	(1,683)
Transfers (from) to other funds	(804)	804	-	-
Change in value of split interest agreements	(388)	-	(388)	(387)
Change in net assets	3,062	25,239	28,301	38,604
Net assets, beginning of year	34,342	552,713	587,055	548,451
Net assets, end of year	\$ 37,404	\$ 577,952	\$ 615,356	\$ 587,055

See accompanying notes to the financial statements.

Notes to Financial Statements

1. Summary of Significant Accounting Policies

Reporting entity

The University of Massachusetts (University), a federal land grant institution, is governed by Massachusetts General Laws Chapter 75. Its Board consists of nineteen voting members and three non-voting members. The voting members consist of two full-time students, the Secretary of Education of the Commonwealth of Massachusetts (Commonwealth) and sixteen members appointed by the governor. The non-voting members consist of student representatives who may only participate in open meetings of the full Board.

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.

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 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 blended in the financial statements of the University because of the significance and exclusivity of their financial relationships with the University. Refer to Note 17 for condensed financial information for these blended component units.

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). In these financial statements, UMF and UMDF are collectively known as The Foundations. These are related tax-exempt organizations founded to foster and promote the growth, progress and general welfare of the University.

The Building Authority and the Foundations issue separate standalone financial statements which may be obtained by contacting the respective organizations or by contacting the University Controller, bcevallos@umassp.edu.

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. The Foundations' financial statements are prepared in accordance with accounting and reporting requirements prescribed by the Financial Accounting Standards Board (FASB). As such, certain revenue recognition criteria and presentation features are different from GASB revenue recognition criteria and presentation features. No modifications have been made to the Foundations' financial information in the University's financial reporting entity for these differences. These financial statements are reported on a combined basis, and all intra-University transactions are eliminated.

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 Statements of Revenues, Expenses and Changes in Net Position, the University's operating activities consist of tuition and fees, grants and contracts, sales and services, auxiliary enterprise and other operating revenues. Other operating revenues include sales and services provided by the UMass Medical School (UMMS) under its Commonwealth Medicine (CWM) programs, which provide consulting and services in health care financing, administration and policy to federal, state and local agencies and not-for-profit health and policy organizations. Also included in other operating revenues are payments received by the Medical School for educational services it provides to its clinical affiliate, UMass Memorial Medical Center (UMass Memorial).

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 for exchange transactions are recognized when earned and expenses are recognized when incurred. Restricted grant revenue is recognized only when all eligibility requirements have been met.

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.

Net position

Net position is classified into the following categories:

- **Net investment in capital assets:** 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 include cash balances maintained in checking accounts, overnight repurchase agreements and amounts held in permitted money market mutual funds with an original maturity date of three months or less.

In addition, the Building Authority is authorized to invest in the Massachusetts Municipal Depository Trust ("MMDT"), a pooled money market-like fund, established under General Laws, Chapter 29, Section 38A. MMDT is an external investment pool that meets the criteria to report its holdings at amortized cost. As such, the Building Authority reports its position in MMDT at amortized cost which approximates the net asset value of \$1.00 (one dollar) per share. MMDT has a maturity of less than one year and is not rated.

Accounts receivable, net

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

Investments

Investments are reported 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

UMF maintains and administers the University's endowment assets and Intermediate Term Investment Fund (ITIF). UMF 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, 2019 and 2018 was 4%.

Inventories

The University inventories consist of books, general merchandise, and vaccines 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.

Following is the range of useful lives for the University's depreciable assets:

Depreciable asset category	Useful life in years
Land improvements	20
Buildings	20-40
Infrastructure	50
Building improvements	3-20
Equipment, furniture and IT infrastructure	3-15
Software	5

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.

Deferred outflows and inflows of resources

The University accounts for certain transactions that result in the consumption or acquisition of one period that are applicable to future periods as deferred outflows and deferred inflows, respectively, to distinguish them from assets and liabilities. Deferred outflows of resources increase net position, similar to assets and deferred inflows of resources decrease net position, similar to liabilities.

The components of deferred outflows and inflows of resources as of June 30, 2019 and 2018 included the following (\$ in thousands):

For the years ended June 30, 2019 and 2018 (\$ in thousands)	2019	2018
Deferred outflows of resources		
Fair value of interest rate swaps	\$ 34,262	\$ 18,887
Loss on debt refundings	69,119	74,443
Certain asset retirement obligations	1,782	-
Impact of assumption changes and investment losses to:		
Pension liability	113,654	126,244
Other postemployment benefits liability	137,866	121,761
	\$ 356,683	\$ 341,335
Deferred inflows of resources		
Sale of future revenues	76,839	-
Experience gains for:		
Pension liability	60,182	45,540
Other postemployment benefits liability	224,224	95,945
	\$ 361,245	\$ 141,485

Compensated absences

Employees earn the right to be compensated during absences for annual vacation leave and sick leave. Upon retirement, termination, or death, certain employees are compensated for unused sick and vacation leave, subject to certain limitations, at their current rate of pay. 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 on the Statements of Net Position based on the amount estimated to be paid to eligible employees in one year and beyond one year, respectively.

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 earned as qualifying expenses are incurred.

In addition, unearned revenues and advances include funds advanced to the University by the U.S. government under the Federal Perkins Loan Program (the Program). Under federal law, the authority for schools to make new loans under the Program ended on September 30, 2017, and final distributions were permitted through June 30, 2018. The University's Statements of Net Position include both the notes receivable and the related federal refundable loan liability.

Bond issuance costs

The University incurs certain costs associated with bond issuances. For the years ended June 30, 2019 and 2018, bond issuance costs amounted to \$1.4 million and \$0.2 million, respectively, and were expensed.

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 grants and contracts for research and other activities including medical service reimbursements from federal and state government agencies. The University records revenue and a corresponding receivable 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, 2019 and 2018 was \$136.8 million and \$131.4 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 activity 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.

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.

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 is exempt from Federal and state income tax under the doctrine of intergovernmental tax immunity. The University qualifies as a public charity eligible to receive charitable contributions under Section 170(b)(1)(A)(v) of the Internal Revenue Code, as amended (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, 2019 and 2018, respectively.

Newly implemented accounting standards

Effective for fiscal year 2019, the University implemented GASB Statement No. 83, *Certain Asset Retirement Obligations*, which addresses the accounting and financial reporting for legally enforceable liabilities associated with the retirement of certain tangible capital assets. The adoption of this standard required the University to record a deferred outflow and a related liability of \$1.8 million.

Effective for fiscal year 2019, the University implemented GASB Statement No. 88, *Certain Disclosures Related to Debt, Including Direct Borrowings and Direct Placements*, which is intended to improve the information that is disclosed in the notes to government financial statements related to these types of debt instruments. The adoption of this standard required the University to disclose certain direct borrowings in the notes of the financial statements.

Reclassifications

Certain reclassifications were made in the 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 \$21.0 and \$22.7 million at June 30, 2019 and June 30, 2018. 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 University's pool loan program.

At June 30, 2019 and 2018, deposits with bond trustees consisted of the following (\$ in thousands):

	2019	2018
Cash	\$ 10,253	\$ 10,480
MMDT	191,988	299,292
Permitted money market accounts	4,367	4,138
Repurchase agreements and other investments	5,318	5,318
Total cash and cash equivalents	\$ 211,926	\$ 319,228

At June 30, 2019, amounts restricted by bond trust agreements for capital projects, debt service and other purposes were \$182.4 million, \$18.9 million, and \$10.6 million, respectively.

Custodial Credit Risk – The custodial credit risk for deposits is the risk that, in the event of the failure of a depository financial institution, a government will not be able to recover deposits or will not be able to recover collateral securities that are in the possession of an outside party. The custodial credit risk for investments is the risk that, in the event of the failure of the counterparty to a transaction, a government will not be able to recover the value of investment or collateral securities that are in the possession of an outside party. As of June 30, 2019 and 2018, the bank balances of uninsured deposits totaled \$3.6 million and \$4.4 million, respectively.

Interest Rate Risk – MMDT and permitted money market accounts have effective maturities of less than one year.

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. MMDT and permitted money market accounts are not rated.

4. Investments

The investment portfolio of the University reflected on the Statements of Net Position for the year ended June 30, 2019 and 2018, respectively, includes the following:

	2019	2018
Short-term investments	\$ 489,907	\$ 470,139
Long-term investments	869,663	775,294
Total	\$ 1,359,570	\$ 1,245,433

Investment policies are established by 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. UMF holds certain 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 Foundations, as of June 30, 2019 and 2018, respectively are summarized below (\$ in thousands):

	University		Foundations	
	2019	2018	2019	2018
Cash and cash equivalents	\$ 111,408	\$ 118,491	\$ 31,914	\$ 30,545
Money market and other investments	260,000	226,900	4,411	4,430
MMDT	95,000	95,000	-	-
Fixed income investments	139,398	135,852	3,784	4,662
Pooled investments - Fund I	-	-	556,031	528,921
Commercial ventures and intellectual property	1,857	1,994	-	-
Annuity life income funds	13,160	15,833	3,472	3,675
	\$ 620,823	\$ 594,070	\$ 599,612	\$ 572,233
Foundation agency funds:				
Pooled investments - Fund I	415,445	341,464	415,445	341,464
Pooled investments - Fund II	323,302	309,899	323,302	309,899
Total	\$ 1,359,570	\$ 1,245,433	\$ 1,338,359	\$ 1,223,596

Investments held at UMF within Fund I represent the University's endowment funds. These funds include both donor-restricted endowments and quasi-endowments. Investments held at UMF within Fund II represent the operating cash of the University that has been transferred to UMF 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 carrying amounts of cash balances with uninsured or uncollateralized deposits were \$107.1 million and \$132.1 million, at June 30, 2019 and 2018, respectively.

The University held non-money market investments with a carrying and fair market value of \$871.4 million and \$743.6 million at June 30, 2019 and 2018, 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, 2019 and 2018, 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, excluding U.S. Treasury funds, at fair value by credit quality of the University's investment portfolio as of June 30, 2019 (\$ in thousands):

	S&P quality ratings								Total
	AAA	AA	A	BBB	BB	B	<B	Unrated	
Debt securities									
Government agency bonds	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 582	\$ 582
Asset backed securities	16,374	-	176	569	-	-	-	2,263	19,382
Commercial mortgage-backed securities	8,015	-	-	-	-	-	-	1,103	9,118
Government issued commercial mortgage-backed securities	-	-	-	-	-	-	-	11	11
Government mortgage-backed securities	-	-	-	-	-	-	-	4,539	4,539
Non-government backed CMOs	1,217	-	-	-	-	-	-	114	1,331
Corporate bonds	-	4,390	24,672	33,019	231	-	-	42	62,354
Municipal and provincial bonds	-	1,835	-	402	-	-	-	-	2,237
Bond fund, including exchange traded funds	56,472	16,512	17,318	26,615	7,815	2,351	210	8,781	136,074
Total debt securities	\$82,078	\$22,737	\$42,166	\$60,605	\$8,046	\$2,351	\$210	\$ 17,435	\$ 235,628

The table below presents the rated debt investments, excluding U.S. Treasury funds, 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									
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 CMOs	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
Bond fund, including exchange traded funds	35,074	18,373	16,452	22,319	7,658	2,451	276	8,049	110,652
Total debt securities	\$48,748	\$23,223	\$45,192	\$52,683	\$7,972	\$2,451	\$276	\$ 26,155	\$ 206,700

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 limiting investments through targeted allocations to different asset classes.

The following table presents the fair value of the rated debt investments component of the University's investment portfolio by investment maturity as of June 30, 2019 (\$ in thousands):

	Investment maturity (in years)				
	Less than 1	1 to 5	6 to 10	More than 10	Total
Debt securities					
U.S. Treasury securities	\$ -	\$ 71,340	\$ 5,675	\$ -	\$ 77,015
Government agency bonds	-	78	504	-	582
Asset backed securities	7,879	10,041	1,462	-	19,382
Commercial mortgage-backed securities	1,426	7,250	-	442	9,118
Government issued commercial mortgage-backed securities	11	-	-	-	11
Government mortgage-backed securities	2,211	2,082	246	-	4,539
Non-government backed CMOs	627	704	-	-	1,331
Corporate bonds	8,778	49,604	3,460	512	62,354
Municipal and provincial bonds	2,091	146	-	-	2,237
Bond fund, including exchange traded funds	25,471	80,406	25,615	4,582	136,074
Total debt securities	\$ 48,494	\$ 221,651	\$ 36,962	\$ 5,536	\$ 312,643

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

	Investment maturity (in years)				
	Less than 1	1 to 5	6 to 10	More than 10	Total
Debt securities					
U.S. Treasury securities	\$ -	\$ 69,819	\$ 8,917	\$ -	\$ 78,736
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 CMOs	640	799	-	-	1,439
Corporate bonds	15,131	45,172	2,527	423	63,253
Municipal and provincial bonds	2,051	144	-	-	2,195
Bond fund, including exchange traded funds	27,843	59,569	16,009	7,231	110,652
Total debt securities	\$ 51,722	\$ 197,502	\$ 28,558	\$ 7,654	\$ 285,436

Fair Value Measurement – 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. The University categorizes 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 investment custodian 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, 2019 and 2018, 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, 2019 (\$ in thousands):

	Investments measured at NAV	Investments classified in the fair value hierarchy			
		Level 1	Level 2	Level 3	Total
Money market funds	\$ -	\$ 284,110	\$ -	\$ -	\$ 284,110
Debt securities					
U.S. Treasury securities	-	77,015	-	-	77,015
Government agency bonds	-	-	582	-	582
Asset backed securities	-	-	19,382	-	19,382
Commercial mortgage-backed securities	-	-	9,118	-	9,118
Government issued commercial mortgage-backed securities	-	-	11	-	11
Government mortgage-backed securities	-	-	4,539	-	4,539
Non-government backed CMOs	-	-	1,331	-	1,331
Corporate bonds	-	-	62,312	42	62,354
Municipal and provincial bonds	-	-	2,237	-	2,237
Bond Funds, including exchange traded funds	-	136,074	-	-	136,074
Total debt securities	-	213,089	99,512	42	312,643
Equity securities					
Domestic equities	-	94,472	-	1,585	96,057
International equities	-	77,612	-	-	77,612
Total equity securities	-	172,084	-	1,585	173,669
Alternative investments					
Multi-strategy hedge funds					
Equity	121,787	-	-	-	121,787
Long/short	87,890	-	-	-	87,890
Fixed income	60,235	-	-	-	60,235
Absolute return	35,238	-	-	-	35,238
Real assets	12,466	-	-	-	12,466
Private equity	18,253	-	-	-	18,253
Private debt	18,834	-	-	-	18,834
Private real estate	7,422	-	-	-	7,422
Total alternative investments	362,125	-	-	-	362,125
Other securities	-	20,615	-	-	20,615
Investments at fair value	362,125	689,898	99,512	1,627	1,153,162
Cash and cash equivalents	-	-	-	-	63,408
Certificate of deposit	-	-	-	-	48,000
MMDT	-	-	-	-	95,000
Total investments at costs	-	-	-	-	206,408
Total investments	\$ 362,125	\$ 689,898	\$ 99,512	\$ 1,627	\$ 1,359,570

The following table presents unfunded commitments, redemption terms, restrictions, and notice period for investments that have been valued using NAV as a practical expedient as of June 30, 2019 (\$ in thousands):

	NAV	Unfunded commitments	Redemption terms	Notice period	Redemption restrictions
Alternative investments					
Multi-strategy hedge funds					
Equity	\$ 121,787	\$ -	Daily to quarterly	01-60 days	No lock-up restrictions
Long/short	87,890	-	Quarterly to annual	45-80 days	Lock-up provisions range from none to 1 year
Fixed income	60,235	-	Quarterly to annual	30-90 days	Lock-up provisions range from none to 2 years
Absolute return	35,238	-	Daily to annual	45-65 days	No lock-up restrictions
Real assets	12,466	-	Annual	90 days	No lock-up restrictions
Private equity	18,253	14,626	Closed end funds	(1)	Not redeemable
Private debt	18,834	16,942	Closed end funds	(1)	Not redeemable
Private real estate	7,422	2,889	Closed end funds	(1)	Not redeemable
Total	\$ 362,125	\$ 34,457			

(1) 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, 2018 (\$ in thousands):

	Investments measured at NAV	Investments classified in the fair value hierarchy			
		Level 1	Level 2	Level 3	Total
Money market funds	\$ -	\$ 376,422	\$ -	\$ -	\$ 376,422
Debt securities					
U.S. Treasury securities	-	78,736	-	-	78,736
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 CMOs	-	-	1,439	-	1,439
Corporate bonds	-	-	63,209	44	63,253
Municipal and provincial bonds	-	-	2,195	-	2,195
Bond Funds, including exchange traded funds	-	110,652	-	-	110,652
Total debt securities	-	189,388	96,004	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 at fair value	209,432	811,655	96,004	1,428	1,118,519
Cash and cash equivalents	-	-	-	-	31,866
Certificates of deposit	-	-	-	-	48
MMDT	-	-	-	-	95,000
Total investments at costs	-	-	-	-	126,914
Total investments	\$ 209,432	\$ 811,655	\$ 96,004	\$ 1,428	\$ 1,245,433

The following table presents unfunded commitments, redemption terms, restrictions, 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 terms	Notice period	Redemption restrictions
Alternative investments					
Multi-strategy hedge funds					
Equity	\$ 69,885	\$ -	Daily to quarterly	01-60 days	No lock-up restrictions
Long/short	19,971	-	Quarterly to annual	30-90 days	No lock-up restrictions
Fixed income	34,798	-	Quarterly to annual	60 days	No lock-up restrictions
Absolute return	40,213	-	Daily to annual	01-65 days	No lock-up restrictions
Real assets	11,689	-	Annual	90 days	No lock-up restrictions
Private equity	8,652	18,574	Closed end funds	(1)	Not redeemable
Private debt	19,462	12,408	Closed end funds	(1)	Not redeemable
Private real estate	4,762	4,170	Closed end funds	(1)	Not redeemable
Total	\$ 209,432	\$ 35,152			

(1) 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, 2019 and 2018 are as follows (\$ in thousands):

	2019	2018
Student tuition and fees	\$ 56,676	\$ 60,454
Student loans	54,403	62,462
Pledges receivable	24,655	25,199
Grants and contracts	102,761	94,235
CWM program receivable	60,322	64,690
UMass Memorial	22,131	42,157
Other receivables	44,457	55,983
	365,405	405,180
Less: allowance for doubtful accounts and discount to present value for pledges	(24,254)	(30,558)
Accounts receivable, net	\$ 341,151	\$ 374,622

The receivable from UMass Memorial, which is uncollateralized, represents a potential concentration of credit risk for the University. This receivable represents 6.5% and 11.3% of total accounts receivable for the University at June 30, 2019 and 2018, respectively.

6. UMass Memorial Medical Center

The University has granted UMass Memorial the right to occupy portions of the University's Medical School campus facilities for a period of 99 years, expiring on June 30, 2097. As part of the ongoing agreement entered into on June 24, 1998, 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, 2019 and 2018, the reimbursements received for services provided to UMass Memorial were \$168.4 million and \$140.5 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 \$109.3 million and \$85.5 million for the years ended June 30, 2019 and 2018, respectively. As of June 30, 2019 and 2018, the University has recorded a receivable in the amount of \$22.1 million and \$42.2 million, respectively from UMass Memorial which includes \$11.7 million and \$29.6 million, respectively, in payroll and related fringe charges. The University has recorded a payable of \$9.5 million and \$4.5 million at June 30, 2019 and 2018, 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, 2019 and 2018 (\$ in thousands):

	2017	Additions	Retirements/ adjustments	2018	Additions	Retirements/ adjustments	2019
Land	\$ 97,660	\$ 68,771	\$ (1,063)	\$ 165,368	\$ 1,336	\$ (680)	\$ 166,024
Buildings and improvements	6,055,606	444,250	(991)	6,498,865	642,801	(35,340)	7,106,326
Software	111,038	10,224	(8,078)	113,184	6,747	(5,639)	114,292
Equipment and furniture	685,066	52,453	(37,626)	699,893	41,929	(24,779)	717,043
Library books	60,144	-	(6,570)	53,574	-	(6,609)	46,965
	7,009,514	575,698	(54,328)	7,530,884	692,813	(73,047)	8,150,650
Accumulated depreciation	(2,852,988)	(261,417)	37,509	(3,076,896)	(276,495)	48,654	(3,304,737)
	4,156,526	314,281	(16,819)	4,453,988	416,318	(24,393)	4,845,913
Construction in progress	697,584	407,191	(483,287)	621,488	328,232	(631,433)	318,287
Total capital assets, net	\$4,854,110	\$ 721,472	\$ (500,106)	\$5,075,476	\$ 744,550	\$ (655,826)	\$5,164,200

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, 2019 and 2018, the University capitalized net interest costs of \$8.7 million and \$11.6 million, respectively.

8. Public Private Partnerships and Leases

Public Private Partnerships (PPPs)

On November 8, 2016, the Building Authority entered into an agreement whereby sub-leased land on the University of Massachusetts Boston campus to Provident Commonwealth Educational Resources, Inc. (PCER), a Massachusetts not-for-profit corporation, for a term of 40 years. The land is ground-leased to the Building Authority by the Commonwealth. PCER engaged a contractor to construct a 1,082-bed student housing facility on the site (the "Boston Project"). The Boston Project reverts to the Building Authority when the lease terminates. Commencing January 1, 2019, the annual rental amount payable to the Building Authority under the ground lease will be \$1.0 million.

The Boston Project was financed with \$130.1 million of revenue bonds issued on October 26, 2016 (Series 2016 Bonds) by the Massachusetts Development Finance Agency ("MassDevelopment") pursuant to a Loan and Trust Agreement between MassDevelopment and PCER. Neither the Building Authority, the University nor UMass Boston have pledged revenues to secure the payment of the Series 2016 bonds or have any obligation with respect to payment of the Series 2016 bonds.

Pursuant to a Dining Facility Sublease dated November 8, 2016 between PCER, as sub-lessor and the Building Authority, as sub-lessee, PCER leased the dining facility, located within the Boston Project, to the Building Authority and the Building Authority shall operate or cause to be operated the dining facility. The University funded the construction costs of the dining facility through debt issued by the Building Authority. This lease only relates to the operations and maintenance of the dining facility. The annual rent payable to PCER by the Building Authority is \$1.00.

On November 14, 2018, the Building Authority entered into an agreement whereby sub-leased land on the University of Massachusetts Dartmouth campus to Provident Commonwealth Educational Resources II, Inc. (PCER II), a Massachusetts not-for-profit corporation, for a term of 45 years. The land is ground-leased to the Building Authority by the Commonwealth. PCER II has engaged a contractor to construct a 1,210-bed student housing facility on the site (the "Dartmouth Project"). The Dartmouth Project reverts to the Building Authority when the lease terminates. Commencing approximately one year following the completion of the project, the annual rental amount received by the Building Authority under the ground lease will be \$625.0 thousand, increasing by 3% every five years. The first ground lease payment is anticipated to be received in fiscal 2021.

The Dartmouth Project was financed with \$132.2 million of revenue bonds issued on November 14, 2018 (Series 2018 Bonds) by MassDevelopment pursuant to a Loan and Trust Agreement between MassDevelopment and PCER II. Neither the Building Authority, the University nor UMass Dartmouth have pledged revenues to secure the payment of the Series 2018 bonds or have any obligation with respect to payment of the Series 2018 bonds.

Pursuant to a Dining Facility Sublease dated November 13, 2018 between PCER II, as sub-lessor and the Building Authority, as sub-lessee, PCER II leased the dining facility, located within the Dartmouth Project, to the Building Authority and the Building Authority shall operate or cause to be operated the dining facility. The University funded the construction costs of the dining facility through debt issued by the Building Authority. This lease only relates to the operations and maintenance of the dining facility. The annual rent payable to PCER II by the Building Authority is \$1.00.

Management evaluated the applicability of relevant GASB guidance (including GASB 14, *The Financial Reporting Entity*, GASB 39, *Determining Whether Certain Organizations Are Component Units*, GASB 60, *Accounting for Financial Reporting for Service Concession Arrangements*, and GASB 61, *The Financial Reporting Entity: Omnibus*) against the underlying Boston and Dartmouth Project agreements and indentures and has concluded that the associated debt should not be recognized on the financial statements of the Building Authority.

Capital leases

On October 27, 2009, the Building Authority entered into an agreement to lease its facility located on Morrissey Boulevard in Dorchester, Massachusetts to the Edward M. Kennedy Institute for the United States Senate ("EMKI"), a charitable corporation registered in the District of Columbia. The lease agreement provides for an initial term of ninety-nine years commencing in October 2009, and thereafter, at the option of EMKI, may be extended for two additional, nine year periods.

The project was financed with \$74.4 million of revenue bonds. Rent is equal to the debt service on the outstanding bonds and payable semi-annually through fiscal 2043.

On October 27, 2009, the Building Authority also entered into an agreement whereby the Building Authority sub-leased land, ground-leased to the Building Authority by the Commonwealth, to EMKI. The sublease agreement provides for an initial term of ninety-nine years commencing in October 2009, and thereafter, at the option of EMKI, may be extended for two additional,

ninety-nine year periods. At the time of signing, the Building Authority received payment of \$10.0 thousand in full payment of rent due for the initial term of the sublease.

Other leases

The Building Authority has executed long-term leases with the Commonwealth, acting by and through the Trustees of the Building Authority, covering the land on which facilities owned by the Building Authority are located on the University's campuses. These leases call for nominal annual payments to the Commonwealth. Certain of these leases renew automatically for subsequent five or ten year periods unless the Building Authority notifies the University that it does not wish to renew. Other leases require the Building Authority to notify the University of its desire to renew. As of June 30, 2019, all leases with the Commonwealth were in good standing and any leases requiring action by the Building Authority during the year to facilitate their renewal were properly renewed.

As provided in the Enabling Act, each of the above-referenced leases also terminates when the Building Authority no longer has any bonds outstanding, at which time all Building Authority property becomes the property of the Commonwealth.

On April 1, 2014, the Building Authority entered into a lease, as lessee, with Massachusetts Mutual Life Insurance Company, as lessor, for space at Tower Square, 1500 Main Street, Springfield, Massachusetts. The initial lease began August 1, 2014 and ends July 31, 2019. In fiscal 2019, the Building Authority exercised its option to extend the lease for a period of five years. The lease now ends on July 31, 2024. Annual rent payments range from \$297.0 thousand to \$320.0 thousand. The Building Authority subleases the space to the University to be used as classroom space for its Springfield Satellite campus.

On July 17, 2014, the Building Authority entered into a lease, as lessee, with One Beacon Street Limited Partnership, as lessor, for space at One Beacon Street, Boston, Massachusetts. The lease ends December 31, 2030. Annual rent payments range from \$2.1 million to \$2.6 million. The Building Authority subleases office and classroom space at One Beacon Street to the University.

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, 2019 (\$ in thousands):

Fiscal year end	Lessor (minimum lease payments to receive)				Lessee (minimum lease payments to pay)
	Direct financing lease	Operating leases		Total	
		PPPs	Other		
2020	\$ 5,355	\$ 1,025	\$ 12,376	\$ 18,756	\$ 26,606
2021	5,368	1,338	12,348	19,054	25,117
2022	5,374	1,650	11,628	18,652	19,449
2023	5,375	1,650	9,758	16,783	18,362
2024	3,478	1,650	9,009	14,137	16,970
2025-2029	25,858	8,316	34,428	68,602	87,708
2030-2034	25,686	8,411	27,970	62,067	50,537
2035-2039	26,145	8,510	5,870	40,525	850
2040-2044	11,997	8,611	-	20,608	-
2045-2049	-	8,716	-	8,716	-
2050-2054	-	8,824	-	8,824	-
2055-2059	-	6,202	-	6,202	-
2060-2064	-	3,396	-	3,396	-
Total payments	\$ 114,636	\$ 68,299	\$ 123,387	\$ 306,322	\$ 245,599
Less amounts representing interest:	(36,014)				
Net investment in direct financing lease	\$ 78,622				

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 \$34.6 million and \$27.1 million for the years ended June 30, 2019 and 2018, 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, 2019 and 2018, the amount reported as rental income was \$25.2 million and \$24.5 million, respectively.

9. Long-Term Debt

The following table represents the outstanding long-term debt as of June 30, 2019, and the related activity during the fiscal year (\$ in thousands):

	Original borrowing	Maturity date	Interest rate	As of June 30, 2018	Additions	Reductions	As of June 30, 2019
Building authority							
Series 2008-A	\$ 26,580	2038	variable	\$ 18,150	\$ -	\$ (1,030)	\$ 17,120
Series 2008-1	232,545	2038	variable	163,115	-	(8,635)	154,480
Series 2009-1	247,810	2039	3.0-5.0%	15,285	-	(15,285)	-
Series 2009-2	271,855	2039	6.4-6.6%	271,855	-	(254,910)	16,945
Series 2009-3	28,570	2039	5.8-6.2%	25,100	-	(620)	24,480
Series 2010-1	118,985	2020	5.0%	45,485	-	(14,430)	31,055
Series 2010-2	430,320	2040	3.8-5.5%	430,320	-	-	430,320
Series 2010-3	3,005	2040	5.8%	2,675	-	(60)	2,615
Series 2011-1	135,040	2034	variable	124,990	-	(1,450)	123,540
Series 2011-2	101,700	2034	variable	95,055	-	(1,100)	93,955
Series 2013-1	212,585	2043	2.0-5.0%	193,745	-	(5,070)	188,675
Series 2013-2	71,970	2043	0.4-2.7%	62,825	-	(2,295)	60,530
Series 2013-3	24,640	2043	4.0-5.0%	24,640	-	(400)	24,240
Series 2014-1	293,890	2044	3.0-5.0%	292,490	-	(600)	291,890
Series 2014-2	14,085	2019	0.4-2.1%	5,750	-	(2,845)	2,905
Series 2014-3	67,635	2029	2.0-5.0%	58,160	-	(3,605)	54,555
Series 2014-4	157,855	2025	0.2-3.4%	92,095	-	(30,495)	61,600
Series 2015-1	298,795	2036	4.0-5.0%	298,795	-	-	298,795
Series 2015-2	191,825	2036	3.0-5.0%	189,000	-	(2,925)	186,075
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	-	(1,445)	18,065
Series 2017-3	35,945	2038	3.0-5.0%	184,760	-	(5,815)	178,945
Series 2018-1	37,650	2043	2.0-2.9%	37,650	-	-	37,650
Series 2019-1	208,725	2039	5.0%	-	208,725	-	208,725
Unamortized bond premium				150,699	47,633	(14,160)	184,172
				2,967,279	256,358	(367,175)	2,856,462
MHEFA/MDFA							
Series A	20,000	2030	variable	20,000	-	-	20,000
Series 2011	29,970	2034	2.5-4.0%	24,880	-	(1,085)	23,795
Unamortized bond premium				817	-	(25)	792
				45,697	-	(1,110)	44,587
WCCC MHEFA/MDFA							
Series 2005-D	99,325	2029	5.0-5.3%	615	-	(120)	495
Series 2011	10,495	2023	2.0-5.0%	5,860	-	(865)	4,995
Unamortized bond premium				526	-	(98)	428
				7,001	-	(1,083)	5,918
MDFA							
Clean renewable energy bonds	1,625	2027	3.50%	860	-	(95)	765
Total bonds payable				3,020,837	256,358	(369,463)	2,907,732
Notes and commercial paper				65,969	69,061	(2,220)	132,810
Capital lease obligations				2,262	255	(681)	1,836
Total long-term debt				\$ 3,089,068	\$ 325,674	\$ (372,364)	\$ 3,042,378

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

	As of June 30, 2017	Additions	Reductions	As of June 30, 2018
Building authority				
Series 2008-A	\$ 19,145	\$ -	\$ (995)	\$ 18,150
Series 2008-1	171,430	-	(8,315)	163,115
Series 2008-2	3,065	-	(3,065)	-
Series 2009-1	28,400	-	(13,115)	15,285
Series 2009-2	271,855	-	-	271,855
Series 2009-3	25,685	-	(585)	25,100
Series 2010-1	59,230	-	(13,745)	45,485
Series 2010-2	430,320	-	-	430,320
Series 2010-3	2,730	-	(55)	2,675
Series 2011-1	126,540	-	(1,550)	124,990
Series 2011-2	96,115	-	(1,060)	95,055
Series 2013-1	198,655	-	(4,910)	193,745
Series 2013-2	65,090	-	(2,265)	62,825
Series 2013-3	24,640	-	-	24,640
Series 2014-1	293,015	-	(525)	292,490
Series 2014-2	8,555	-	(2,805)	5,750
Series 2014-3	61,640	-	(3,480)	58,160
Series 2014-4	122,125	-	(30,030)	92,095
Series 2015-1	298,795	-	-	298,795
Series 2015-2	191,825	-	(2,825)	189,000
Series 2017-1	165,130	-	-	165,130
Series 2017-2	19,510	-	-	19,510
Series 2017-3	187,680	-	(2,920)	184,760
Series 2018-1	-	37,650	-	37,650
Unamortized bond premium	164,887	-	(14,188)	150,699
	3,036,062	37,650	(106,433)	2,967,279
MHEFA/MDFA				
2000 Series A	20,000	-	-	20,000
Series 2011	25,925	-	(1,045)	24,880
Unamortized bond premium	870	-	(53)	817
	46,795	-	(1,098)	45,697
WCCC MHEFA/MDFA				
Series 2005-D	715	-	(100)	615
Series 2011	6,690	-	(830)	5,860
Unamortized bond premium	624	-	(98)	526
	8,029	-	(1,028)	7,001
MDFA				
Clean renewable energy bonds	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

Pledged Revenues – The University is obligated under its contracts for financial assistance, management and services with the Building Authority to collect rates, rents, fees and other charges with respect to such facilities sufficient to pay principal and interest on the Building Authority's bonds and certain other costs such as insurance on such facilities.

The University's spendable cash and investments secures the obligations of the University with respect to the MHEFA/MDFA Series A Bonds. The University is required to certify annually that there are sufficient funds in the spendable cash and investments to cover the debt service on the Series A Bonds.

Principal and Interest – Principal and interest, which is estimated using rates in effect at June 30, 2019, on long-term debt for the next five fiscal years and in subsequent five-year periods are as follows (\$ in thousands):

Fiscal year	Bonds			Direct placement bonds		Total
	Principal	Interest	Interest subsidy*	Principal	Interest	
2020	\$ 103,931	\$ 121,167	\$ (7,555)	\$ -	\$ 766	\$ 218,309
2021	107,865	117,154	(7,567)	-	763	218,215
2022	100,356	113,035	(7,463)	-	763	206,691
2023	104,641	108,913	(7,247)	-	763	207,070
2024	107,506	104,769	(7,015)	1,655	754	207,669
2025–2029	502,766	459,783	(30,829)	8,565	3,493	943,778
2030–2034	452,745	346,676	(22,396)	8,530	3,500	789,055
2035–2039	558,820	229,429	(11,373)	9,880	2,142	788,898
2040–2044	494,805	90,149	(1,029)	9,020	592	593,537
2045–2049	151,255	10,623	-	-	-	161,878
Total	\$ 2,684,690	\$ 1,701,698	\$ (102,474)	\$ 37,650	\$ 13,536	\$ 4,335,100

* These interest rate subsidies are provided by the United States Government related to the Authority's issuance of bonds under the Build America Bond ("BAB") program. Under the BAB program, the Government provides a direct subsidy of the interest rate paid to bondholders up to 35%. The Authority's November 1, 2018, and May 1, 2019 subsidy payments related to the Senior Series 2009-2 Project Revenue Build America Bonds and the Senior Series 2010-2 Project Revenue Build America Bonds were 32.7% and 32.8%, respectively. For Fiscal Year 2020 through Fiscal Year 2041, the estimated subsidy reflected in the table above is 32.9%.

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 the bonds will be remarketed within a reasonable period of time.

The University has standby purchase agreements with Barclays Bank PLC (Barclays) for the 2008-1 and 2008-A bonds which requires Barclays to purchase bonds that are tendered and not remarketed. These agreements were extended until July 6, 2022. Fees incurred under the agreements related to the bonds totaled \$583.0 thousand and \$657.6 thousand for the years ended June 30, 2019 and 2018, respectively.

The University has standby purchase agreement with Wells Fargo Bank, N.A. (Wells) for the 2011-1 bonds which requires Wells to purchase bonds that are tendered and not remarketed. This agreement was extended until July 6, 2022. Fees incurred under the agreements related to the bonds totaled \$425.7 thousand and \$434.4 thousand for the years ended June 30, 2019 and 2018, respectively.

On June 27, 2018, the Authority issued \$37.7 million of direct placement bonds. The annual principal and interest payments of this outstanding debt is disclosed above.

Bond Premium – During the year ended June 30, 2019, premiums received totaled \$47.6 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.

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, 2022.

During the fiscal year 2019 and 2018, the Building Authority issued \$69.1 million and \$64.5 million of commercial paper, respectively. As of June 30, 2019 and 2018, the Building Authority had an outstanding balance commercial paper of \$131.9 million and \$64.5 million, respectively. The Building Authority incurred total fees of \$0.7 million and \$0.7 million for the years ending

June 30, 2019 and 2018, respectively, associated with the use of commercial paper.

Bond Refundings – There was no refunding of bonds in the year ended June 30, 2018. During the year ended June 30, 2019, the Building Authority issued \$208.7 million of Refunding Revenue Senior Series 2019-1 Bonds which partially refunded the 2009-2 Senior Series Building America Bonds. There was no loss or gain on the refunding.

For the years ended June 30, 2019 and 2018, the amortization of the loss on debt refundings totaled \$5.3 million, which increases interest expense.

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.

The Building Authority's interest rate swap liabilities at June 30, 2019 and 2018 are as follows (\$ in thousands):



	Notional value	As of June 30, 2018	Net change	As of June 30, 2019	Effective date	Term date	Authority pays	Authority receives
Series 2008-1	\$ 154,480	\$ 16,577	\$ 6,732	\$ 23,309	05/01/08	05/01/38	3.39%	70% of 1-Month LIBOR
Series 2008-A	17,120	1,931	789	2,720	11/13/08	05/01/38	3.38%	70% of 1-Month LIBOR
Series 2011	217,495	23,094	6,499	29,593	04/20/06	11/01/34	3.48%	60% of 3-Month LIBOR + .18%
Total		\$ 41,602	\$ 14,020	\$ 55,622				

Swap Payments and Associated Debt – Using rates as of June 30, 2019, 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
2020	\$ 12,720	\$ 7,388	\$ 7,060	\$ 27,168
2021	28,390	7,000	6,692	42,082
2022	29,545	6,453	6,163	42,161
2023	33,915	5,855	5,583	45,353
2024	35,200	5,204	4,950	45,354
2025–2029	149,550	17,326	16,392	183,268
2030–2034	90,205	4,974	4,660	99,839
2035–2039	9,570	215	198	9,983
Total	\$ 389,095	\$ 54,415	\$ 51,698	\$ 495,208

10. Other Liabilities

During the year ended June 30, 2019, the following changes occurred in other liabilities as recorded in the Statements of Net Position (\$ in thousands):

	As of June 30, 2018	Additions	Reductions	As of June 30, 2019	Due in one year
Compensated absences	\$ 108,305	\$ 6,212	\$ (7,119)	\$ 107,398	\$ 81,155
Workers' compensation	14,769	80	(999)	13,850	2,882
Unearned revenues	146,024	69,875	(127,036)	88,863	54,946
Advances and deposits	34,289	7,056	(7,210)	34,135	6,394
Other liabilities	168,672	75,228	(96,028)	147,872	70,458
Total	\$ 472,059	\$ 158,451	\$ (238,392)	\$ 392,118	\$ 215,835

	As of June 30, 2017	Additions	Reductions	As of June 30, 2018	Due in one year
Compensated absences	\$ 111,752	\$ 4,192	\$ (7,639)	\$ 108,305	\$ 76,749
Workers' compensation	14,586	841	(658)	14,769	3,225
Unearned revenues	76,725	126,581	(57,282)	146,024	52,884
Advances and deposits	36,480	6,929	(9,120)	34,289	6,439
Other liabilities	136,374	94,077	(61,779)	168,672	94,077
Total	\$ 375,917	\$ 232,620	\$ (136,478)	\$ 472,059	\$ 233,374

The University includes compensated absences and workers' compensation short-term liabilities within accounts payable and accrued expenses on the Statements of Net Position.



11. Fringe Benefits

During the years ended June 30, 2019 and 2018, the Commonwealth paid \$383.6 million and \$358.1 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 \$149.1 million and \$134.1 million during the years ended June 30, 2019 and 2018, respectively. The remaining portion is included in revenue as state appropriations.

12. Benefit Plans

Defined benefit plan

The Massachusetts State Employees' Retirement System (MSERS) is a public employee retirement system (PERS) that administers a cost-sharing multi-employer defined benefit plan 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 to five-year average annual rate of regular compensation depending on the date of hire. 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 were 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 \$125.5 million and \$107.4 million for the years ended June 30, 2019 and 2018, respectively. Annual covered payroll was 77.4% and 75.9% of annual total payroll for the University for the years ended June 30, 2019 and 2018, respectively.

Pension Liabilities, Pension Expense, and Deferred Outflows of Resources and Deferred Inflows of Resources Related to Pensions

– The net pension liability as of June 30, 2019 was determined based on a measurement date of June 30, 2018 from an actuarial valuation as of January 1, 2018 rolled forward to June 30, 2018. The net pension liability measured 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 pension liability between the measurement date and the reporting date, other than typical plan experience.

At June 30, 2019 and 2018, the University reported a liability of \$409.3 million and \$420.2 million, respectively, for its proportionate share of MSERS 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 University's proportion of the pension plan at measurement dates of June 30, 2018 and 2017 was 3.09% and 3.28%, respectively.

For the fiscal years ended June 30, 2019 and 2018, the University recognized pension expense of \$52.2 million and \$58.5 million, respectively.

The University reported its proportionate share of MSERS deferred outflows of resources and deferred inflows of resources related to pensions from the following sources as of June 30, 2019 and 2018 (\$ in thousands):

	2019		2018	
	Deferred outflows of resources	Deferred inflows of resources	Deferred outflows of resources	Deferred inflows of resources
Changes of assumptions	\$ 41,482	\$ -	\$ 43,732	\$ -
Changes in proportion due to internal allocation	22,245	37,534	36,532	28,949
Employer contributions after measurement date	35,843	-	28,292	-
Differences between expected and actual experience	12,980	8,342	16,248	11,434
Net difference between projected and actual investment earnings on pension plan investments	-	14,228	-	5,007
Changes in proportion from Commonwealth	1,104	78	1,440	150
Total	\$ 113,654	\$ 60,182	\$ 126,244	\$ 45,540

Amounts reported as deferred outflows of resources relating to pension resulting from the University's contributions subsequent to the measurement date will be recognized as a reduction to pension expense in the net pension liability in the year 2020. Other amounts are reported as follows:

Year ended June 30	
2020	\$ 22,405
2021	8,482
2022	(9,190)
2023	(2,483)
2024	(1,585)
Total	\$ 17,629

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

	June 30, 2018	June 30, 2017
Investment rate of return	7.35%	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-2014 Blue Collar Employees Scale MP-2016
Post-retirement	RP-2014 Blue Collar Healthy Annuitant Scale MP-2016	RP-2014 Blue Collar Healthy Annuitant Scale MP-2016
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

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, 2018 and 2017 are summarized in the following table:

Asset class	June 30, 2018		June 30, 2017	
	Target allocation	Long-term expected real rate of return	Target allocation	Long-term expected real rate of return
Global equity	39.00%	5.00%	40.00%	5.00%
Portfolio completion strategies	13.00%	3.70%	13.00%	3.60%
Core fixed income	12.00%	0.90%	12.00%	1.10%
Private equity	12.00%	6.60%	11.00%	6.60%
Real estate	10.00%	3.80%	10.00%	3.60%
Value added fixed income	10.00%	3.80%	10.00%	3.80%
Timber / natural resources	4.00%	3.40%	4.00%	3.20%
Total	100.00%		100.00%	

Discount Rate – The discount rate used to measure the total pension liability was 7.35% and 7.50% at June 30, 2018 and 2017, respectively. 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 of a 1% change in the discount rate for the net pension liability at June 30, 2019 (\$ in thousands):

Fiscal year ended	1% Decrease	Discount rate	1% Increase
June 30, 2019	\$ 551,694	\$ 409,319	\$ 287,666
June 30, 2018	\$ 572,341	\$ 420,234	\$ 297,708

Defined contribution plan

Non-vested faculty and certain other employees of the University can opt out of MSERS and participate in a defined contribution plan, the Optional Retirement Plan (ORP), administered by the Commonwealth's Department of Higher Education. As of June 30, 2019 and 2018, there were 2,011 and 1,916 participants in the ORP, respectively. Employees contribute at the same rate as members in MSERS and the Commonwealth matches 5% of employee contributions. The Commonwealth contributed \$7.8 million and \$7.2 million in 2019 and 2018, respectively. University employees contributed \$18.8 million and \$17.4 million in 2019 and 2018, 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 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 4.3%. As of June 30, 2019 and 2018, the plan assets of the Gap Plan were \$4.7 million and \$3.4 million, respectively.

13. Other Postemployment Benefits

The Commonwealth administers the State Retirees' Benefit Trust, 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 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, 2019 and 2018, the retirees' share of premium costs is between 0% – 20%, depending on the date of hire.

OPEB Liabilities, OPEB Expense, and Deferred Outflows of Resources and Deferred Inflows of Resources Related to OPEB – The total OPEB liability as of June 30, 2019 was determined based on a measurement date of June 30, 2018 from an actuarial valuation as of January 1, 2018 rolled forward to June 30, 2018. 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 OPEB liability between the measurement date and the reporting date, other than typical plan experience.

As of June 30, 2019 and 2018, the University reported a liability of \$719.0 million and \$817.4 million, respectively, for its proportionate share of the OPEB liability. The University's proportion of the OPEB liability was based on a projection of the University's long-term share of contributions to the OPEB plan relative to the total projected contributions of all participating entities. The University's proportion of the OPEB plan at the measurement dates of June 30, 2018 and 2017 was 4.82% and 4.67%, respectively.

For the fiscal years ended June 30, 2019 and 2018, the University recognized OPEB expense of \$44.6 million and \$70.0 million, respectively.

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, 2019 (\$ in thousands):

	2019		2018	
	Deferred outflows of resources	Deferred inflows of resources	Deferred outflows of resources	Deferred inflows of resources
Changes of assumptions	\$ -	\$ 220,894	\$ -	\$ 92,574
Changes in proportion due to internal allocation	100,687	-	98,629	-
Employer contributions after measurement date	26,137	-	21,421	-
Differences between expected and actual experience	8,732	1,535	-	1,880
Net difference between projected and actual investment earnings on OPEB plan investments	-	1,795	-	1,491
Changes in proportion from Commonwealth	2,310	-	1,711	-
Total	\$ 137,866	\$ 224,224	\$ 121,761	\$ 95,945

Amounts reported as deferred outflows of resources relating to OPEB resulting from the University's contributions subsequent to the measurement date will be recognized as a reduction to OPEB expense in the net OPEB liability in the year 2020. Other amounts are reported as follows:

Year ended June 30	
2020	\$ (28,805)
2021	(28,805)
2022	(28,805)
2023	(24,148)
2024	(1,932)
	\$ (112,495)

Actuarial Assumptions – Significant actuarial assumptions used at the 2018 measurement date are as follows:

Long-term rate of return on investment	7.35%	
Annual healthcare cost trend rates		
Medical	8.0% decreasing by 0.5% each year to an ultimate rate of 5.5% in 2023 and then decreasing 0.25% each year to an ultimate rate of 5.0% in 2025 for medical and 5.0% for administration costs	
Employer group waiver program	5.0%	
Administrative costs	5.0%	
Mortality rates	RP-2014 Blue Collar Employees projected with Scale MP-2016	
Participation rates	<p>100% of all retirees who currently have health care coverage will continue the same coverage, except the following:</p> <ul style="list-style-type: none"> • retirees under the age of 65 with POS/PPO coverage switch to Indemnity at age 65 • retirees over the age of 65 with POS/PPO coverage switched to HMO <p>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 55 or later</p> <p>Actives, upon retirement, take coverage, and are assumed to have the following coverage:</p>	
	Retirement age under 65	Retirement age over 65
Indemnity	40.0%	85.0%
POS/PPO	50.0%	0.0%
HMO	10.0%	15.0%

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

Long-term rate of return on investment	7.50%	
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	<p>100% of all retirees who currently have health care coverage will continue the same coverage, except the following:</p> <ul style="list-style-type: none"> • retirees under the age of 65 with POS/PPO coverage switch to Indemnity at age 65 • retirees over the age of 65 with POS/PPO coverage switched to HMO <p>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</p> <p>Actives, upon retirement, take coverage, and are assumed to have the following coverage:</p>	
	Retirement age under 65	Retirement age 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, 2018 and 2017 are summarized in the following table:

Asset class	June 30, 2018		June 30, 2017	
	Target allocation	Long-term expected real rate of return	Target allocation	Long-term expected real rate of return
Global equity	39.00%	5.00%	40.00%	5.00%
Portfolio completion strategies	13.00%	3.70%	13.00%	3.60%
Core fixed income	12.00%	0.90%	12.00%	1.10%
Private equity	12.00%	6.60%	11.00%	6.60%
Real estate	10.00%	3.80%	10.00%	3.60%
Value added fixed income	10.00%	3.80%	10.00%	3.80%
Timber / natural resources	4.00%	3.40%	4.00%	3.20%
Total	100.00%		100.00%	

Discount Rate – The discount rates used to measure the total OPEB liability as of June 30, 2018 and 2017 were 3.95% and 3.63%, respectively. These rates were based on a blend of the Bond Buyer Index rates of 3.87% and 3.58%, respectively, as of the measurement dates June 30, 2018 and 2017 and the long term rate of return on Plan investments of 7.35% and 7.50%, respectively. 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 2025. Therefore, the long-term expected rate of return on plan investments was not applied to all periods of projected benefit payments to determine the total OPEB liability as of June 30, 2018 and 2017.

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, 2018	\$ 848,963	\$ 718,955	\$ 615,016
June 30, 2017	\$ 970,268	\$ 817,357	\$ 695,781

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, 2018	\$ 597,328	\$ 718,955	\$ 877,734
June 30, 2017	\$ 676,259	\$ 817,357	\$ 1,003,033

14. Operating Expenses and Interest

The following table summarizes the University's operating expenses and interest by natural and functional classification for the year ended June 30, 2019 (\$ in thousands):

	Compensation and benefits	Supplies and services	Scholarships and fellowships	Depreciation and amortization	Interest	Total
Educational and general						
Instruction	\$ 775,540	\$ 125,695	\$ -	\$ -	\$ -	\$ 901,235
Research	282,040	205,685	-	-	-	487,725
Public service	67,908	15,658	-	-	-	83,566
Academic support	134,698	49,764	-	-	-	184,462
Student services	119,166	39,825	-	-	-	158,991
Institutional support	182,074	87,052	-	-	-	269,126
Operation and maintenance of plant	119,969	126,756	-	-	-	246,725
Depreciation and amortization	-	-	-	276,638	-	276,638
Scholarships and fellowships	-	-	49,509	-	-	49,509
Auxiliary enterprises	154,468	183,739	-	-	-	338,207
Other expenditures						
Independent operations	24,407	23,378	-	-	-	47,785
Public service activities	84,774	142,047	-	-	-	226,821
Total operating expenses	1,945,044	999,599	49,509	276,638	-	3,270,790
Interest on indebtedness	-	-	-	-	116,217	116,217
Total operating expenses and interest	\$ 1,945,044	\$ 999,599	\$ 49,509	\$ 276,638	\$ 116,217	\$ 3,387,007

The following table summarizes the University's operating expenses and interest 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	\$ 758,474	\$ 117,761	\$ -	\$ -	\$ -	\$ 876,235
Research	281,811	189,324	-	-	-	471,135
Public service	64,329	13,909	-	-	-	78,238
Academic support	134,392	53,103	-	-	-	187,495
Student services	119,603	37,331	-	-	-	156,934
Institutional support	185,471	86,064	-	-	-	271,535
Operation and maintenance of plant	124,842	130,983	-	-	-	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	82,927	242,289	-	-	-	325,216
Total operating expenses	1,923,326	1,065,239	50,410	261,417	-	3,300,392
Interest on indebtedness	-	-	-	-	115,851	115,851
Total operating expenses and interest	\$ 1,923,326	\$ 1,065,239	\$ 50,410	\$ 261,417	\$ 115,851	\$ 3,416,243

15. Unrestricted Net Position

The University adopted a reserve policy and standards in fiscal year 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 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, 2019 and 2018 (\$ in thousands):

	2019	2018
Unrestricted resources		
Unexpended plant and facilities	\$ 255,308	\$ 267,319
Auxiliary enterprises	100,154	91,539
Education and general	309,452	244,472
Quasi-endowment	352,743	280,517
Stabilization	114,594	109,168
Other unrestricted	(46,700)	(12,024)
Subtotal	1,085,551	980,991
Unfunded portion of pension liabilities	(355,847)	(339,530)
Unfunded portion of postretirement benefits other than pension liabilities	(805,313)	(791,541)
Total unrestricted net position	\$ (75,609)	\$ (150,080)

16. Commitments and Contingencies

The Building Authority, University, and WCCC have outstanding purchase commitments under construction contracts and real estate agreements of \$200.0 million and \$120.7 million at June 30, 2019 and 2018, respectively. The University has entered an Energy Performance Contract that is being managed by the Commonwealth's Division of Capital Asset Management and Maintenance (DCAMM) under its Clean Energy Investment Program. This project includes 32 energy conservation measures. The University has a commitment to the Commonwealth for Clean Energy Investment Program Funds used through June 30, 2019 and 2018 of \$43.3 million and \$26.1 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 \$13.9 million and \$14.8 million as of June 30, 2019 and 2018, respectively. Estimated future payments related to such costs have been discounted at a rate of 4%. Refer to Note 10 for further information on worker's compensation balances year over year.

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. Blended Component Units

Condensed information for the University's blended component units, the Building Authority and WCCC, is presented in the table below for the year ended June 30, 2019 (\$ in thousands):

	June 30, 2019			
	Building authority	Eliminations	WCCC	Eliminations
Condensed information from the Statements of Net Position				
Capital assets, net	\$ 3,671,005	\$ -	\$ 332,002	\$ -
Other assets	624,776	(52,289)	96,219	(1,732)
Deferred outflows	95,954	-	7,429	-
Total assets and deferred outflows	4,391,735	(52,289)	435,650	(1,732)
Debt, including commercial paper	2,988,872	(3,667)	38,472	-
Other liabilities	168,398	(2,010)	230,137	(1,732)
Total liabilities	3,157,270	(5,677)	268,609	(1,732)
Total net position	\$ 1,234,465	\$ (46,612)	\$ 167,041	\$ -
Condensed information from the Statements of Revenues, Expenses, and Changes in Net Position				
Other revenues	\$ 281,311	\$ (227,997)	\$ 82,675	\$ (52,597)
Total revenues	281,311	(227,997)	82,675	(52,597)
Operation and maintenance of capital assets	8,600	(7,439)	28,871	(23,941)
Depreciation	140,771	-	19,857	-
Interest expense	118,213	(220,558)	7,866	-
Other expenses	3,875	-	17,514	(28,656)
Total expenses	271,459	(227,997)	74,108	(52,597)
Increase in net position	\$ 9,852	\$ -	\$ 8,567	\$ -
Condensed information from the Statements of Cash Flows				
Net cash provided by operating activities	\$ 201,430	\$ -	\$ 22,340	\$ -
Net cash provided by (used in) investing activities	7,849	-	(11,733)	-
Net cash provided by (used in) financing activities	(299,183)	-	(10,270)	-
Change in cash and cash equivalents	\$ (89,904)	\$ -	\$ 337	\$ -

The UMass Amherst Foundation is not material in relation to the other blended component units nor the University as a whole and is therefore not presented in the above condensed information.

18. Discretely Presented Component Units

As noted in Note 1, UMF and UMDF are discretely presented component units. These Foundations are presented in the aggregate on page 20 of these financial statements. Following is information on investments at UMF, as this disclosure is not included in its entirety elsewhere in these financial statements. UMF's investment portfolio represents approximately 99.8% of the aggregate discretely presented component units. This note does not include investment information for UMDF given the immaterial nature of UMDF's balances and activities.

Investments – Investments in debt and equity securities are measured at fair value primarily based on quoted market prices. Changes in fair value are recorded as unrealized gains or losses on investments. Purchases and sales of investments are recorded as of the trade date. Other investments for which no such quotation or valuations are readily available (alternative investments) are carried at net asset value as a practical expedient to fair value. The estimated fair value of these investments is based on valuations provided by the external investment managers and reviewed by management. Because these investments are not readily marketable, their estimated value is subject to uncertainty and therefore may differ from the value that would

have been used had a ready market for such investment existed. Such differences could be material. Investments contributed to UMF are recorded at fair value on the date of the gift.

UMF utilizes the pooled investment concept whereby all invested funds are included in one investment pool, except for investments of certain funds that are otherwise restricted. Additions, redemptions and transfers to pooled investment funds are assigned a number of shares based upon their fair value at the date of receipt from the pool. On a monthly basis, investment income and capital gains are distributed among unit holders of each pooled investment fund based upon their respective shares held.

Custodial Credit Risk – UMF maintains depository, payroll, disbursement, receipt, and imprest accounts. In addition to bank account deposits, UMF 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.

Concentration of Credit Risk – As of June 30, 2019 and 2018, 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 – UMF's investment policy 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 unrated debt investments at fair value by credit quality of UMF's investment portfolio as of June 30, 2019 (\$ in thousands):

	2019	S&P rating
Debt securities		
U.S. Treasury securities	\$ 38,132	Unrated
Bond fund, including exchange traded funds	1,321	Unrated
Total debt securities	\$ 39,453	

Interest Rate Risk – UMF'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 unrated debt investments of UMF's investment portfolio as of June 30, 2019 (\$ in thousands):

	2019	Investment maturity
Debt securities		
U.S. Treasury securities	\$ 38,132	1 to 5 years
Bond fund, including exchange traded funds	1,321	1 to 5 years
Total debt securities	\$ 39,453	

Fair Value Measurement – 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. UMF 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 UMF'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 UMF'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. UMF'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 UMF'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. UMF'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 UMF's fiscal year end date.

As a practical expedient to estimate the fair value of UMF'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, 2019, UMF had no plans or intentions to sell such investments at amounts different from NAV.

The following table summarizes the fair value of UMF's investments by type as of June 30, 2019 (\$ in thousands):

	Investments measured at NAV	Investments classified in the fair value hierarchy			
		Level 1	Level 2	Level 3	Total
Money market funds	\$ -	\$ 46,570	\$ -	\$ -	\$ 46,570
Debt securities					
U.S. Treasury securities	-	38,132	-	-	38,132
Bond funds, including exchange traded funds	-	1,321	-	-	1,321
Total debt securities	-	39,453	-	-	39,453
Equity securities					
Domestic equities	-	103,697	-	-	103,697
International equities	-	81,527	-	-	81,527
Total equity securities	-	185,224	-	-	185,224
Alternative investments					
Multi-strategy hedge funds					
Equity	95,244	-	-	-	95,244
Long/short	87,152	-	-	-	87,152
Fixed income	39,278	-	-	-	39,278
Absolute return	27,789	-	-	-	27,789
Real assets	8,174	-	-	-	8,174
Private equity	24,511	-	-	-	24,511
Private debt	18,869	-	-	-	18,869
Private real estate	9,967	-	-	-	9,967
Total alternative investments	310,984	-	-	-	310,984
Other securities	-	15,360	-	-	15,360
Total investments	\$ 310,984	\$ 286,607	\$ -	\$ -	\$ 597,591

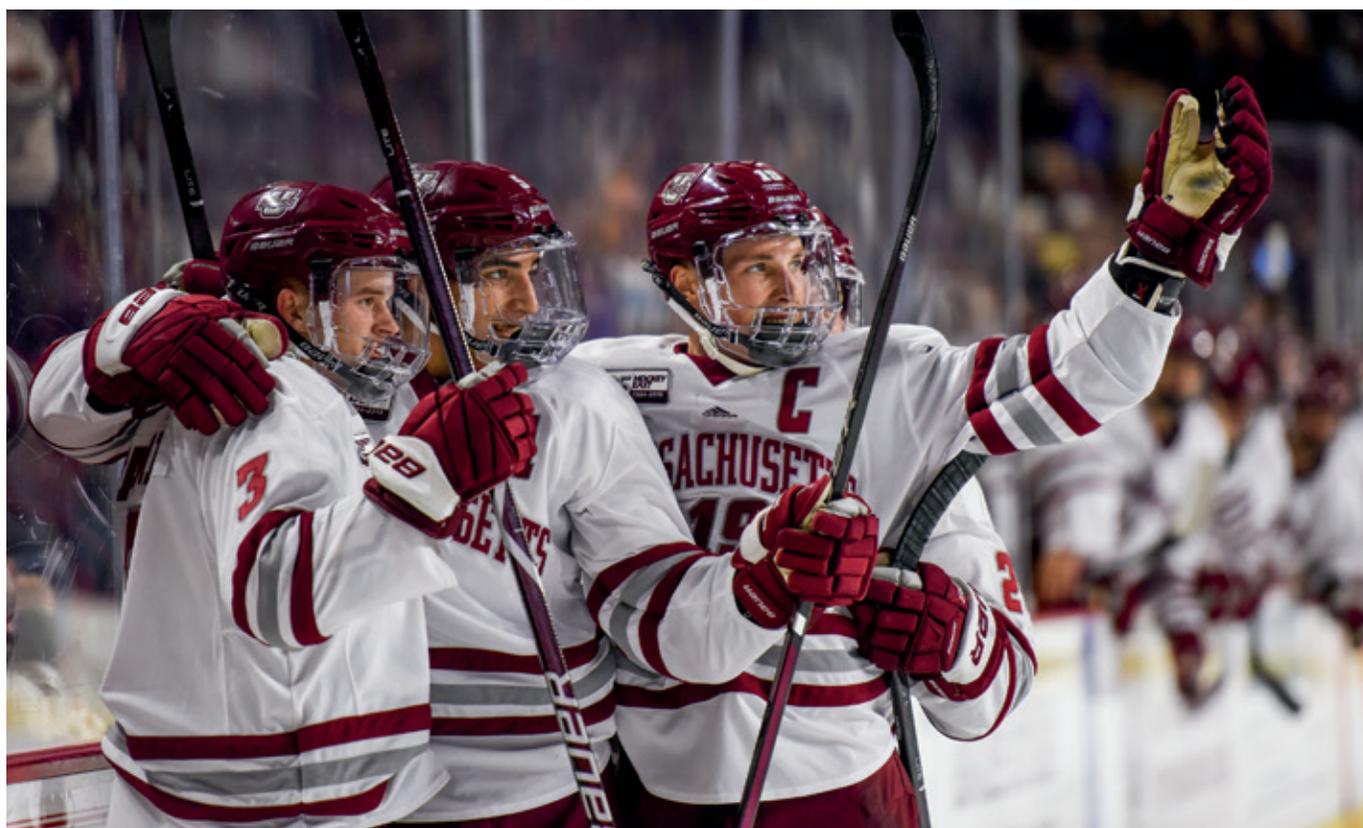
The following table presents unfunded commitments, redemption frequency and notice period for investments that have been valued using NAV as a practical expedient as of June 30, 2019 (\$ in thousands):

	NAV	Unfunded commitments	Redemption terms	Notice period	Redemption restrictions
Alternative investments					
Multi-strategy hedge funds					
Equity	\$ 95,244	\$ -	Daily to quarterly	01–60 days	No lock-up restrictions
Long/short	87,152	10,000	Quarterly to annual	45–80 days	Lock-up provisions range from none to 1 year
Fixed income	39,278	-	Quarterly to annual	30–90 days	Lock-up provisions range from none to 2 years
Absolute return	27,789	-	Daily to annual	45–65 days	No lock-up restrictions
Real assets	8,174	-	Annual	90 days	No lock-up restrictions
Private equity	24,511	19,640	Closed end funds	(1)	Not redeemable
Private debt	18,869	22,177	Closed end funds	(1)	Not redeemable
Private real estate	9,967	3,879	Closed end funds	(1)	Not redeemable
Total	\$ 310,984	\$ 55,696			

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

19. Subsequent Events

For purposes of determining the effects of subsequent events on these financial statements, management has evaluated events subsequent to June 30, 2019 and through December 18, 2019, the date on which the financial statements were available to be issued, and determined that there were no matters requiring recognition or disclosure in 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

	Based on the measurement date				
	6/30/18	6/30/17	6/30/16	6/30/15	6/30/14
University's proportion of the net pension liability	3.09%	3.28%	3.12%	3.59%	3.49%
University's proportionate share of the net pension liability	\$ 409,319	\$ 420,234	\$ 429,871	\$ 408,418	\$ 237,134
University's covered-employee payroll	\$1,242,525	\$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	32.94%	35.96%	37.18%	35.83%	22.35%
Plan fiduciary net position as a percentage of total pension liability	67.91%	67.21%	63.48%	67.87%	76.32%

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

	For the fiscal year ended June 30				
	6/30/19	6/30/18	6/30/17	6/30/16	6/30/15
Contractually required contribution	\$35,843	\$28,292	\$25,618	\$22,386	\$22,463
Contributions in relation to the contractually required contribution	(35,843)	(28,292)	(25,618)	(22,386)	(22,463)
Contribution deficiency (excess)	\$ -	\$ -	\$ -	\$ -	\$ -
University's covered-employee payroll	\$1,247,098	\$1,242,525	\$1,168,661	\$1,156,082	\$1,139,719
Contributions as a percentage of covered-employee payroll	2.87%	2.28%	2.19%	1.94%	1.96%

¹ Until a full ten year trend is compiled, the University is presenting only information for the years for which information is available. See accompanying independent auditor's report.

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

	Based on the measurement date	
	6/30/18	6/30/17
University's proportion of the net OPEB	4.82%	4.67%
University's proportionate share of the net OPEB	\$ 718,955	\$ 817,357
University's covered-employee payroll	\$ 1,242,525	\$ 1,168,661
University's proportionate share of the net OPEB as a percentage of its covered-employee payroll	57.86%	69.94%
Plan fiduciary net position as a percentage of total OPEB liability	7.38%	4.80%

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

	For the fiscal year ended June 30	
	6/30/19	6/30/18
Contractually required contribution	\$ 26,137	\$ 21,421
Contributions in relation to the contractually required contribution	(26,137)	(21,421)
Contribution deficiency (excess)	\$ -	\$ -
University's covered-employee payroll	\$ 1,247,098	\$ 1,242,525
Contributions as a percentage of covered-employee payroll	2.10%	1.72%

¹ Until a full ten year trend is compiled, the University is presenting only information for the years for which information is available. See accompanying independent auditor's report.



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