

In the opinion of McCarter & English, LLP, Bond Counsel, based upon an analysis of existing law, assuming, among other matters, compliance with certain covenants, (i) interest on the Series 2022-1 Bonds is excluded from gross income for federal income tax purposes under the Internal Revenue Code of 1986, as amended, and (ii) interest on the Series 2022-1 Bonds is not a preference item for purposes of the federal individual alternative minimum tax. Interest on the Series 2022-2 Bonds is generally subject to inclusion in federal gross income. Under existing law, interest on the Bonds and any profit on the sale of the Bonds are exempt from Massachusetts personal income taxes and the Bonds are exempt from Massachusetts personal property taxes. Bond Counsel expresses no opinion regarding any other tax consequences related to the ownership or disposition of, or the accrual or receipt of interest on, the Bonds. See “TAX MATTERS” herein.



UNIVERSITY OF MASSACHUSETTS BUILDING AUTHORITY



\$188,650,000

**Project Revenue Bonds
Senior Series 2022-1**

\$211,270,000

**Project Revenue Bonds
Senior Series 2022-2 (Federally Taxable)**

Dated: Date of Initial Delivery

Due: As shown on the inside cover

The Project Revenue Bonds, Senior Series 2022-1 (the “Series 2022-1 Bonds”) and the Project Revenue Bonds, Senior Series 2022-2 (Federally Taxable) (the “Series 2022-2 Bonds,” and together with the Series 2022-1 Bonds, the “Bonds”) will be issued by the University of Massachusetts Building Authority (the “Authority”) as fully registered bonds and will be registered in the name of Cede & Co., as nominee for The Depository Trust Company (“DTC”), New York, New York. Individual purchases of beneficial ownership of the Bonds will be made in book-entry form, in denominations of \$5,000 or any integral multiple thereof. No physical delivery of the Bonds will be made to purchasers. So long as Cede & Co. is the registered owner of the Bonds, principal and semiannual interest are payable to DTC by U.S. Bank Trust Company, National Association, Boston, Massachusetts, as Trustee. See Appendix G - “Book-Entry Only System and Global Clearance Procedures.” Interest on the Bonds will be payable on each May 1 and November 1, commencing November 1, 2022, or, if any such day is not a Business Day, the next Business Day. The Bonds, including the redemption terms of the Bonds, are more fully described herein under “THE BONDS.”

The Bonds are special obligations of the Authority payable solely from funds provided under the Enabling Act (defined herein), the Project Trust Agreement (defined herein), and the Series Resolutions (defined herein), including payments made by the University of Massachusetts (the “University”), all as more fully described under “SECURITY AND SOURCES OF PAYMENT FOR THE BONDS” herein.

THE BONDS SHALL NOT BE DEEMED TO CONSTITUTE A GENERAL OBLIGATION OF THE AUTHORITY OR A DEBT OR LIABILITY OF THE COMMONWEALTH OF MASSACHUSETTS (THE “COMMONWEALTH”) OR ANY POLITICAL SUBDIVISION THEREOF. NEITHER THE FAITH AND CREDIT NOR THE TAXING POWER OF THE COMMONWEALTH OR OF ANY POLITICAL SUBDIVISION THEREOF IS PLEDGED TO THE PAYMENT OF THE PRINCIPAL OF OR THE INTEREST ON THE BONDS. THE ENABLING ACT OF THE AUTHORITY DOES NOT IN ANY WAY CREATE A SO-CALLED MORAL OBLIGATION OF THE COMMONWEALTH OR ANY POLITICAL SUBDIVISION THEREOF TO PAY DEBT SERVICE WITH RESPECT TO THE BONDS. THE AUTHORITY DOES NOT HAVE TAXING POWER.

The Bonds are offered when, as and if issued by the Authority and received by the Underwriters, subject to the approval of legality by McCarter & English, LLP, Boston, Massachusetts, Bond Counsel. Certain legal matters will be passed upon for the Authority and the University by its Disclosure Counsel, Greenberg Traurig, LLP, Boston, Massachusetts, and for the Underwriters by their counsel, Mintz, Levin, Cohn, Ferris, Glovsky and Popeo, P.C., Boston, Massachusetts. Omnicap Group LLC, El Segundo, California, is serving as financial advisor to the Authority. It is expected that the Bonds in definitive form will be available for delivery through DTC in New York, New York on or about March 23, 2022.

Citigroup

BofA Securities

Ramirez & Co., Inc.

UBS

\$188,650,000**University of Massachusetts Building Authority, Project Revenue Bonds
Senior Series 2022-1**

<u>Maturity (November 1)</u>	<u>Principal Amount</u>	<u>Interest Rate</u>	<u>Yield</u>	<u>CUSIP[†]</u>
2023	\$ 960,000	5.00%	1.37%	914440TK8
2024	1,010,000	5.00	1.59	914440TL6
2025	1,065,000	5.00	1.70	914440TM4
2026	1,115,000	5.00	1.80	914440TN2
2027	1,170,000	5.00	1.94	914440TP7
2028	1,235,000	5.00	2.06	914440TQ5
2029	1,295,000	5.00	2.14	914440TR3
2030	1,365,000	5.00	2.23	914440TS1
2031	1,435,000	5.00	2.30	914440TT9
2032	1,510,000	5.00	2.37*	914440TU6
2033	1,585,000	5.00	2.48*	914440TV4
2034	1,665,000	5.00	2.53*	914440TW2
2035	1,750,000	5.00	2.58*	914440TX0
2036	1,845,000	5.00	2.60*	914440TY8
2037	1,935,000	5.00	2.65*	914440TZ5
2038	2,035,000	5.00	2.69*	914440UA8
2039	2,140,000	5.00	2.71*	914440UB6
2040	2,250,000	5.00	2.73*	914440UC4
2041	2,365,000	5.00	2.75*	914440UD2
2042	2,490,000	5.00	2.77*	914440UE0

\$30,620,000 4.00% Term Bonds Due November 1, 2046 to Yield 3.15%* - CUSIP[†] Number: 914440UF7
 \$125,810,000 5.00% Term Bonds Due November 1, 2052 to Yield 3.01%** - CUSIP[†] Number: 914440UG5

\$211,270,000**University of Massachusetts Building Authority, Project Revenue Bonds
Senior Series 2022-2 (Federally Taxable)**

<u>Maturity (November 1)</u>	<u>Principal Amount</u>	<u>Interest Rate</u>	<u>Price</u>	<u>CUSIP[†]</u>
2023	\$6,405,000	2.199%	100	914440UH3
2024	6,550,000	2.299	100	914440UJ9
2025	6,710,000	2.542	100	914440UK6
2026	6,890,000	2.657	100	914440UL4
2027	7,080,000	2.807	100	914440UM2
2028	7,285,000	2.909	100	914440UN0
2029	7,505,000	3.059	100	914440UP5
2030	7,740,000	3.146	100	914440UQ3
2031	7,995,000	3.246	100	914440UR1
2032	8,260,000	3.346	100	914440US9
2033	8,550,000	3.496	100	914440UT7
2034	8,860,000	3.646	100	914440UU4
2035	9,195,000	3.796	100	914440UV2

\$112,245,000 4.306% Term Bonds Due November 1, 2045 - Price 100 - CUSIP[†] Number: 914440UW0

[†] CUSIP is a registered trademark of the American Bankers Association. CUSIP data herein is provided by CUSIP Global Services, managed on behalf of the American Bankers Association by S&P Global Market Intelligence. The CUSIP numbers are included solely for the convenience of owners of the Bonds, and the Authority is not responsible for the selection or the correctness of the CUSIP numbers printed herein. CUSIP numbers assigned to securities may be changed during the term of such securities based on a number of factors, including, but not limited to, the refunding or defeasance of such securities or the use of secondary market financial products.

* Priced to the first optional redemption date, May 1, 2032.

** Priced to the first optional redemption date, May 1, 2030.

UNIVERSITY OF MASSACHUSETTS BUILDING AUTHORITY

**One Beacon Street, 31st Floor
Boston, Massachusetts 02108
Telephone: (617) 287-3200**

Authority Members

Victor Woolridge, *Chairman*
Gerry-Lynn Darcy, *Vice Chair*
Mary Burns, *Secretary-Treasurer*
James McGaugh
Michael J. O'Brien
Kelly O'Neill
Christopher Philbin
John T. Smolak
Charles Wu

Executive/Senior Staff

Barbara J. Kroncke, *Executive Director*
David Mullen, *Deputy Director and General Counsel*
Aaron D'Elia, *Chief Financial Officer and Treasurer*

Trustee

U.S. Bank Trust Company, National Association
Boston, Massachusetts

Financial Advisor

Omnicap Group LLC
El Segundo, California

Bond Counsel

McCarter & English, LLP
Boston, Massachusetts

Disclosure Counsel

Greenberg Traurig, LLP
Boston, Massachusetts

No dealer, broker, salesman or other person has been authorized by the University of Massachusetts Building Authority (the “Authority”), The Commonwealth of Massachusetts (the “Commonwealth”), the University of Massachusetts (the “University”) or the Underwriters to give any information or to make any representation with respect to the Bonds other than as contained in this Official Statement and, if given or made, such other information or representation must not be relied upon as having been authorized by any of the foregoing. This Official Statement does not constitute an offer to sell or the solicitation of an offer to buy, nor shall there be any sale of the Bonds by any person in any jurisdiction in which it is unlawful for such person to make such offer, solicitation or sale.

Certain information contained herein has been obtained from The Depository Trust Company and other sources which are believed to be reliable, but is not guaranteed as to accuracy or completeness, and is not to be construed as a representation of the Underwriters. The information and expressions of opinion herein are subject to change without notice and neither the delivery of this Official Statement nor any sale made hereunder shall, under any circumstances, create any implication that there has been no change in the affairs of the parties referred to above since the date hereof.

U.S. Bank Trust Company, National Association by acceptance of its duties as Trustee under the Project Trust Agreement described herein has not reviewed this Official Statement and makes no representations as to the information contained herein, including but not limited to any representations as to the use of the proceeds of the Bonds or related activities.

All quotations from and summaries and explanations of provisions of laws, the Project Trust Agreement, the Contract (defined herein), the Bonds, the Series Resolutions and other documents herein do not purport to be complete; reference is made to said laws, the Project Trust Agreement, the Bonds and other documents for full and complete statements of their provisions. Copies of the above are available for inspection prior to the date of issuance of the Bonds at the offices of the Authority, located at One Beacon Street, 31st Floor, Boston, Massachusetts 02108, and subsequent to the date of issuance of the Bonds, at the principal corporate trust office of the Trustee.

Information included in this Official Statement includes forward-looking statements about the future that are necessarily subject to various risks and uncertainties (“Forward-Looking Statements”). These Forward-Looking Statements are (i) based on the beliefs and assumptions of management of the Authority and the University and on information currently available to such management and (ii) generally identifiable by words such as “estimates,” “expects,” “anticipates,” “plans,” “believes” and other similar expressions. Events that could cause future results to differ materially from those expressed in or implied by Forward-Looking Statements or historical experience include the impact or outcome of many factors that are described throughout this Official Statement. Although the ultimate impact of such factors is uncertain, they may cause future performance to differ materially from results or outcomes that are currently sought or expected by the Authority and the University.

References to web site addresses presented herein are for informational purposes only and may be in the form of a hyperlink solely for the reader’s convenience. Unless specified otherwise, such web sites and the information or links contained therein are not incorporated into, and are not part of, this final official statement for purposes of, and as that term is defined in, SEC Rule 15c2-12.

The financial advisor to the Authority has provided the following sentence for inclusion in this Official Statement. The financial advisor has reviewed the information in this Official Statement in accordance with, and as part of, its responsibilities to the Authority and, as applicable, to investors under the federal securities laws as applied to the facts and circumstances of this transaction, but the financial advisor does not guarantee the accuracy or completeness of such information.

THE UNDERWRITERS HAVE PROVIDED THE FOLLOWING SENTENCE FOR INCLUSION IN THIS OFFICIAL STATEMENT: THE UNDERWRITERS HAVE REVIEWED THE INFORMATION IN THIS OFFICIAL STATEMENT IN ACCORDANCE WITH, AND AS PART OF, THEIR RESPECTIVE RESPONSIBILITIES TO INVESTORS UNDER THE FEDERAL SECURITIES LAWS AS APPLIED TO THE FACTS AND CIRCUMSTANCES OF THIS TRANSACTION, BUT THE UNDERWRITERS DO NOT GUARANTEE THE ACCURACY OR COMPLETENESS OF SUCH INFORMATION.

IN CONNECTION WITH THIS OFFERING, THE UNDERWRITERS MAY OVERALLOT OR EFFECT TRANSACTIONS WHICH STABILIZE OR MAINTAIN THE MARKET PRICES OF THE SECURITIES OFFERED HEREBY AT A LEVEL ABOVE THOSE WHICH MIGHT OTHERWISE PREVAIL IN THE OPEN MARKET. SUCH STABILIZING, IF COMMENCED, MAY BE DISCONTINUED AT ANY TIME.

**INFORMATION CONCERNING OFFERING RESTRICTIONS
IN CERTAIN JURISDICTIONS OUTSIDE THE UNITED STATES**

REFERENCES IN THIS SECTION TO THE “SECURITIES” MEAN THE BONDS OFFERED HEREBY.

MINIMUM UNIT SALES

THE BONDS WILL TRADE AND SETTLE ON A UNIT BASIS (ONE UNIT EQUALING ONE BOND OF \$5,000 PRINCIPAL AMOUNT).

NOTICE TO PROSPECTIVE INVESTORS IN THE EUROPEAN ECONOMIC AREA (“EEA”)

THE BONDS ARE NOT INTENDED TO BE OFFERED, SOLD OR OTHERWISE MADE AVAILABLE TO AND SHOULD NOT BE OFFERED, SOLD OR OTHERWISE MADE AVAILABLE TO ANY RETAIL INVESTOR IN THE EEA. FOR THESE PURPOSES, A “RETAIL INVESTOR” MEANS A PERSON WHO IS ONE (OR MORE) OF: (I) A RETAIL CLIENT AS DEFINED IN POINT (11) OF ARTICLE 4(1) OF DIRECTIVE 2014/65/EU (AS AMENDED, “MIFID II”); (II) A CUSTOMER WITHIN THE MEANING OF DIRECTIVE (EU) 2016/97 (THE “INSURANCE DISTRIBUTION DIRECTIVE”), WHERE THAT CUSTOMER WOULD NOT QUALIFY AS A PROFESSIONAL CLIENT AS DEFINED IN POINT (10) OF ARTICLE 4(1) OF MIFID II; OR (III) NOT A QUALIFIED INVESTOR AS DEFINED IN REGULATION (EU) 2017/1129 (THE “PROSPECTUS REGULATION”). CONSEQUENTLY, NO KEY INFORMATION DOCUMENT REQUIRED BY REGULATION (EU) NO. 1286/2014 (AS AMENDED, THE “PRIIPS REGULATION”) FOR OFFERING OR SELLING THE BONDS OR OTHERWISE MAKING THEM AVAILABLE TO RETAIL INVESTORS IN THE EEA HAS BEEN PREPARED AND THEREFORE OFFERING OR SELLING THE BONDS OR OTHERWISE MAKING THEM AVAILABLE TO ANY RETAIL INVESTOR IN THE EEA MAY BE UNLAWFUL UNDER THE PRIIPS REGULATION.

THIS OFFICIAL STATEMENT HAS BEEN PREPARED ON THE BASIS THAT ALL OFFERS OF THE BONDS TO ANY PERSON THAT IS LOCATED WITHIN A MEMBER STATE OF THE EEA WILL BE MADE PURSUANT TO AN EXEMPTION UNDER ARTICLE 1(4) OF THE PROSPECTUS REGULATION FROM THE REQUIREMENT TO PRODUCE A PROSPECTUS FOR OFFERS OF THE BONDS. ACCORDINGLY, ANY PERSON MAKING OR INTENDING TO MAKE ANY OFFER IN THE EEA OF THE BONDS SHOULD ONLY DO SO IN CIRCUMSTANCES IN WHICH NO OBLIGATION ARISES FOR THE AUTHORITY OR ANY OF THE UNDERWRITERS TO PROVIDE A PROSPECTUS FOR SUCH OFFER. NEITHER THE AUTHORITY NOR THE UNDERWRITERS HAVE AUTHORIZED, NOR DO THEY AUTHORIZE, THE MAKING OF ANY OFFER OF BONDS THROUGH ANY FINANCIAL INTERMEDIARY, OTHER THAN OFFERS MADE BY THE UNDERWRITERS, WHICH CONSTITUTE THE FINAL PLACEMENT OF THE BONDS CONTEMPLATED IN THIS OFFICIAL STATEMENT.

THE OFFER OF ANY BONDS WHICH IS THE SUBJECT OF THE OFFERING CONTEMPLATED BY THIS OFFICIAL STATEMENT IS NOT BEING MADE AND WILL NOT BE MADE TO THE PUBLIC IN THE EEA, OTHER THAN: (A) TO ANY LEGAL ENTITY WHICH IS A “QUALIFIED INVESTOR” AS SUCH TERM IS DEFINED IN THE PROSPECTUS REGULATION; (B) TO FEWER THAN 150 NATURAL OR LEGAL PERSONS (OTHER THAN “QUALIFIED INVESTORS” AS SUCH TERM IS DEFINED IN THE PROSPECTUS REGULATION), SUBJECT TO OBTAINING THE PRIOR CONSENT OF THE RELEVANT UNDERWRITER OR THE AUTHORITY FOR ANY SUCH OFFER; OR (C) IN ANY OTHER CIRCUMSTANCES FALLING WITHIN ARTICLE 1(4) OF THE PROSPECTUS REGULATION; PROVIDED THAT NO SUCH OFFER OF THE BONDS SHALL REQUIRE THE AUTHORITY OR ANY UNDERWRITER TO PUBLISH A PROSPECTUS PURSUANT TO ARTICLE 3 OF THE PROSPECTUS REGULATION OR A SUPPLEMENT TO A PROSPECTUS PURSUANT TO ARTICLE 23 OF THE PROSPECTUS REGULATION.

FOR THE PURPOSES OF THIS PROVISION, THE EXPRESSION AN “OFFER OF SECURITIES TO THE PUBLIC” IN RELATION TO THE BONDS IN ANY MEMBER STATE OF THE EEA MEANS THE COMMUNICATION IN ANY FORM AND BY ANY MEANS OF SUFFICIENT INFORMATION ON THE TERMS OF THE OFFER AND THE BONDS TO BE OFFERED SO AS TO ENABLE AN INVESTOR TO DECIDE TO PURCHASE THE BONDS OR SUBSCRIBE FOR THE BONDS.

EACH SUBSCRIBER FOR OR PURCHASER OF THE BONDS IN THE OFFERING LOCATED WITHIN A MEMBER STATE OF THE EEA WILL BE DEEMED TO HAVE REPRESENTED, ACKNOWLEDGED AND AGREED THAT IT IS A “QUALIFIED INVESTOR” AS DEFINED IN THE PROSPECTUS REGULATION. THE AUTHORITY AND EACH UNDERWRITER AND OTHERS WILL RELY ON THE TRUTH AND ACCURACY OF THE FOREGOING REPRESENTATION, ACKNOWLEDGEMENT AND AGREEMENT.

IN RELATION TO EACH MEMBER STATE OF THE EUROPEAN ECONOMIC AREA (THE “EEA”) (EACH A “MEMBER STATE”), THE BONDS WHICH ARE THE SUBJECT OF THE OFFERING CONTEMPLATED BY THIS OFFICIAL STATEMENT MAY NOT BE OFFERED, SOLD OR OTHERWISE MADE AVAILABLE AND WILL NOT BE OFFERED, SOLD OR OTHERWISE MADE AVAILABLE TO ANY RETAIL INVESTOR IN THE EEA. FOR THE PURPOSES OF THIS PROVISION:

- A) THE EXPRESSION “RETAIL INVESTOR” MEANS A PERSON WHO IS ONE (OR MORE) OF THE FOLLOWING:
 - I) A RETAIL CLIENT AS DEFINED IN POINT (11) OF ARTICLE 4(1) OF DIRECTIVE 2014/65/EU (AS AMENDED, “MIFID II”); OR
 - II) A CUSTOMER WITHIN THE MEANING OF DIRECTIVE (EU) 2016/97, AS AMENDED, WHERE THAT CUSTOMER WOULD NOT QUALIFY AS A PROFESSIONAL CLIENT AS DEFINED IN POINT (10) OF ARTICLE 4(1) OF MIFID II; OR
 - III) NOT A QUALIFIED INVESTOR AS DEFINED IN THE EU PROSPECTUS REGULATION (REGULATION (EU) 2017/1129, THE “PROSPECTUS REGULATION”); AND
- B) THE EXPRESSION AN “OFFER” INCLUDES THE COMMUNICATION IN ANY FORM AND BY ANY MEANS OF SUFFICIENT INFORMATION ON THE TERMS OF THE OFFER AND THE BONDS TO BE OFFERED SO AS TO ENABLE AN INVESTOR TO DECIDE TO PURCHASE OR SUBSCRIBE FOR THE BONDS.

NOTICE TO PROSPECTIVE INVESTORS IN THE UNITED KINGDOM

THIS OFFICIAL STATEMENT HAS NOT BEEN APPROVED FOR THE PURPOSES OF SECTION 21 OF THE FINANCIAL SERVICES AND MARKETS ACT 2000 (“FSMA”) AND DOES NOT CONSTITUTE AN OFFER TO THE PUBLIC IN ACCORDANCE WITH THE PROVISIONS OF SECTION 85 OF THE FSMA. THIS OFFICIAL STATEMENT IS FOR DISTRIBUTION ONLY TO, AND IS DIRECTED SOLELY AT, PERSONS WHO (I) ARE OUTSIDE THE UNITED KINGDOM, (II) ARE INVESTMENT PROFESSIONALS, AS SUCH TERM IS DEFINED IN ARTICLE 19(5) OF THE FINANCIAL SERVICES AND MARKETS ACT 2000 (FINANCIAL PROMOTION) ORDER 2005, AS AMENDED (THE “FINANCIAL PROMOTION ORDER”), (III) ARE PERSONS FALLING WITHIN ARTICLE 49(2)(A) TO (D) OF THE FINANCIAL PROMOTION ORDER, OR (IV) ARE PERSONS TO WHOM AN INVITATION OR INDUCEMENT TO ENGAGE IN INVESTMENT ACTIVITY (WITHIN THE MEANING OF SECTION 21 OF THE FSMA) IN CONNECTION WITH THE ISSUE OR SALE OF ANY SECURITIES MAY OTHERWISE BE LAWFULLY COMMUNICATED OR CAUSED TO BE COMMUNICATED (ALL SUCH PERSONS TOGETHER BEING REFERRED TO AS “RELEVANT PERSONS”). THIS OFFICIAL STATEMENT IS DIRECTED ONLY AT RELEVANT PERSONS AND MUST NOT BE ACTED ON OR RELIED ON BY PERSONS WHO ARE NOT RELEVANT PERSONS. ANY INVESTMENT OR INVESTMENT ACTIVITY TO WHICH THIS OFFICIAL STATEMENT RELATES IS AVAILABLE ONLY TO RELEVANT PERSONS AND WILL BE ENGAGED IN ONLY WITH RELEVANT PERSONS. ANY PERSON WHO IS NOT A RELEVANT PERSON SHOULD NOT ACT OR RELY ON THIS OFFICIAL STATEMENT OR ANY OF ITS CONTENTS.

AN INVITATION OR INDUCEMENT TO ENGAGE IN INVESTMENT ACTIVITY (WITHIN THE MEANING OF SECTION 21 OF THE FINANCIAL SERVICES AND MARKETS ACT 2000 (THE “FSMA”)) IN CONNECTION WITH THE ISSUE OR SALE OF ANY BONDS MAY ONLY BE COMMUNICATED OR CAUSED TO BE

COMMUNICATED AND WILL ONLY BE COMMUNICATED OR CAUSED TO BE COMMUNICATED IN CIRCUMSTANCES IN WHICH SECTION 21(1) OF THE FSMA DOES NOT APPLY TO THE AUTHORITY; AND SUCH ISSUE OR SALE HAS COMPLIED AND WILL COMPLY WITH ALL APPLICABLE PROVISIONS OF THE FSMA WITH RESPECT TO ANY ACTIONS IN RELATION TO THE BONDS IN, FROM OR OTHERWISE INVOLVING OR BEING CAPABLE OF HAVING EFFECT IN THE UNITED KINGDOM.

NOTICE TO PROSPECTIVE INVESTORS IN THE UNITED KINGDOM AND EEA

THIS OFFICIAL STATEMENT IS NOT A PROSPECTUS FOR THE PURPOSES OF THE PROSPECTUS REGULATION IN MEMBER STATES. THIS OFFICIAL STATEMENT HAS BEEN PREPARED ON THE BASIS THAT ANY OFFER OF THE BONDS IN ANY MEMBER STATE WILL BE MADE PURSUANT TO AN EXEMPTION UNDER THE PROSPECTUS REGULATION FROM THE REQUIREMENT TO PUBLISH A PROSPECTUS FOR OFFERS OF THE BONDS. ACCORDINGLY, ANY PERSON MAKING OR INTENDING TO MAKE AN OFFER IN A MEMBER STATE OF THE BONDS WHICH ARE THE SUBJECT OF THE OFFERING CONTEMPLATED IN THIS OFFICIAL STATEMENT MAY ONLY DO SO IN CIRCUMSTANCES IN WHICH NO OBLIGATION ARISES FOR THE AUTHORITY OR THE UNDERWRITERS TO PUBLISH A PROSPECTUS PURSUANT TO ARTICLE 3 OF THE PROSPECTUS REGULATION, IN EACH CASE, IN RELATION TO SUCH OFFER. NEITHER THE AUTHORITY NOR THE UNDERWRITERS HAS AUTHORIZED, NOR DO EITHER AUTHORIZE, THE MAKING OF ANY OFFER OF THE BONDS IN CIRCUMSTANCES IN WHICH AN OBLIGATION ARISES TO PUBLISH A PROSPECTUS FOR SUCH OFFER.

IN THE CASE OF ANY BONDS BEING OFFERED TO A FINANCIAL INTERMEDIARY AS THAT TERM IS USED IN ARTICLE 5(1) OF THE PROSPECTUS REGULATION, SUCH FINANCIAL INTERMEDIARY WILL BE DEEMED TO HAVE REPRESENTED, ACKNOWLEDGED AND AGREED THAT THE BONDS ACQUIRED BY IT IN THE OFFERING HAVE NOT BEEN ACQUIRED ON A NON-DISCRETIONARY BASIS ON BEHALF OF, NOR HAVE THEY BEEN ACQUIRED WITH A VIEW TO THEIR OFFER OR RESALE TO, PERSONS IN CIRCUMSTANCES WHICH MAY GIVE RISE TO AN OBLIGATION FOR THE AUTHORITY OR THE UNDERWRITERS TO PUBLISH A PROSPECTUS PURSUANT TO ARTICLE 3 OF THE PROSPECTUS REGULATION. THE AUTHORITY, THE UNDERWRITERS AND THEIR RESPECTIVE AFFILIATES AND OTHERS WILL RELY UPON THE TRUTH AND ACCURACY OF THE FOREGOING REPRESENTATION, ACKNOWLEDGMENT AND AGREEMENT.

THE BONDS ARE NOT INTENDED TO BE OFFERED, SOLD OR OTHERWISE MADE AVAILABLE TO AND SHOULD NOT BE OFFERED, SOLD OR OTHERWISE MADE AVAILABLE TO ANY RETAIL INVESTOR IN THE EEA. FOR THESE PURPOSES, A RETAIL INVESTOR MEANS A PERSON WHO IS ONE (OR MORE) OF: (I) A RETAIL CLIENT AS DEFINED IN POINT (11) OF ARTICLE 4(1) OF DIRECTIVE 2014/65/EU (AS AMENDED, "MIFID II"); OR (II) A CUSTOMER WITHIN THE MEANING OF DIRECTIVE (EU) 2016/97 (AS AMENDED), WHERE THAT CUSTOMER WOULD NOT QUALIFY AS A PROFESSIONAL CLIENT AS DEFINED IN POINT (10) OF ARTICLE 4(1) OF MIFID II; OR (III) NOT A QUALIFIED INVESTOR AS DEFINED IN THE PROSPECTUS REGULATION. CONSEQUENTLY, NO KEY INFORMATION DOCUMENT REQUIRED BY REGULATION (EU) NO 1286/2014 (AS AMENDED, THE "PRIIPS REGULATION") FOR OFFERING OR SELLING PACKAGED RETAIL AND INSURANCE-BASED INVESTMENT PRODUCTS OR OTHERWISE MAKING THEM AVAILABLE TO RETAIL INVESTORS IN THE EEA HAS BEEN PREPARED AND THEREFORE OFFERING OR SELLING THE BONDS OR OTHERWISE MAKING THEM AVAILABLE TO ANY RETAIL INVESTOR IN THE EEA MAY BE UNLAWFUL UNDER THE PRIIPS REGULATION.

IN ADDITION, IN THE UNITED KINGDOM, THIS OFFICIAL STATEMENT IS ONLY BEING DISTRIBUTED TO, AND IS ONLY DIRECTED AT PERSONS (I) WHO HAVE PROFESSIONAL EXPERIENCE IN MATTERS RELATING TO INVESTMENTS AND FALL WITHIN ARTICLE 19(5) OF THE FINANCIAL SERVICES AND MARKETS ACT 2000 (FINANCIAL PROMOTION) ORDER 2005, AS AMENDED (THE "ORDER") OR (II) WHO FALL WITHIN ARTICLE 49(2)(A) TO (D) ("HIGH NET WORTH COMPANIES, UNINCORPORATED ASSOCIATIONS, ETC.") OF THE ORDER OR (III) TO WHOM THIS OFFICIAL STATEMENT CAN BE LAWFULLY COMMUNICATED OR CAUSED TO BE COMMUNICATED (ALL SUCH PERSONS TOGETHER BEING REFERRED TO AS "RELEVANT PERSONS"). THIS OFFICIAL STATEMENT MUST NOT BE ACTED ON OR RELIED ON IN THE UNITED KINGDOM BY PERSONS WHO ARE NOT RELEVANT PERSONS AND THE BONDS ARE ONLY AVAILABLE TO AND ANY INVESTMENT OR INVESTMENT ACTIVITY TO WHICH THIS

OFFICIAL STATEMENT RELATES IS AVAILABLE ONLY TO RELEVANT PERSONS AND WILL BE ENGAGED IN ONLY WITH SUCH PERSONS.

NOTICE TO PROSPECTIVE INVESTORS IN HONG KONG

THE CONTENTS OF THIS OFFICIAL STATEMENT HAVE NOT BEEN REVIEWED BY ANY REGULATORY AUTHORITY IN HONG KONG. YOU ARE ADVISED TO EXERCISE CAUTION IN RELATION TO THE OFFER OF THE BONDS. IF YOU ARE IN ANY DOUBT ABOUT ANY OF THE CONTENTS OF THIS OFFICIAL STATEMENT, YOU SHOULD OBTAIN INDEPENDENT PROFESSIONAL ADVICE.

THE BONDS (EXCEPT FOR BONDS WHICH ARE A “STRUCTURED PRODUCT” AS DEFINED IN THE SECURITIES AND FUTURES ORDINANCE (CAP. 571 OF THE LAWS OF HONG KONG) (“SECURITIES AND FUTURES ORDINANCE”)) MAY NOT BE OFFERED OR SOLD IN HONG KONG BY MEANS OF ANY DOCUMENT OTHER THAN (I) IN CIRCUMSTANCES WHICH DO NOT CONSTITUTE AN OFFER TO THE PUBLIC WITHIN THE MEANING OF THE COMPANIES (WINDING UP AND MISCELLANEOUS PROVISIONS) ORDINANCE (CAP. 32 OF THE LAWS OF HONG KONG) (“COMPANIES (WINDING UP AND MISCELLANEOUS PROVISIONS) ORDINANCE”) OR (II) TO “PROFESSIONAL INVESTORS” AS DEFINED IN THE SECURITIES AND FUTURES ORDINANCE AND ANY RULES MADE THEREUNDER, OR (III) IN OTHER CIRCUMSTANCES WHICH DO NOT RESULT IN THE DOCUMENT BEING A “PROSPECTUS” AS DEFINED IN THE COMPANIES (WINDING UP AND MISCELLANEOUS PROVISIONS) ORDINANCE, AND NO ADVERTISEMENT, INVITATION OR DOCUMENT RELATING TO THE BONDS MAY BE ISSUED OR MAY BE IN THE POSSESSION OF ANY PERSON FOR THE PURPOSE OF ISSUE (IN EACH CASE WHETHER IN HONG KONG OR ELSEWHERE), WHICH IS DIRECTED AT, OR THE CONTENTS OF WHICH ARE LIKELY TO BE ACCESSED OR READ BY, THE PUBLIC OF HONG KONG (EXCEPT IF PERMITTED TO DO SO UNDER THE SECURITIES LAWS OF HONG KONG) OTHER THAN WITH RESPECT TO BONDS WHICH ARE OR ARE INTENDED TO BE DISPOSED OF ONLY TO PERSONS OUTSIDE HONG KONG OR ONLY TO “PROFESSIONAL INVESTORS” AS DEFINED IN THE SECURITIES AND FUTURES ORDINANCE AND ANY RULES MADE THEREUNDER.

NOTICE TO INVESTORS IN SWITZERLAND

THIS OFFICIAL STATEMENT IS NOT INTENDED TO CONSTITUTE AN OFFER OR A SOLICITATION TO PURCHASE OR INVEST IN THE BONDS.

THE BONDS MAY NOT BE PUBLICLY OFFERED IN SWITZERLAND AND WILL NOT BE LISTED ON THE SIX SWISS EXCHANGE (“SIX”) OR ON ANY OTHER STOCK EXCHANGE OR REGULATED TRADING FACILITY IN SWITZERLAND. THIS OFFICIAL STATEMENT HAS BEEN PREPARED WITHOUT REGARD TO THE DISCLOSURE STANDARDS FOR ISSUANCE PROSPECTUSES UNDER ART. 652A OR ART. 1156 OF THE SWISS CODE OF OBLIGATIONS OR THE DISCLOSURE STANDARDS FOR LISTING PROSPECTUSES UNDER ART. 27 FF. OF THE SIX LISTING RULES OR THE LISTING RULES OF ANY OTHER STOCK EXCHANGE OR REGULATED TRADING FACILITY IN SWITZERLAND. NEITHER THIS OFFICIAL STATEMENT NOR ANY OTHER OFFERING OR MARKETING MATERIAL RELATING TO THE BONDS OR THE OFFERING MAY BE PUBLICLY DISTRIBUTED OR OTHERWISE MADE PUBLICLY AVAILABLE IN SWITZERLAND.

NONE OF THIS OFFICIAL STATEMENT OR ANY OTHER OFFERING OR MARKETING MATERIAL RELATING TO THE OFFERING, THE AUTHORITY OR THE BONDS HAVE BEEN OR WILL BE FILED WITH OR APPROVED BY ANY SWISS REGULATORY AUTHORITY. IN PARTICULAR, THIS OFFICIAL STATEMENT WILL NOT BE FILED WITH, AND THE OFFER OF THE BONDS WILL NOT BE SUPERVISED BY, THE SWISS FINANCIAL MARKET SUPERVISORY AUTHORITY (“FINMA”), AND THE OFFER OF BONDS HAS NOT BEEN AND WILL NOT BE AUTHORIZED UNDER THE SWISS FEDERAL ACT ON COLLECTIVE INVESTMENT SCHEMES (“CISA”). ACCORDINGLY, INVESTORS DO NOT HAVE THE BENEFIT OF THE SPECIFIC INVESTOR PROTECTION PROVIDED UNDER THE CISA.

NOTICE TO INVESTORS IN SINGAPORE

THIS OFFICIAL STATEMENT HAS NOT BEEN AND WILL NOT BE REGISTERED AS A PROSPECTUS WITH THE MONETARY AUTHORITY OF SINGAPORE. ACCORDINGLY, THIS OFFICIAL STATEMENT AND ANY

OTHER DOCUMENT OR MATERIAL USED IN CONNECTION WITH THE OFFER OR SALE, OR INVITATION FOR SUBSCRIPTION OR PURCHASE, OF THE BONDS MAY NOT BE CIRCULATED OR DISTRIBUTED, NOR MAY THE BONDS BE OFFERED OR SOLD, OR BE MADE THE SUBJECT OF AN INVITATION FOR SUBSCRIPTION OR PURCHASE, WHETHER DIRECTLY OR INDIRECTLY, TO PERSONS IN SINGAPORE OTHER THAN (I) TO AN INSTITUTIONAL INVESTOR AS DEFINED IN SECTION 4A OF THE SECURITIES AND FUTURES ACT (CHAPTER 289) OF SINGAPORE, AS MODIFIED OR AMENDED FROM TIME TO TIME (THE “SFA”) PURSUANT TO SECTION 274 OF THE SFA, (II) TO A RELEVANT PERSON PURSUANT (AS DEFINED IN SECTION 275(2) OF THE SFA) TO SECTION 275(1), OR ANY PERSON PURSUANT TO SECTION 275(1A), AND IN ACCORDANCE WITH THE CONDITIONS SPECIFIED IN SECTION 275, OF THE SFA; OR (III) OTHERWISE PURSUANT TO, AND IN ACCORDANCE WITH THE CONDITIONS OF, ANY OTHER APPLICABLE PROVISION OF THE SFA. WHERE THE BONDS ARE SUBSCRIBED OR PURCHASED UNDER SECTION 275 OF THE SFA BY A RELEVANT PERSON THAT IS: (A) A CORPORATION (WHICH IS NOT AN ACCREDITED INVESTOR (AS DEFINED IN SECTION 4A OF THE SFA)) THE SOLE BUSINESS OF WHICH IS TO HOLD INVESTMENTS AND THE ENTIRE SHARE CAPITAL OF WHICH IS OWNED BY ONE OR MORE INDIVIDUALS, EACH OF WHOM IS AN ACCREDITED INVESTOR; OR (B) A TRUST (WHERE THE TRUSTEE IS NOT AN ACCREDITED INVESTOR) WHOSE SOLE PURPOSE IS TO HOLD INVESTMENTS AND EACH BENEFICIARY OF THE TRUST IS AN INDIVIDUAL WHO IS AN ACCREDITED INVESTOR, SECURITIES OR SECURITIES-BASED DERIVATIVES CONTRACTS (EACH AS DEFINED IN SECTION 2(1) OF THE SFA) OF THAT CORPORATION OR THE BENEFICIARIES’ RIGHTS AND INTEREST (HOWSOEVER DESCRIBED) IN THAT TRUST SHALL NOT BE TRANSFERRED WITHIN 6 MONTHS AFTER THAT CORPORATION OR THAT TRUST HAS ACQUIRED THE BONDS PURSUANT TO AN OFFER MADE UNDER SECTION 275 OF THE SFA EXCEPT: (I) TO AN INSTITUTIONAL INVESTOR OR TO A RELEVANT PERSON, OR TO ANY PERSON ARISING FROM AN OFFER REFERRED TO IN SECTION 275(1A) OR SECTION 276(4)(I)(B) OF THE SFA; (II) WHERE NO CONSIDERATION IS OR WILL BE GIVEN FOR THE TRANSFER; (III) WHERE THE TRANSFER IS BY OPERATION OF LAW; (IV) AS SPECIFIED IN SECTION 276(7) OF THE SFA; OR (V) AS SPECIFIED IN REGULATION 37A OF THE SECURITIES AND FUTURES (OFFERS OF INVESTMENTS) (SECURITIES AND SECURITIES-BASED DERIVATIVE CONTRACTS) REGULATIONS 2018 OF SINGAPORE.

Notification under Section 309B(1)(C) of the SFA

IN CONNECTION WITH SECTION 309B OF THE SFA AND THE SECURITIES AND FUTURES (CAPITAL MARKETS PRODUCTS) REGULATIONS 2018 OF SINGAPORE (THE “CMP REGULATIONS 2018”), THE AUTHORITY HAS DETERMINED, AND HEREBY NOTIFIES ALL RELEVANT PERSONS (AS DEFINED IN SECTION 309A(1) OF THE SFA), THAT THE BONDS ARE ‘PRESCRIBED CAPITAL MARKETS PRODUCTS’(AS DEFINED IN THE CMP REGULATIONS 2018) AND ARE EXCLUDED INVESTMENT PRODUCTS (AS DEFINED IN MAS NOTICE SFA 04-N12: NOTICE ON THE SALE OF INVESTMENT PRODUCTS AND MAS NOTICE FAA-N16: NOTICE ON RECOMMENDATIONS ON INVESTMENT PRODUCTS).

NOTICE TO PROSPECTIVE INVESTORS IN TAIWAN

THE OFFER OF THE BONDS HAS NOT BEEN AND WILL NOT BE REGISTERED OR FILED WITH, OR APPROVED BY, THE FINANCIAL SUPERVISORY COMMISSION OF TAIWAN AND/OR OTHER REGULATORY AUTHORITY OF TAIWAN PURSUANT TO RELEVANT SECURITIES LAWS AND REGULATIONS, AND THE BONDS MAY NOT BE OFFERED, ISSUED OR SOLD IN TAIWAN THROUGH A PUBLIC OFFERING OR IN CIRCUMSTANCES WHICH CONSTITUTE AN OFFER WITHIN THE MEANING OF THE SECURITIES AND EXCHANGE ACT OF TAIWAN THAT REQUIRES THE REGISTRATION OR FILING WITH OR APPROVAL OF THE FINANCIAL SUPERVISORY COMMISSION OF TAIWAN. THE BONDS MAY BE MADE AVAILABLE OUTSIDE TAIWAN FOR PURCHASE BY INVESTORS RESIDING IN TAIWAN (EITHER DIRECTLY OR THROUGH PROPERLY LICENSED TAIWAN INTERMEDIARIES), BUT MAY NOT BE OFFERED OR SOLD IN TAIWAN EXCEPT TO QUALIFIED INVESTORS VIA A TAIWAN LICENSED INTERMEDIARY. ANY SUBSCRIPTIONS OF BONDS SHALL ONLY BECOME EFFECTIVE UPON ACCEPTANCE BY THE AUTHORITY OR THE RELEVANT DEALER OUTSIDE TAIWAN AND SHALL BE DEEMED A CONTRACT ENTERED INTO IN THE JURISDICTION OF INCORPORATION OF THE AUTHORITY OR RELEVANT DEALER, AS THE CASE MAY BE, UNLESS OTHERWISE SPECIFIED IN THE SUBSCRIPTION DOCUMENTS RELATING TO THE BONDS SIGNED BY THE INVESTORS.

NOTICE TO PROSPECTIVE INVESTORS IN JAPAN

THE BONDS HAVE NOT BEEN AND WILL NOT BE REGISTERED UNDER THE FINANCIAL INSTRUMENTS AND EXCHANGE ACT OF JAPAN (ACT NO. 25 OF 1948, AS AMENDED, THE “FIEA”). NEITHER THE BONDS NOR ANY INTEREST THEREIN MAY BE OFFERED OR SOLD, DIRECTLY OR INDIRECTLY, IN JAPAN OR TO, OR FOR THE BENEFIT OF, ANY “RESIDENT” OF JAPAN (AS DEFINED UNDER ITEM 5, PARAGRAPH 1, ARTICLE 6 OF THE FOREIGN EXCHANGE AND FOREIGN TRADE ACT (ACT NO. 228 OF 1949, AS AMENDED)), OR TO OTHERS FOR RE-OFFERING OR RESALE, DIRECTLY OR INDIRECTLY, IN JAPAN OR TO, OR FOR THE BENEFIT OF, ANY RESIDENT OF JAPAN, EXCEPT PURSUANT TO AN EXEMPTION FROM THE REGISTRATION REQUIREMENTS OF, AND OTHERWISE IN COMPLIANCE WITH, THE FIEA AND ANY OTHER APPLICABLE LAWS, REGULATIONS AND MINISTERIAL GUIDELINES OF JAPAN.

THE PRIMARY OFFERING OF THE BONDS AND THE SOLICITATION OF AN OFFER FOR ACQUISITION THEREOF HAVE NOT BEEN AND WILL NOT BE REGISTERED UNDER PARAGRAPH 1, ARTICLE 4 OF THE FIEA. AS IT IS A PRIMARY OFFERING, IN JAPAN, THE BONDS MAY ONLY BE OFFERED, SOLD, RESOLD OR OTHERWISE TRANSFERRED, DIRECTLY OR INDIRECTLY TO, OR FOR THE BENEFIT OF CERTAIN QUALIFIED INSTITUTIONAL INVESTORS AS DEFINED IN THE FIEA (“QIIS”) IN RELIANCE ON THE QIIS-ONLY PRIVATE PLACEMENT EXEMPTION AS SET FORTH IN ITEM 2(I), PARAGRAPH 3, ARTICLE 2 OF THE FIEA. A QII WHO PURCHASED OR OTHERWISE OBTAINED THE BONDS CANNOT RESELL OR OTHERWISE TRANSFER THE BONDS IN JAPAN TO ANY PERSON EXCEPT ANOTHER QII.

TABLE OF CONTENTS

	Page
INTRODUCTORY STATEMENT	1
General	1
Purpose and Content of Official Statement	2
Impact of COVID-19 Pandemic	2
THE AUTHORITY	3
General	3
Members, Officers and Staff	3
THE BONDS.....	5
General	5
Redemption Provisions	5
SECURITY AND SOURCES OF PAYMENT FOR THE BONDS	6
General	6
Contract	7
Pledge of Revenues Under the Project Trust Agreement	8
Rate Covenant	9
Additional Indebtedness	9
Annual Debt Service Requirements	10
THE PROJECTS	11
SOURCES AND USES OF FUNDS.....	11
LITIGATION	11
LEGALITY FOR INVESTMENT	12
TAX MATTERS	12
RATINGS.....	18
LEGAL MATTERS	18
DISCLOSURE CERTIFICATES.....	18
UNDERWRITING	19
CONTINUING DISCLOSURE	19
FINANCIAL ADVISOR.....	20
FINANCIAL STATEMENTS OF THE AUTHORITY	20
FINANCIAL STATEMENTS OF THE UNIVERSITY	20
MISCELLANEOUS.....	20
Appendix A Letter from the University	A-1
Appendix B Financial Statements of the Authority	B-1
Appendix C Financial Report of the University, including Financial Statements.....	C-1
Appendix D Summary of Legal Documents	D-1
Appendix D-1 Summary of Certain Provisions of the Project Trust Agreement.....	D-1-1
Appendix D-2 Summary of Certain Provisions of the Contract	D-2-1
Appendix E Proposed Forms of Opinions of Bond Counsel.....	E-1
Appendix F Proposed Form of Continuing Disclosure Agreement	F-1
Appendix G Book-Entry Only System and Global Clearance Procedures.....	G-1

[Intentionally Left Blank]

OFFICIAL STATEMENT

University of Massachusetts Building Authority

\$188,650,000
Project Revenue Bonds
Senior Series 2022-1

\$211,270,000
Project Revenue Bonds
Senior Series 2022-2
(Federally Taxable)

INTRODUCTORY STATEMENT

General

The purpose of this Official Statement, which includes the cover page, the inside cover page, and the appendices hereto, is to furnish information in connection with the offering by the University of Massachusetts Building Authority (the "Authority") of its Project Revenue Bonds, Senior Series 2022-1 (the "Series 2022-1 Bonds") and Project Revenue Bonds, Senior Series 2022-2 (Federally Taxable) (the "Series 2022-2 Bonds" or the "Taxable Bonds" and together with the Series 2022-1 Bonds, the "Bonds"). Unless otherwise defined herein, capitalized terms used herein shall have the meanings set forth in Appendix D - "Summary of Legal Documents."

The Bonds are issued pursuant to Chapter 773 of the Acts of 1960 of The Commonwealth of Massachusetts, as amended (the "Enabling Act"), and the Trust Agreement dated as of November 1, 2000 (the "Project Trust Agreement"), between the Authority and U.S. Bank Trust Company, National Association, Boston, Massachusetts, as successor trustee (the "Trustee"). The Series 2022-1 Bonds are issued pursuant to the Series Resolution Authorizing the Issuance of Project Revenue Bonds, Senior Series 2022-1 (the "2022-1 Series Resolution"), adopted by the Authority on December 10, 2021. The Series 2022-2 Bonds are issued pursuant to the Series Resolution Authorizing the Issuance of Project Revenue Bonds, Senior Series 2022-2 (Federally Taxable) (the "2022-2 Series Resolution" and together with the 2022-1 Series Resolution, the "Series Resolutions"), adopted by the Authority on December 10, 2021.

The Authority was created by the Enabling Act as a body politic and corporate and a public instrumentality of The Commonwealth of Massachusetts (the "Commonwealth") for the general purpose of aiding and contributing to the performance of the educational and other purposes of the University of Massachusetts (the "University"). See "THE AUTHORITY."

The Series 2022-1 Bonds are being issued to finance and refinance projects set forth in the University's capital plan. See "THE PROJECTS." The proceeds of the Series 2022-1 Bonds will be used to finance the costs of such projects, to repay principal and interest on commercial paper notes issued by the Authority and to pay costs of issuing the Series 2022-1 Bonds.

The Series 2022-2 Bonds are being issued to finance and refinance projects set forth in the University's capital plan. See "THE PROJECTS." The proceeds of the Series 2022-2 Bonds will be used to finance the costs of such projects, to repay principal and interest on commercial paper notes issued by the Authority and to pay costs of issuing the Series 2022-2 Bonds.

The Enabling Act prohibits the Authority from initiating any project except upon request made by the University and upon written approval from the Secretary of the Executive Office for Administration and Finance of the Commonwealth. The Enabling Act provides that any refunding of Authority indebtedness shall be approved by the Trustees of the University.

The Bonds will be special obligations of the Authority payable solely from funds provided under the Enabling Act, the Project Trust Agreement and the Series Resolutions, including payments made by the University under the Second Amended and Restated Master Contract for Financial Assistance, Management and Services dated as of May 1, 2019 (the "Contract") among the Commonwealth, acting by and through the University, the University and the Authority.

Under the Contract, the University is obligated to pay debt service on the Bonds and other costs of the Authority related thereto with respect to the Projects from all available funds of the University. See “SECURITY AND SOURCES OF PAYMENT FOR THE BONDS.”

The obligations of the University in connection with the Bonds do not constitute a general obligation of the University or a debt or obligation of the Commonwealth, and (a) the Commonwealth shall not be obligated to pay the Bonds, and (b) neither the faith and credit nor the taxing power of the Commonwealth or of any political subdivision thereof is pledged to the payment of the Bonds. The Enabling Act does not in any way create a so-called moral obligation of the Commonwealth or of any political subdivision thereof to pay debt service with respect to the Bonds. The Authority does not have taxing power.

Purpose and Content of Official Statement

This Official Statement describes the terms and use of proceeds of, and security for, the Bonds. This introduction is subject in all respects to the additional information contained in this Official Statement, including Appendices A through H hereto. All descriptions of documents contained herein are only summaries and are qualified in their entirety by reference to each such document.

Information about the University is set forth in Appendix A. Financial Statements of the Authority and of the University, as of and for the fiscal years ended June 30, 2021 and 2020 are set forth in Appendices B and C, respectively. Summaries of certain provisions of the Project Trust Agreement and the Contract are included as Appendices D-1 and D-2, respectively. The proposed forms of opinions of Bond Counsel are included in Appendix E. Appendix F includes the form of the Continuing Disclosure Agreement with respect to the Authority and the University. Appendix G includes information about The Depository Trust Company, the book-entry only system, Clearstream Luxembourg and the Euroclear Systems.

The summaries of the agreements and other documents herein do not purport to be comprehensive or definitive and all references to any contract, agreement and other document described herein are qualified in their entirety by reference to each such contract, agreement and other document. Definitive copies of all contracts, agreements and other documents described in the Official Statement are available for inspection prior to the date of issuance of the Bonds at the offices of the Authority, located at One Beacon Street, 31st Floor, Boston, Massachusetts 02108, and subsequent to the date of issuance of the Bonds, at the principal corporate trust office of the Trustee.

Impact of COVID-19 Pandemic

For certain information about the impact of the COVID-19 pandemic on the University, see Appendix A under the caption “UNIVERSITY RESPONSE TO COVID-19.”

[Remainder of Page Intentionally Left Blank]

THE AUTHORITY

General

The Authority was created in 1960 by the Enabling Act as a body politic and corporate and a public instrumentality placed in the Commonwealth's Department of Education, but not subject to the supervision or regulation of that Department or of any other department, commission, board, bureau or agency of the Commonwealth except as specifically provided in the Enabling Act and described herein. In 1995, the Authority was consolidated with and assumed the obligations of the University of Lowell Building Authority and the Southeastern Massachusetts Building Authority, following the University of Lowell and Southeastern Massachusetts University, respectively, being made the University's Lowell Campus and Dartmouth Campus in 1991.

The Authority was created for the general purpose of aiding and contributing to the performance of the educational and other purposes of the University by providing dormitories, dining commons and other buildings and structures, working capital and tangible and intangible personal property for (i) the use of the University, its students, staff and their dependents, (ii) lease to or use by an organization or association of students or others, the activities of which are a part of the activities at the University and subject to regulation by the University, (iii) a research foundation or other research organization the operation of which is approved by the University or (iv) any other entity the activities of which are approved by the University as furthering the purposes of the University.

The Authority is empowered, among other things, to acquire, construct, remove, demolish, add to, alter, enlarge, reconstruct, remodel and do other work upon any building or structure and to provide and install furnishings, furniture, machinery, equipment, approaches, driveways, walkways, parking areas, planting, landscaping and other facilities therein. The Enabling Act authorizes the Authority, among other things, to acquire property from the Commonwealth or others (but the Authority has no eminent domain power), to rent or lease as lessor or lessee any portion of a project, to operate projects, to employ experts and other persons, to enter into contracts, to borrow money to finance and refinance projects it undertakes or to be applied to working capital expenses in furtherance of the purposes of the University and to issue and sell its revenue bonds and notes therefor payable solely from its revenues.

The Authority's outstanding debt has primarily been issued under the Project Trust Agreement. This includes bonds that refunded debt previously issued by the Authority, the University of Lowell Building Authority, the Southeastern Massachusetts University Building Authority and the Massachusetts Development Finance Agency (or its predecessor authority). The Authority also has issued bonds under the Trust Agreement dated as of December 1, 2000 (the "Facilities Trust Agreement"), between the Authority and the Trustee. Such bonds are designated Facilities Revenue Bonds and are secured by amounts pledged therefor under the Facilities Trust Agreement and under contracts with the University executed in connection with the issuance of such bonds. Facilities Revenue Bonds, unlike bonds issued under the Project Trust Agreement, are not secured by all available funds of the University. Currently, there are no bonds outstanding under the Facilities Trust Agreement.

For information about outstanding indebtedness of the Authority, including the Authority's authorized \$200 million commercial paper program, see Appendix A under the heading "INDEBTEDNESS OF THE UNIVERSITY - Bonds Issued by UMBA." See Appendix B for a copy of the Authority's audited financial statements as of and for the years ended June 30, 2021 and 2020.

Under the Enabling Act, the Authority may have up to \$200 million principal amount of notes and bonds issued by the Authority that are outstanding and guaranteed by the Commonwealth. There are no outstanding bonds of the Authority guaranteed by the Commonwealth.

The Enabling Act requires approval by the Treasurer and Receiver General of the Commonwealth and the Secretary of the Executive Office for Administration and Finance of the Commonwealth, or by their designees, of the sale and terms of bonds or notes sold by the Authority, which approval has been obtained by the Authority with respect to the Bonds.

Members, Officers and Staff

The Authority consists of 11 members appointed by the Governor of the Commonwealth, five of whom shall be appointive members of the Board of Trustees of the University and may, but need not, be graduates of the

University, and two others who shall be graduates of the University. Members from the Board of Trustees of the University serve while they are Trustees of the University; each other member serves for a term expiring on June 30 in the sixth calendar year after the calendar year in which his or her term began (unless appointed to fill a vacancy in which case such member shall serve for the unexpired term). Each member continues in office until his or her successor is appointed and qualified. The Authority annually elects a chairman and vice-chairman from its members and also elects a secretary-treasurer and may elect an assistant secretary-treasurer, neither of whom needs to be a member of the Authority.

The present members and officers of the Authority and the dates of expiration of their respective terms are as follows:

<u>Member's Name, Position, Residence and Profession</u>	<u>Term Expires</u>
Victor Woolridge, Chair, Springfield Vice President, Barings	September 1, 2019 ⁺
Gerry-Lynn Darcy, Vice Chair, Middleton Vice President of Real Estate, Lupoli Companies	June 30, 2022
Mary Burns,* Secretary/Treasurer, Lowell Principal, Splash Media Group Boston, LLC and Principal, Chesapeake Outdoor, LLC	September 13, 2023
James McGaugh, Member, Needham Executive Director & Counsel, US State and Local Government Affairs, General Electric	June 30, 2020 ⁺
Michael J. O'Brien, Member, Southborough Executive Vice President, WinnCompanies	September 1, 2021 ⁺
Kelly O'Neill, Member, Danvers Senior Associate, BSC Group	June 30, 2023
Christopher Philbin, Member, West Boylston VP – Office of Government Affairs, Partners Healthcare System, Inc.	June 30, 2019 ⁺
John T. Smolak, Member, North Andover Partner and Co-Founder, Smolak & Vaughan LLP	June 30, 2021 ⁺
Charles Wu,* Member, Newton Managing Director, BayNorth Capital	September 13, 2023

There are two vacancies on the Authority Board.

* University Trustee member of Authority Board. Pursuant to the Enabling Act, the members who are appointive members of the University Trustees shall continue in office as members of the Authority so long as they continue in office as University Trustees. The date indicated is the expiration date of such member's term as a University Trustee.

⁺ Each member continues in office until his or her successor is appointed and qualified.

Barbara J. Kroncke is the Executive Director of the Authority. Prior to joining the Authority in October 2019, Ms. Kroncke served as Managing Partner of the Boston office of McCarter & English, LLP and practice group leader of the Public Finance Group. Ms. Kroncke provided counsel in all areas of public finance, including bond counsel, issuer's counsel, disclosure counsel, underwriter's counsel, purchaser's counsel and credit enhancer counsel. Ms. Kroncke received a Bachelor of Arts from Loyola University of Chicago in 1986, and received a J.D. degree from New England School of Law in 1990.

David P. Mullen, Esq. is the Deputy Director and General Counsel of the Authority. Prior to joining the Authority in June 2015, Mr. Mullen was in private practice from December 2002. Previously, he served as the First Deputy General Counsel for the Massachusetts Bay Transportation Authority from August 2000 to November 2002. Prior to that Mr. Mullen was at the Massachusetts Highway Department from August 1992 to August 2000, serving as

its Chief Counsel from 1998 to 2000. Mr. Mullen has also been an adjunct professor at law at the New England School of Law, Southern New England School of Law and Quincy College teaching various classes beginning in 1992 to present. After graduating from Suffolk University Law School in 1988, Mr. Mullen was appointed as an Assistant District Attorney in Suffolk County, Massachusetts. He has been a member of the Massachusetts Bar for 32 years and is a member of the Federal Bar.

Aaron D’Elia is the Chief Financial Officer and Treasurer of the Authority. Previously, Mr. D’Elia worked as the Chief Financial Officer for the Commonwealth’s Executive Office of Labor and Workforce Development from 2016 to early 2020, where he managed over \$200 million of annual federal and state administrative and programmatic spending. Mr. D’Elia also worked in a number of positions in the Commonwealth’s Executive Office for Administration and Finance from 1999 – 2006 and again from 2015 - 2016, including, Assistant Secretary of Capital Planning and Operations where he managed the planning, evaluation, and financing of state public infrastructure projects totaling approximately \$2 billion annually, and Director of Finance where he oversaw financial forecasting, state budget preparation, and production of the Commonwealth’s quarterly cash flow estimate in cooperation with the Offices of the State Treasurer and State Comptroller. Mr. D’Elia has a B.A. in History from the University of New Hampshire.

The Authority maintains offices at One Beacon Street, 31st Floor, Boston, Massachusetts 02108. The Authority’s telephone number is (617) 287-3200. Its website can be found at <http://www.massachusetts.edu/buildingauthority/bahome.html>.

THE BONDS

General

The Bonds will be issued as fully registered bonds in the aggregate principal amounts as set forth on the inside cover page hereof, will be dated the date of delivery and will bear interest from that date to their respective maturities as set forth on the inside cover page hereof, subject to redemption as described below. Ownership interests in the Bonds will be available in denominations of \$5,000 and integral multiples thereof. Interest on the Bonds will be payable each May 1 and November 1, commencing November 1, 2022, or, if any such day is not a Business Day, the next Business Day.

So long as Cede & Co. is the registered owner of Bonds, all payments of principal and interest on the Bonds are payable by wire transfer by the Trustee to Cede & Co., as nominee for The Depository Trust Company (“DTC”), New York, New York, which will, in turn, remit such amounts to the DTC Participants for subsequent disposition to Beneficial Owners. See Appendix G - “Book-Entry Only System and Global Clearance Procedures” herein.

Redemption Provisions

Redemption of the Series 2022-1 Bonds by Sinking Fund Installments. The Series 2022-1 Bonds stated to mature on November 1, 2046 and November 1, 2052 shall be redeemed as provided in the 2022-1 Series Resolution by mandatory Sinking Fund Installments on November 1 at their principal amounts without premium, plus accrued interest to the redemption date as follows:

Series 2022-1 Bonds maturing on November 1, 2046

<u>November 1</u>	<u>Amount</u>	<u>November 1</u>	<u>Amount</u>
2043	\$2,600,000	2045	\$ 7,690,000
2044	2,710,000	2046	17,620,000

Series 2022-1 Bonds maturing on November 1, 2052

<u>November 1</u>	<u>Amount</u>	<u>November 1</u>	<u>Amount</u>
2047	\$18,435,000	2050	\$21,425,000
2048	19,385,000	2051	22,520,000
2049	20,375,000	2052	23,670,000

Redemption of the Series 2022-2 Bonds by Sinking Fund Installments. The Series 2022-2 Bonds stated to mature on November 1, 2045 shall be redeemed as provided in the 2022-2 Series Resolution by mandatory Sinking Fund Installments on November 1 at their principal amounts without premium, plus accrued interest to the redemption date as follows:

Series 2022-2 Bonds maturing on November 1, 2045

<u>November 1</u>	<u>Amount</u>	<u>November 1</u>	<u>Amount</u>
2036	\$9,575,000	2041	\$11,875,000
2037	9,995,000	2042	12,400,000
2038	10,435,000	2043	12,945,000
2039	10,895,000	2044	13,515,000
2040	11,375,000	2045	9,235,000

Optional Redemption of the Bonds. The Bonds maturing on or after November 1, 2032, other than the Series 2022-1 Bonds maturing on November 1, 2052, are subject to optional redemption prior to their stated maturity date on or after May 1, 2032, at the option of the Authority, in whole or in part, at any time, at a Redemption Price equal to the principal amount of such Bonds or portion thereof to be redeemed, without premium, plus interest accrued thereon to the date fixed for redemption. The Series 2022-1 Bonds maturing on November 1, 2052 are subject to optional redemption prior to their stated maturity date on or after May 1, 2030, at the option of the Authority, in whole or in part, at any time, at a Redemption Price equal to the principal amount of such Bonds or portion thereof to be redeemed, without premium, plus interest accrued thereon to the date fixed for redemption. Any optional redemption may be stated to be conditional, and shall be conditioned upon the Trustee’s receipt of funds sufficient to pay the Redemption Price of the Bonds to be redeemed on or prior to the Redemption Date.

Notice of Redemption. The Trustee is required to give notice of redemption of any Bonds, specifying the date of redemption, the portions of the principal amounts thereof to be redeemed and the redemption price, by mail, not more than sixty (60) days nor less than twenty (20) days prior to the redemption date, to the registered owners of any Bonds, or portions thereof, to be redeemed. Notice of redemption will be mailed to DTC or its nominee, as registered owner of the Bonds. Any notice of optional redemption may be conditional. The Trustee will not be responsible for mailing notices of redemption to anyone other than DTC or its nominee. The Authority is not responsible for mailing any notice of redemption.

Selection of Bonds To Be Redeemed Upon Partial Redemption. If less than all of the Bonds of a series are to be redeemed, the particular maturities or Sinking Fund Installments of the series of Bonds to be redeemed at the option of the Authority will be determined by the Authority in its sole discretion.

If the Bonds are registered in book-entry only form and so long as DTC or a successor securities depository is the sole registered owner of such Bonds, if less than all of the Bonds of a maturity are called for prior redemption, the particular Bonds or portions thereof to be redeemed shall be selected in accordance with the operational arrangements of DTC then in effect.

Effect of Redemption. If notice of redemption has been given in the manner provided above and money sufficient for the redemption is being held by the Trustee for such purpose, the Bonds so called for redemption shall become due and payable on the redemption date, and interest thereon shall cease to accrue and the owners of the Bonds so called for redemption shall thereafter no longer have any security or benefit under the Project Trust Agreement except to receive payment of the redemption price for such Bonds.

SECURITY AND SOURCES OF PAYMENT FOR THE BONDS

General

The Bonds are special obligations of the Authority payable solely from the funds provided under the provisions of the Enabling Act, the Project Trust Agreement and the Series Resolutions, including payments received from the University under the Contract.

Pursuant to the Contract, the University is obligated to make payments to the Authority to pay debt service on the Bonds and other costs related to the Bonds and the Projects. Such payments are secured by a pledge of the University of all available funds of the University, including trust funds and other funds administered by the University as gifts, grants or trusts, or as provided in the University's enabling act. Further, under the Contract, the University is obligated to cause to be available in Spendable Cash and Investments (as described below under "Contract" and as defined in Appendix D and formerly known as "Unrestricted Net Assets") at all times amounts sufficient to pay such costs.

However, the Bonds themselves do not constitute a general obligation of the University or a debt or obligation of the Commonwealth, and (a) the Commonwealth shall not be obligated to pay the Bonds, and (b) neither the faith and credit nor the taxing power of the Commonwealth or of any political subdivision thereof is pledged to the payment of the Bonds. The Enabling Act does not in any way create a so-called moral obligation of the Commonwealth or of any political subdivision thereof to pay debt service with respect to the Bonds. The Authority does not have taxing power.

Contract

The following is a brief overview of the terms of the Contract. For more details, see Appendix D-2 - "Summary of Certain Provisions of the Contract."

In connection with the issuance of the Bonds, the Authority and the University will certify that the Bonds are subject to the Contract.

Under the Contract, the University has agreed to remit to the Trustee amounts sufficient to pay debt service on the Authority bonds and notes that are secured by the Contract, including the Bonds, and to maintain, repair and operate the projects financed or refinanced by such bonds or notes.

The Contract also sets forth the Authority's and the University's respective obligations with respect to the projects that are the subject of the Contract, including, as applicable, acquisition, planning, construction, completion, operation, management, maintenance and repair thereof.

Under the Contract, the Authority shall annually certify by March 1 of each year to the University for the 12-month period commencing the next succeeding November 1, the amount estimated to cover the costs of debt service and other related expenses, including amounts to be funded under the Project Trust Agreement or Facilities Trust Agreement, as applicable, and costs related to the projects that are the subject of the Contract, in each case detailed by component of the financed projects. Such certificate, which may be revised from time to time as necessary, shall include the date on which such amounts are due and the source of such payments. For any project operated by the Authority for which the Authority sets rates and charges for such project, such certificate shall detail the fees, rents, rates and other charges proposed for the use of such projects, which shall be fixed so as to be sufficient, in the aggregate, together with other available moneys, to cover all of the costs allocable to such projects.

Under the Contract, the University pledges to the making of payments required thereunder from all available funds of the University, including trust funds and other funds administered by the University as gifts, grants or trusts. In addition, the University shall cause to be available in Spendable Cash and Investments at all times amounts sufficient to pay such portion of the amounts certified by the Authority required to be paid therefrom and to provide for any other payments required under the MDFA Financing Agreements (as defined in Appendix D and referred to below under "Additional Indebtedness"). This pledge of all available funds of the University does not apply to certain projects, referred to in the Contract as "Specific Revenue Projects" and to any bonds or notes related thereto. "Spendable Cash and Investments" (formerly "Unrestricted Net Assets") means the sum of University cash and investments, less debt service reserve funds, plus University of Massachusetts Foundation, Inc. cash and investments, plus pledges receivable reported in permanently restricted net assets, less University permanently restricted net assets, less University of Massachusetts Foundation Inc. permanently restricted net assets, provided that in the event of future modifications to the University's financial statements that provide for a different presentation of such information, the University may further modify the definition of Spendable Cash and Investments (previously referred to as the "Expendable Fund Balance"). See Appendix D-2 and Appendix A under the heading "INDEBTEDNESS OF THE UNIVERSITY - Spendable Cash and Investments."

By April 1 of each year, the University Treasurer shall certify in writing to the Authority whether or not there are sufficient funds in Spendable Cash and Investments to pay the amounts so required to be paid therefrom and, if so, that such funds will be held in trust in Spendable Cash and Investments for the equal and ratable benefit of the Authority and each other person or entity for whose benefit amounts will be applied to the payment of amounts required to be paid therefrom and will not be expended for any other purpose. Such funds will be so held and not expended for any other purpose; provided, however, that if any portion of the amount to be paid to the Authority is paid from gifts or trust funds or funds generated by the Authority from projects, then after any such payment an amount equal to such portion so paid need no longer be held in Spendable Cash and Investments.

If such certification states that sufficient funds are not available in Spendable Cash and Investments to pay such amounts, such certification shall state the amount of funds so available. The University shall hold such funds in trust for the benefit of the Authority to be applied pro rata to obligations under the Contract. Notwithstanding any shortfall, the University will continue to be obligated to make payments in full. Further, under the Contract, the Authority is authorized to adopt or revise fee and other charges for the use of its projects and to bill and collect from students in the University the amounts necessary to cover any such shortfall. To date, there has never been such a shortfall.

Pledge of Revenues Under the Project Trust Agreement

The following is a brief overview of certain terms of the Project Trust Agreement. For more details, see Appendix D-1 - "Summary of Certain Provisions of the Project Trust Agreement."

Under the Project Trust Agreement the Authority assigns, pledges and grants to the Trustee a security interest in all rights of the Authority under the Contract to receive amounts payable to the Authority thereunder.

Under the Project Trust Agreement the Authority pledges to the Trustee for the benefit of the holders of the Bonds and all other bonds issued under the Project Trust Agreement (i) all moneys paid or payable for deposit in or on deposit in any Fund, Account or subaccount created under the Project Trust Agreement, all investments received or receivable for deposit in or on deposit in any Fund, Account or subaccount created under the Project Trust Agreement and all interest or other income on such investments paid or payable for deposit in or on deposit in any Fund, Account or subaccount created thereunder and all rights of the Authority to receive such moneys, investments and interest or other income (except for the Rebate Fund), subject to application of such moneys, investments and other income as provided in the Project Trust Agreement and (ii) subject to the Project Trust Agreement, (a) the Revenues from each project financed or refinanced under the Project Trust Agreement and (b) the Revenues, including Secondary Revenues payable to the Authority from Other Projects, except as set forth in the Project Trust Agreement.

Pursuant to the Enabling Act, Revenues pledged by the Project Trust Agreement and received by the Authority in connection with the projects financed or refinanced by any Series of bonds issued under the Project Trust Agreement are pledged to the payment of the principal of and interest on all Outstanding bonds under the Project Trust Agreement as they become due, the redemption price or the purchase price of Outstanding bonds redeemed or purchased as provided in the Project Trust Agreement and other costs payable with respect to Outstanding bonds under the Project Trust Agreement. As of December 31, 2021, there was \$2,865,335,000 principal amount of bonds Outstanding under the Project Trust Agreement.

[Remainder of Page Intentionally Left Blank]

Rate Covenant

Under the Project Trust Agreement, the Authority covenants that it will fix, revise, adjust and collect fees, rents, rates and other charges for the use of each Project and any other projects or property the Revenues from which are pledged under such Project Trust Agreement to provide Revenues sufficient in the aggregate to pay all expenses of the Authority allocable to projects financed or refinanced under the Project Trust Agreement and debt service on all bonds issued and Outstanding under the Project Trust Agreement, all as set forth in Appendix D-1 - "Summary of Certain Provisions of the Project Trust Agreement."

Additional Indebtedness

The Project Trust Agreement provides that the Authority may issue additional bonds on a parity with or subordinate to the Bonds issued under the Project Trust Agreement. See Appendix D-1 - "Summary of Certain Provisions of the Project Trust Agreement."

For a description of the Authority's indebtedness, see Appendix B.

Pursuant to certain financing agreements between the University, acting in the name and on behalf of the Commonwealth, and the Massachusetts Health and Educational Facilities Authority and its successor, the Massachusetts Development Finance Agency, in connection with the issuance of other debt for the University, the University agreed not to request or permit the Authority to issue additional indebtedness on behalf of the University except (i) indebtedness that is payable from all available funds of the University or (ii) indebtedness secured by pledged revenues derived from the project or projects being financed, new or increased student fees, existing pledged revenues or any combination of the foregoing, provided, that the maximum annual debt service on all such revenue-backed indebtedness then outstanding, including the proposed additional indebtedness, does not exceed 10% of the amount shown on the then most recent audited financial statements of the University as total available revenues. In addition, no such indebtedness shall be subject to acceleration.

For a description of the University's indebtedness, see Appendices A and C.

[Remainder of Page Intentionally Left Blank]

Annual Debt Service Requirements

The following table sets forth for each fiscal year ending June 30 the debt service on bonds Outstanding under the Project Trust Agreement, including principal (whether at maturity or by mandatory sinking fund redemption), interest and total debt service.

Fiscal Year Ended June 30	Debt Service on Outstanding Authority Bonds*	Principal of Series 2022-1 Bonds	Interest on Series 2022-1 Bonds	Principal of Series 2022-2 Bonds	Interest on Series 2022-2 Bonds	Total Debt Service Requirements for the Bonds	Total Debt Service on Authority Bonds
2022	\$ 62,744,691	-	-	-	-	-	\$62,744,691
2023	232,842,826	-	\$10,089,632	-	\$8,699,565	\$18,789,197	251,632,023
2024	233,661,203	\$ 960,000	9,102,300	\$6,405,000	7,798,530	24,265,830	257,927,033
2025	226,817,557	1,010,000	9,053,050	6,550,000	7,652,815	24,265,865	251,083,422
2026	217,875,022	1,065,000	9,001,175	6,710,000	7,492,239	24,268,414	242,143,436
2027	216,078,441	1,115,000	8,946,675	6,890,000	7,315,421	24,267,096	240,345,537
2028	215,557,619	1,170,000	8,889,550	7,080,000	7,124,520	24,264,070	239,821,689
2029	214,466,344	1,235,000	8,829,425	7,285,000	6,919,191	24,268,616	238,734,960
2030	211,057,472	1,295,000	8,766,175	7,505,000	6,698,442	24,264,617	235,322,089
2031	205,518,097	1,365,000	8,699,675	7,740,000	6,461,903	24,266,578	229,781,467
2032	195,606,960	1,435,000	8,629,675	7,995,000	6,210,394	24,270,069	219,877,029
2033	187,823,710	1,510,000	8,556,050	8,260,000	5,942,445	24,268,495	212,092,205
2034	182,884,611	1,585,000	8,478,675	8,550,000	5,654,802	24,268,477	207,153,088
2035	185,515,213	1,665,000	8,397,425	8,860,000	5,343,830	24,266,255	209,781,468
2036	183,580,768	1,750,000	8,312,050	9,195,000	5,007,791	24,264,841	207,845,609
2037	182,666,328	1,845,000	8,222,175	9,575,000	4,627,120	24,269,295	206,935,623
2038	175,004,205	1,935,000	8,127,675	9,995,000	4,205,778	24,263,453	199,267,658
2039	170,335,610	2,035,000	8,028,425	10,435,000	3,765,920	24,264,345	194,599,955
2040	149,383,400	2,140,000	7,924,050	10,895,000	3,306,685	24,265,735	173,649,135
2041	148,148,147	2,250,000	7,814,300	11,375,000	2,827,212	24,266,512	172,414,659
2042	115,051,280	2,365,000	7,698,925	11,875,000	2,326,639	24,265,564	139,316,844
2043	115,225,321	2,490,000	7,577,550	12,400,000	1,803,999	24,271,549	139,496,870
2044	109,848,990	2,600,000	7,463,300	12,945,000	1,258,321	24,266,621	134,115,611
2045	84,982,887	2,710,000	7,357,100	13,515,000	688,637	24,270,737	109,253,624
2046	51,464,337	7,690,000	7,149,100	9,235,000	198,830	24,272,930	75,737,267
2047	36,777,147	17,620,000	6,642,900	-	-	24,262,900	61,040,047
2048	36,773,968	18,435,000	5,829,625	-	-	24,264,625	61,038,593
2049	24,587,568	19,385,000	4,884,125	-	-	24,269,125	48,856,693
2050	24,588,090	20,375,000	3,890,125	-	-	24,265,125	48,853,215
2051	24,591,539	21,425,000	2,845,125	-	-	24,270,125	48,861,664
2052	-	22,520,000	1,746,500	-	-	24,266,500	24,266,500
2053	-	23,670,000	591,750	-	-	24,261,750	24,261,750

* With respect to the Authority's Project Revenue Bonds, Senior Series 2009-2 and Project Revenue Bonds, Senior Series 2010-2, which were issued as so-called "Build America Bonds" under the American Recovery and Reinvestment Act of 2009 outstanding as of December 31, 2021 in the aggregate principal amount of \$430,555,000 and amortizing in accordance with the terms thereof, interest includes the cash subsidy payments expected to be received from the United States Department of the Treasury.

[Remainder of Page Intentionally Left Blank]

THE PROJECTS

The Series 2022-1 Bonds are being issued to finance and refinance projects in the University's capital plan that meet certain conditions set forth in the 2022-1 Series Resolution (collectively, the "Series 2022-1 Projects"), including without limitation all or a portion of the costs of the projects listed below:

On the Dartmouth Campus:

- Science and Engineering Building Systems Renovations

On the Amherst Campus:

- North Village Apartments (Family Housing)

On the Worcester Campus:

- New Education and Research Building for the Medical School

The Series 2022-2 Bonds are being issued to finance and refinance projects in the University's capital plan that meet certain conditions set forth in the 2022-2 Series Resolution (collectively, the "Series 2022-2 Projects"), including without limitation all or a portion of the costs of the projects listed below:

On the Worcester Campus:

- New Education and Research Building for the Medical School

See Appendix A under the heading "CURRENT AND FUTURE CAPITAL PLANS" for additional information about the Series 2022-1 Projects, the Series 2022-2 Projects and the University's capital plan. Under the Series 2022-1 Series Resolution and the Series 2022-2 Resolution, the Authority may substitute other projects in the capital plan that have been requested by the University to be initiated by the Authority and that have been approved by the Secretary of the Executive Office for Administration and Finance of the Commonwealth.

SOURCES AND USES OF FUNDS

The proceeds of sale of the Bonds are expected to be used and applied as set forth below, rounded to the nearest dollar.

Sources of Funds	
Principal amount of Series 2022-1 Bonds	\$188,650,000
Original Issue Premium on the Series 2022-1 Bonds	26,327,248
Principal Amount of the Series 2022-2 Bonds	<u>211,270,000</u>
TOTAL SOURCES	\$426,247,248
Uses of Funds:	
Deposit to Series 2022-1 Project Fund	\$213,800,000
Deposit to Series 2022-2 Project Fund	210,000,000
Costs of Issuance (including Underwriters' Discount)	<u>2,447,248</u>
TOTAL USES	\$426,247,248

LITIGATION

There is no litigation of any nature now pending or, to the knowledge of the Authority, threatened seeking to restrain or enjoin or restraining or enjoining the issuance, sale, execution or delivery of the Bonds or in any way contesting the validity of the Bonds or any proceedings of the Authority taken with respect to the issuance or sale

thereof, the validity of the Contract, or any proceedings of the Authority or of the Commonwealth taken with respect thereto, or of the pledge of any moneys or security provided under the Project Trust Agreement for the payment of the Bonds or the existence or powers of the Authority or the titles of its officers to their offices.

See Appendix A under the caption “LITIGATION” for information about the University.

LEGALITY FOR INVESTMENT

As declared by the Enabling Act, the Bonds are securities in which all public officers and public bodies of the Commonwealth and its political subdivisions, all savings banks, insurance companies, trust companies in their commercial departments and, within the limits set by Section 40 of Chapter 172 of the General Laws of the Commonwealth, banking associations, investment companies, executors, trustees and other fiduciaries, and all other persons whatsoever who are now or may hereto be authorized to invest in bonds or other obligations of a similar nature, may properly and legally invest funds, including capital, in their control or belonging to them. The Bonds are securities which may properly and legally be deposited with and received by any state or municipal officer or any agency or political subdivision of the Commonwealth for any purpose for which the deposit of bonds or other obligations of the Commonwealth is now or may hereto be authorized by law.

TAX MATTERS

Federal Tax Matters for the Series 2022-1 Bonds

In the opinion of McCarter & English, LLP, Bond Counsel (“Bond Counsel”), based upon an analysis of existing laws, regulations, rulings, and court decisions, and assuming, among other matters, compliance with certain covenants, (i) interest on the Series 2022-1 Bonds is excluded from gross income for federal income tax purposes under Section 103 of the Internal Revenue Code of 1986, as amended (the “Code”), and (ii) interest on the Series 2022-1 Bonds is not a preference item for purposes of the federal individual alternative minimum tax. Bond Counsel expresses no opinion regarding any other federal tax consequences arising with respect to the ownership or disposition of, or the accrual or receipt of interest on, the Series 2022-1 Bonds.

The Code imposes various requirements relating to the exclusion from gross income for federal income tax purposes of interest on obligations such as the Series 2022-1 Bonds. Failure to comply with these requirements may result in interest on the Series 2022-1 Bonds being included in gross income for federal income tax purposes, possibly from the date of original issuance of the Series 2022-1 Bonds. The Authority and the University have covenanted to comply with such requirements to ensure that interest on the Series 2022-1 Bonds will not be included in federal gross income. The opinion of Bond Counsel assumes compliance with these covenants.

To the extent the issue price of any maturity of the Series 2022-1 Bonds is less than the amount to be paid at maturity of such Series 2022-1 Bonds (excluding amounts stated to be interest and payable at least annually over the term of such Series 2022-1 Bonds), the difference constitutes “original issue discount,” the accrual of which, to the extent properly allocable to each owner thereof, is treated as interest on the Series 2022-1 Bonds which is excluded from gross income for federal income tax purposes and is exempt from Massachusetts personal income taxes. For this purpose, the issue price of a particular maturity of the Series 2022-1 Bonds is the first price at which a substantial amount of such maturity of the Series 2022-1 Bonds is sold to the public (excluding bond houses, brokers, or similar persons or organizations acting in the capacity of underwriters, placement agents or wholesalers). The original issue discount with respect to any maturity of the Series 2022-1 Bonds accrues daily over the term to maturity of such Series 2022-1 Bonds on the basis of a constant interest rate compounded semiannually (with straight-line interpolations between compounding dates). The accruing original issue discount is added to the adjusted basis of such Series 2022-1 Bonds to determine taxable gain or loss upon disposition (including sale, redemption, or payment on maturity) of such Series 2022-1 Bonds. Prospective Bondowners should consult their own tax advisors with respect to the tax consequences of ownership of Series 2022-1 Bonds with original issue discount, including the treatment of purchasers who do not purchase such Series 2022-1 Bonds in the original offering to the public at the first price at which a substantial amount of such Series 2022-1 Bonds is sold to the public.

The Series 2022-1 Bonds purchased, whether at original issuance or otherwise, for an amount greater than the stated principal amount to be paid at maturity of such Series 2022-1 Bonds, or, in some cases, at the earlier redemption date of such Series 2022-1 Bonds (“Premium Bonds”), will be treated as having amortizable bond premium for federal

income tax purposes and Massachusetts personal income tax purposes. No deduction is allowable for the amortizable bond premium in the case of obligations, such as the Premium Bonds, the interest on which is excluded from gross income for federal income tax purposes. However, a Bondowner's basis in a Premium Bond will be reduced by the amount of amortizable bond premium properly allocable to such Bondowner. Holders of Premium Bonds should consult their own tax advisors with respect to the proper treatment of amortizable bond premium in their particular circumstances.

Prospective Bondowners should be aware that certain requirements and procedures contained or referred to in the Project Trust Agreement and other relevant documents may be changed and certain actions (including, without limitation, defeasance of the Series 2022-1 Bonds) may be taken or omitted under the circumstances and subject to the terms and conditions set forth in such documents. Bond Counsel has not undertaken to determine (or to inform any person) whether any actions taken (or not taken) or events occurring (or not occurring) after the date of issuance of the Series 2022-1 Bonds may adversely affect the value of, or the tax status of interest on, the Series 2022-1 Bonds.

Any federal, state or local legislation, administrative pronouncement or court decision (any such legislation, administrative pronouncement or court decision constituting a "Governmental Action") may affect (i) the tax status (whether or not discussed herein or addressed in the opinion of Bond Counsel) of the Series 2022-1 Bonds (including without limitation any exemption under applicable federal, state or local law from otherwise applicable taxes with respect to the (a) interest on the Series 2022-1 Bonds, (b) gain from the sale or other disposition of the Series 2022-1 Bonds, or (c) value of the Series 2022-1 Bonds or (ii) the market price or marketability of the Series 2022-1 Bonds. The impact of any Governmental Action cannot be predicted. Prospective Bondowners are encouraged to consult their personal or institutional tax and financial advisors with respect to the tax and financial aspects of ownership of the Series 2022-1 Bonds.

Although Bond Counsel is of the opinion that interest on the Series 2022-1 Bonds is excluded from gross income for federal income tax purposes and is exempt from Massachusetts personal income taxes, the ownership or disposition of, or the accrual or receipt of interest on, the Series 2022-1 Bonds may otherwise affect a Prospective Bondowner's federal or state tax liability. The nature and extent of these other tax consequences will depend upon the particular tax status of the Prospective Bondowner or the Prospective Bondowner's other items of income, deduction or exclusion. Bond Counsel expresses no opinion regarding any such other tax consequences, and Bondowners should consult with their own tax advisors with respect to such consequences.

Federal Tax Matters for the Taxable Bonds

The following discussion summarizes certain U.S. federal income tax considerations relating to the acquisition, ownership, and disposition of the Taxable Bonds and it may not contain all information that may be important to a particular investor. It is based on provisions of the Code, Treasury Regulations promulgated thereunder, and administrative and judicial interpretations thereof, all in effect or proposed on the date hereof and all of which are subject to change, possibly with retroactive effect. Prospective investors should note that no rulings have been or are expected to be sought from the Internal Revenue Service ("IRS") with respect to any of the U.S. federal income tax consequences discussed below. Accordingly, no assurance can be given that the IRS will agree with the views expressed in this summary, or that a court will not sustain any challenge by the IRS in the event of litigation.

The following relates only to Taxable Bonds that are acquired in the initial offering for an amount of cash equal to the initial offering price (i.e., the price at which a substantial amount of such Taxable Bonds is first sold to the public) and that are held as "capital assets" within the meaning of Section 1221 of the Code (i.e., generally, property held for investment).

This discussion does not address all U.S. federal income tax consequences applicable to any given investor, nor does it address the U.S. federal income tax considerations applicable to investors who may be subject to special tax treatment (regardless of whether or not such persons constitute U.S. Holders (defined below)), such as banks and other financial institutions, retirement plans, employee stock ownership plans, certain U.S. expatriates, banks, real estate investment trusts, regulated investment companies, insurance companies, tax-exempt organizations, dealers or traders in securities or currencies, partnerships or other pass-through entities for U.S. federal income tax purposes (or investors in such entities), S corporations, estates and trusts, investors who hold their Taxable Bonds as part of a hedge, straddle, or an integrated or conversion transaction, investors whose "functional currency" is not the U.S. dollar, or persons subject to the alternative minimum tax. In addition, this discussion does not include any description

of the tax laws of any state, local, or non-U.S. jurisdiction that may be applicable to a particular investor and does not consider any aspects of U.S. federal tax law other than income taxation.

As used herein, “U.S. Holder” means a beneficial owner of a Taxable Bond that is, for U.S. federal income tax purposes: (i) an individual citizen or resident, as defined in Section 7701(b) of the Code, of the United States, (ii) a corporation (or other entity taxable as a corporation for U.S. federal income tax purposes) created or organized in or under the laws of the United States or any State thereof (including the District of Columbia), (iii) an estate the income of which is subject to U.S. federal income taxation regardless of its source, or (iv) a trust if (A) a court within the United States is able to exercise primary supervision over the administration of the trust and one or more United States persons (as defined in the Code) have the authority to control all substantial decisions of the trust or (B) the trust validly elected to be treated as a domestic trust). As used herein, “Non-U.S. Holder” generally means a beneficial owner of a Taxable Bond (other than a partnership) who is not a U.S. Holder.

The U.S. federal income tax treatment of an entity classified as a partnership for U.S. federal income tax purposes that holds the Taxable Bonds generally will depend on such partner’s particular circumstances and on the activities of the partnership. Partners in such partnerships should consult their own tax advisors regarding the consequences of acquiring, owning and disposing of the Taxable Bonds (including their status as U.S. Holders or Non-U.S. Holders).

U.S. Holders

Interest. Stated interest on the Taxable Bonds generally will be taxable to a U.S. Holder as ordinary interest income at the time such amounts are accrued or received, in accordance with the U.S. Holder’s method of accounting for U.S. federal income tax purposes.

“Original issue discount” will arise for U.S. federal income tax purposes in respect of any Taxable Bonds if its stated redemption price at maturity exceeds its issue price by more than a de minimis amount (as determined for U.S. federal income tax purposes). For any Taxable Bonds issued with original issue discount, the amount of original issue discount is equal to the excess of the stated redemption price at maturity of that Taxable Bond over its issue price. The stated redemption price at maturity of a Taxable Bond is the sum of all scheduled amounts payable on such Taxable Bond other than qualified stated interest. U.S. Holders generally will be required to include any original issue discount in income for U.S. federal income tax purposes as it accrues, in accordance with a constant yield method based on a compounding of interest (which may be before the receipt of cash payments attributable to such income).

“Premium” generally will arise for U.S. federal income tax purposes in respect of any Taxable Bond to the extent its issue price exceeds its stated principal amount. A U.S. Holder of a Taxable Bond issued at a premium may make an election, applicable to all debt securities purchased at a premium by such U.S. Holder, to amortize such premium, using a constant yield method over the term of such Taxable Bond.

Market Discount. A holder who acquires a Taxable Bond in a secondary market transaction may be subject to U.S. federal income tax rules providing that accrued market discount will be subject to taxation as ordinary income on the sale or other disposition of a “market discount bond.” Dispositions subject to this rule include a redemption or retirement of a Taxable Bond. The market discount rules may also limit a holder’s deduction for interest expense for debt that is incurred or continued to purchase or carry a Taxable Bond. A market discount bond is defined generally as a debt obligation purchased subsequent to issuance, at a price that is less than the principal amount of the obligation, subject to a de minimis rule. The Code allows a taxpayer to compute the accrual of market discount by using a ratable accrual method or a constant interest rate method. Also, a taxpayer may elect to include the accrued discount in gross income each year while holding the bond, as an alternative to including the total accrued discount in gross income at the time of a disposition, in which case the tax basis of the bond will be increased by the amount of discount included in gross income and the interest expense deduction limitation described above will not apply.

Disposition of the Taxable Bonds. Unless a nonrecognition provision of the Code applies, the sale, exchange, redemption, retirement (including pursuant to an offer by the Authority), reissuance or other disposition of a Taxable Bond will be a taxable event for U.S. federal income tax purposes. In such event, a U.S. Holder generally will recognize gain or loss equal to the difference between (i) the amount of cash plus the fair market value of property received (except to the extent attributable to accrued but unpaid interest on the Taxable Bond which will be taxed in the manner described above under “Interest”) and (ii) the U.S. Holder’s adjusted tax basis in the Taxable Bond at the

time of disposition. A U.S. Holder's adjusted basis in a Taxable Bond will generally equal the purchase price paid by the U.S. Holder for the Taxable Bond, increased by the amount of any original issue discount previously included in income by such U.S. Holder with respect to such Taxable Bond and decreased by any payments previously made on such Taxable Bond, other than payments of qualified stated interest, or decreased by any amortized premium. Any such gain or loss generally will be capital gain or loss and will be long term capital gain or loss if such Taxable Bond is held by the U.S. Holder for more than one year. Long-term capital gain of non-corporate U.S. Holders is generally subject to tax at preferential rates. The deductibility of capital losses is subject to limitations.

A material modification of the terms of any Taxable Bond may result in a deemed reissuance thereof, in which event a beneficial owner of the modified Taxable Bonds generally will recognize taxable gain or loss equal to the difference between the amount realized from the sale, exchange or retirement (less any accrued qualified stated interest which will be taxable as such) and the beneficial owner's adjusted tax basis in the Taxable Bonds.

Net Investment Income Tax. Section 1411 of the Code generally imposes a 3.8% Medicare contribution tax on the net investment income of certain individuals, trusts, and estates to the extent their income exceeds certain threshold amounts. For these purposes, "net investment income" may include, among other things, interest and gains from the sale or other disposition of the Taxable Bonds. Prospective investors are advised to consult their tax advisors regarding the possible implications of this additional tax on their investment in the Taxable Bonds.

Information Reporting and Backup Withholding. In general, a U.S. Holder will be subject to backup withholding with respect to interest on the Taxable Bonds, and the proceeds of a sale or other disposition of the Taxable Bonds (including a redemption or retirement), at the applicable tax rate of 28%, unless such holder (a) is an entity that is exempt from backup withholding (including corporations) and, when required, demonstrates this fact, or (b) provides the payor with its taxpayer identification number ("TIN"), certifies that the TIN provided to the payor is correct and that the holder has not been notified by the IRS that such holder is subject to backup withholding due to underreporting of interest or dividends, and otherwise complies with applicable requirements of the backup withholding rules. In addition, such payments to U.S. Holders that are not exempt entities will generally be subject to information reporting requirements. A U.S. Holder who does not provide the payor with its correct TIN may be subject to penalties imposed by the IRS. Backup withholding is not an additional tax. The amount of any backup withholding from a payment to a U.S. Holder will be allowed as a credit against such holder's U.S. federal income tax liability and may entitle such holder to a refund, provided that certain required information is timely furnished to the IRS.

Non-U.S. Holders

The following discussion applies only to Non-U.S. Holders of Taxable Bonds. This discussion does not address all aspects of U.S. federal income taxation that may be relevant to Non-U.S. Holders in light of their particular circumstances. For example, special rules may apply to a Non-U.S. Holder that is a "controlled foreign corporation" or a "passive foreign investment company," and, accordingly, Non-U.S. Holders should consult their own tax advisors to determine the effect of U.S. federal, state, local and non U.S. tax laws, as well as tax treaties, with regard to an investment in the Taxable Bonds.

Interest. Subject to the discussions below under the headings "FATCA Withholding" and "Information Reporting and Backup Withholding," a Non-U.S. Holder will not be subject to U.S. federal income or withholding taxes in respect of interest paid or accrued on a Taxable Bond (including original interest discount income) if the interest qualifies for the "portfolio interest exemption." This generally will be the case if each of the following applicable requirements are satisfied:

- the interest is not effectively connected with a U.S. trade or business;
- the Non-U.S. Holder is not, and is not treated as, a bank receiving interest on an extension of credit pursuant to a loan agreement entered into in the ordinary course of its trade or business, as described in Section 881(c)(3)(A) of the Code;
- certain certification requirements are met. Under current law, the certification requirement will be satisfied in any of the following circumstances:

- If a Non-U.S. Holder provides to the payor a statement on an applicable IRS Form W-8 (or suitable successor form), together with all appropriate attachments, signed under penalties of perjury, identifying the Non-U.S. Holder by name and address and stating, among other things, that the Non-U.S. Holder is not a United States person.
- If a Taxable Bond is held through a securities clearing organization, bank, or another financial institution that holds customers' securities in the ordinary course of its trade or business, (i) the Non-U.S. Holder provides such a form to such organization or institution, and (ii) such organization or institution, under penalty of perjury, certifies to the payor that it has received such statement from the beneficial owner or another intermediary and furnishes the payor with a copy thereof.
- If a financial institution or other intermediary that holds the Taxable Bond on behalf of the Non-U.S. Holder has entered into a withholding agreement with the IRS and submits an IRS Form W-8IMY (or suitable successor form) and certain other required documentation to the payor.

If the requirements of the portfolio interest exemption described above are not satisfied, a 30% withholding tax will apply to the gross amount of interest on the Taxable Bonds that is paid to a Non-U.S. Holder, unless either: (a) an applicable income tax treaty reduces or eliminates such tax, and the Non-U.S. Holder claims the benefit of that treaty by providing a properly completed and duly executed IRS Form W-8BEN or Form W-8BEN-E, as applicable (or suitable successor or substitute form) establishing qualification for benefits under the treaty, or (b) the interest is effectively connected with the Non-U.S. Holder's conduct of a trade or business in the United States and the Non-U.S. Holder provides an appropriate statement to that effect on a properly completed and duly executed IRS Form W-8ECI (or suitable successor form).

If a Non-U.S. Holder is engaged in a trade or business in the United States and its investment in a Taxable Bond is effectively connected with the conduct of that trade or business, the Non-U.S. Holder generally will be required to pay U.S. federal income tax on that interest on a net income basis in the same manner as a U.S. Holder and the 30% withholding tax described above will not apply provided the duly executed IRS Form W-8ECI is provided to the Authority's paying agent. If a Non-U.S. Holder is eligible for the benefits of an income tax treaty between the U.S. and its country of residence, and the Non-U.S. Holder claims the benefit of the treaty by properly submitting an IRS Form W-8BEN or Form W-8BEN-E, as applicable, any interest income that is effectively connected with a U.S. trade or business will be subject to U.S. federal income tax in the manner specified by the treaty and generally will only be subject to such tax if such income is attributable to a permanent establishment (or a fixed base in the case of an individual) maintained by the Non-U.S. Holder in the United States. In addition, a Non-U.S. Holder that is treated as a foreign corporation for U.S. federal income tax purposes may be subject to a branch profits tax equal to 30% (or such lower rate provided by an applicable income tax treaty) of its earnings and profits for the taxable year, subject to adjustments, that are effectively connected with its conduct of a trade or business in the United States.

Disposition of the Taxable Bonds. Subject to the discussions below under the headings "FATCA Withholding" and "Information Reporting and Backup Withholding," any gain realized by a Non-U.S. Holder upon the sale, exchange, redemption, retirement, reissuance or other disposition of a Taxable Bond generally will not be subject to U.S. federal income tax, unless (i) such gain is effectively connected with the conduct by such Non-U.S. Holder of a trade or business within the United States (and, in the case of certain income tax treaties, is attributable to a permanent establishment or "fixed base" within the United States); or (ii) in the case of any gain realized by an individual Non-U.S. Holder, such holder is present in the United States for 183 days or more in the taxable year of such sale, exchange, redemption, retirement, reissuance or other disposition and certain other conditions are met. If the first exception applies, the Non-U.S. Holder will generally be subject to U.S. federal income tax on the net gain derived from the sale, exchange, redemption, retirement at maturity, or other taxable disposition of the Taxable Bonds in the same manner as a U.S. Holder unless an applicable income tax treaty provides otherwise. If the second exception applies, the Non-U.S. Holder generally will be subject to U.S. federal income tax at a rate of 30% (except as otherwise provided by an applicable income tax treaty) on the amount by which its U.S.-source capital gains exceed its U.S.-source capital losses. In addition, corporate Non-U.S. Holders may be subject to a 30% (or lower applicable treaty rate) branch profits tax on any such effectively connected earnings and profits attributable to such gain.

U.S. Federal Estate Tax. A Taxable Bond that is held by an individual who at the time of death is not a citizen or resident of the United States will not be subject to U.S. federal estate tax as a result of such individual's death, provided that at the time of such individual's death, payments of interest with respect to such Taxable Bond

would not have been effectively connected with the conduct by such individual of a trade or business within the United States.

FATCA Withholding. The Foreign Account Tax Compliance Act (“FATCA”) together with administrative guidance and certain intergovernmental agreements entered into thereunder generally imposes a 30% U.S. withholding tax on certain U.S. source payments, including interest, and, after December 31, 2018, on gross proceeds from a disposition of property of a type which can produce U.S. source interest (“withholdable payments”), paid to (i) a “foreign financial institution” (as specifically defined in the Code) which does not provide sufficient documentation, typically on IRS Form W-8BEN-E, evidencing either (x) an exemption from FATCA, or (y) its compliance (or deemed compliance) with FATCA (which may alternatively be in the form of compliance with an intergovernmental agreement with the United States) in a manner which avoids withholding, or (ii) or to a “non-financial foreign entity” (as specifically defined in the Code)” which does not provide sufficient documentation, typically on IRS Form W-8BEN-E, evidencing either (x) an exemption from FATCA, or (y) adequate information regarding certain substantial United States beneficial owners of such entity (if any). The 30% withholding tax under FATCA applies regardless of whether the foreign financial institution or non-financial foreign entity receives payments as a beneficial owner or intermediary and whether the applicable payment otherwise is exempt from U.S. withholding (e.g., as “portfolio interest” or as capital gain upon the sale, exchange, redemption or other disposition of a Taxable Bond). Interest paid with respect to the Taxable Bonds and, after December 31, 2018, gross proceeds from the sale or disposition of the Taxable Bonds, may be subject to the 30% withholding tax if the holder fails to comply with FATCA. Non-U.S. holders are urged to consult their own tax advisors with respect to these information reporting rules and due diligence requirements and the potential application of FATCA to them.

Information Reporting and Backup Withholding. In general, the amount of any interest paid on the Taxable Bonds in each calendar year, and the amount of U.S. federal income tax withheld, if any, with respect to these payments will be reported to the IRS and each Non-U.S. Holder. Copies of the information returns reporting such interest payments and any withholding may also be made available to the tax authorities in the country in which the Non-U.S. Holder resides under an applicable income tax treaty or other information exchange agreement.

Non-U.S. Holders who have provided certification as to their non-U.S. status or who have otherwise established an exemption will generally not be subject to backup withholding tax on payments of interest if the payor does not have actual knowledge or reason to know that such certification is unreliable or that the conditions of the exemption are in fact not satisfied.

Payments of the proceeds from the disposition of a Taxable Bond (including a redemption or retirement) to or through a foreign office of a broker generally will not be subject to information reporting or backup withholding. However, information reporting, but generally not backup withholding, may apply to those payments if the broker is one of the following: (a) a United States person, (b) a “controlled foreign corporation” for U.S. federal income tax purposes, (c) a foreign person, 50% or more of whose gross income from all sources for the three-year period ending with the close of its taxable year preceding the payment was effectively connected with a U.S. trade or business, or (d) a foreign partnership with specified connections to the United States, unless the Non-U.S. Holder certifies as to its non-U.S. status or otherwise establishes an exemption.

Payment of the proceeds from a disposition of a Taxable Bond (including a redemption or retirement) to or through the United States office of a broker will be subject to information reporting and backup withholding unless the Non-U.S. Holder certifies as to its non-U.S. status or otherwise establishes an exemption from information reporting and backup withholding.

Backup withholding is not an additional tax, and amounts withheld as backup withholding are allowed as a refund or credit against a holder’s federal income tax liability, provided that the required information as to withholding is furnished to the IRS.

THE FOREGOING SUMMARY IS INCLUDED HEREIN FOR GENERAL INFORMATION ONLY AND DOES NOT DISCUSS ALL ASPECTS OF U.S. FEDERAL INCOME TAXATION THAT MAY BE RELEVANT TO A PARTICULAR BENEFICIAL OWNER OF THE TAXABLE BONDS IN LIGHT OF THE BENEFICIAL OWNER’S PARTICULAR CIRCUMSTANCES AND INCOME TAX SITUATION. PROSPECTIVE INVESTORS ARE URGED TO CONSULT THEIR OWN TAX ADVISORS AS TO ANY TAX CONSEQUENCES TO THEM FROM THE PURCHASE, OWNERSHIP AND DISPOSITION OF THE TAXABLE BONDS.

State, Local and Foreign Taxes

Bondowners may be subject to state, local and foreign taxes with respect to an investment in the Taxable Bonds. In light of the potential impact of state, local and foreign taxes (including the limitations on deductibility of state and local taxes), prospective purchasers are urged to consult their tax advisors with respect to the state, local and foreign tax consequences of an investment in the Taxable Bonds.

State Tax Matters for the Bonds

Bond Counsel is also of the opinion that, under existing law, interest on the Bonds and any profit on the sale of the Bonds are exempt from Massachusetts personal income taxes and that the Bonds are exempt from Massachusetts personal property taxes. Bond Counsel expresses no opinion regarding any other Massachusetts tax consequences arising with respect to the Bonds. Prospective Bondowners should be aware, however, that the Bonds are included in the measure of Massachusetts estate and inheritance taxes, and the Bonds and the interest thereon are included in the measure of certain Massachusetts corporate excise and franchise taxes. Bond Counsel has not opined as to the taxability of the Bonds or the income therefrom under the laws of any state other than Massachusetts.

Opinion of Bond Counsel

On the date of delivery of the Bonds, the original purchasers of the Bonds will be furnished with an opinion of Bond Counsel substantially in the applicable form shown in “Proposed Forms of Opinions of Bond Counsel” attached hereto as Appendix E.

RATINGS

The Bonds have been rated “AA” (stable outlook), “Aa2” (stable outlook) and “AA-” (stable outlook), respectively, by Fitch Ratings, Inc., Moody’s Investors Service, Inc. and S&P Global Ratings.

Such ratings reflect only the respective views of such organizations, and an explanation of the significance of such ratings may be obtained from the rating agency furnishing the same. There is no assurance that a rating will continue for any given period of time or that a rating will not be revised or withdrawn entirely by any or all of such rating agencies, if in its or their judgment, circumstances so warrant. Any downward revision or withdrawal of a rating could have an adverse effect on the market prices of the Bonds.

LEGAL MATTERS

All legal matters related to the authorization and issuance of the Bonds are subject to the approval of McCarter & English, LLP, Boston, Massachusetts, Bond Counsel for the Authority. The approving opinions of Bond Counsel, substantially in the forms attached hereto as Appendix E, will be delivered on the date of delivery of the Bonds. Certain matters will be passed upon for the Authority and the University by their Disclosure Counsel, Greenberg Traurig, LLP, Boston, Massachusetts, and for the Underwriters by their counsel, Mintz, Levin, Cohn, Ferris, Glovsky and Popeo, P.C., Boston, Massachusetts.

DISCLOSURE CERTIFICATES

At the time of delivery of the Bonds, the Chief Financial Officer and Treasurer of the Authority will deliver a certificate to the effect that, to the best of her knowledge and belief, the Preliminary Official Statement as of its date and as of the date of the sale of the Bonds and the Official Statement as of its date and as of the date of delivery of the Bonds did and do not contain any untrue statement of a material fact or omit to state a material fact necessary to make the statements made therein, in the light of the circumstances under which they are made, not misleading. To the extent that such certificate covers information regarding the University, the Chief Financial Officer and Treasurer of the Authority will rely solely upon the certificates of the University discussed in the following paragraph.

At the time of delivery of the Bonds, the President and Senior Vice President for Administration and Finance & Treasurer of the University will deliver a certificate to the effect that, to the best of their knowledge and belief, the information set forth in the Preliminary Official Statement relating to the University, as of the date of the Preliminary

Official Statement and as of the date of the sale of the Bonds, and the information set forth in the Official Statement relating to the University, as of the date of the Official Statement and the date of delivery of the Bonds did and do not contain any untrue statement of a material fact or omit to state a material fact necessary to make the statements made therein, in light of the circumstances under which they were made, not misleading.

UNDERWRITING

The Bonds are being purchased for reoffering by the Underwriters pursuant to a purchase contract (the "Purchase Contract") between the Authority and Citigroup Global Markets Inc., as representative of the Underwriters. The Underwriters have agreed to purchase the Bonds at an aggregate discount of \$1,788,504.15 from the public offering prices (or prices computed at the yields) set forth on the inside cover page hereof. The Underwriters may offer and sell the Bonds to certain dealers (including dealers depositing Bonds into investment trusts, certain of which may be sponsored or managed by the Underwriters) and others at prices lower (or yields higher) than the public offering prices (or yields) stated on the inside cover page hereof. The Purchase Contract provides that the Underwriters will purchase all the Bonds if any are purchased. The Underwriters may allow concessions from the public offering price to certain dealers, banks and others. After the initial public offering at the offering prices (or yields) set forth on the inside cover of this Official Statement, the public offering prices (or yields) may be changed from time to time by the Underwriters.

The Underwriters and their respective affiliates are full service financial institutions engaged in various activities, which may include securities trading, commercial and investment banking, financial advisory, investment management, principal investment, hedging, financing and brokerage services. The Underwriters and their respective affiliates have, from time to time, performed, and may in the future perform, various investment banking services for the Authority or the University, for which they received or will receive customary fees and expenses.

In the ordinary course of their various business activities, the Underwriters and affiliates may make or hold a broad array of investments and actively trade debt and equity securities (or related derivative securities, which may include credit default swaps) and financial instruments (including bank loans) for their own account and for the accounts of their customers and may at any time hold long and short positions in such securities and instruments. Such investment and securities activities may involve securities and instruments of the Authority or the University.

The Underwriters and their respective affiliates may also communicate independent investment recommendations, market color or trading ideas and/or publish or express independent research views in respect of such assets, securities or instruments and may at any time hold, or recommend to clients that they should acquire, long and/or short positions in such assets, securities and instruments.

In addition, certain of the Underwriters have entered into distribution agreements with other broker-dealers (that have not been designated by the Authority as Underwriters) for the distribution of the Bonds at the original issue prices. Such agreements generally provide that the relevant Underwriter will share a portion of its underwriting compensation or selling concession with such broker-dealers.

Citigroup Global Markets Inc., an underwriter of the Bonds, has entered into a retail distribution agreement with Fidelity Capital Markets, a division of National Financial Services LLC (together with its affiliates, "Fidelity"). Under this distribution agreement, Citigroup Global Markets Inc. may distribute municipal securities to retail investors at the original issue price through Fidelity. As part of this arrangement, Citigroup Global Markets Inc. will compensate Fidelity for its selling efforts.

CONTINUING DISCLOSURE

The Authority and the University will undertake to provide annual reports and notices of certain events. The form of Continuing Disclosure Agreement is set forth in Appendix F attached hereto. In October 2017, the Authority failed to timely file a notice of a rating upgrade of certain of its variable rate bonds due to an upgrading of the short-term credit rating of the liquidity facility. The Authority subsequently made a corrective filing in December 2019.

FINANCIAL ADVISOR

The Authority has retained Omnicap Group LLC (the “Financial Advisor”) to serve as its financial advisor in connection with the issuance of the Bonds. The Financial Advisor has not independently verified any of the information contained in this Official Statement and makes no guarantee as to its completeness or accuracy. The Financial Advisor’s fee for services rendered with respect to the sale of the Bonds is contingent upon the issuance and delivery of the Bonds, and receipt by the Authority of payment therefor. The Authority may engage the Financial Advisor to perform other services, including without limitation, providing certain investment services with regard to the investment of proceeds of the Bonds. The Financial Advisor is a municipal advisor registered with the Securities and Exchange Commission and the Municipal Securities Rulemaking Board, is an independent advisory firm, and is not engaged in the business of underwriting, trading or distribution of municipal securities or other public securities and therefore will not participate in the underwriting of the Bonds.

FINANCIAL STATEMENTS OF THE AUTHORITY

The financial statements of the Authority as of and for the years ended June 30, 2021 and 2020, included in this Official Statement as Appendix B, have been audited by KPMG LLP, certified public accountants, as stated, and subject to the terms described, in their report included therein. KPMG LLP has not been engaged to perform and has not performed, since the date of its report included in Appendix B, any procedures on the financial statements addressed in that report. KPMG LLP also has not performed any procedures relating to this Official Statement.

FINANCIAL STATEMENTS OF THE UNIVERSITY

The Annual Financial Report of the University for Fiscal Year 2021 is included in this Official Statement as Appendix C. It includes the financial statements of the business-type activities and the aggregate discretely presented component units of the University, which collectively comprise the University’s basic financial statements, as of and for the years ended June 30, 2021 and 2020, which have been audited by KPMG LLP, certified public accountants, as stated, and subject to the terms described, in their report included therein. KPMG LLP has not been engaged to perform and has not performed, since the date of its report included in Appendix C, any procedures on the financial statements addressed in that report. KPMG LLP also has not performed any procedures relating to this Official Statement.

MISCELLANEOUS

All quotations from and summaries and explanations of the Enabling Act, the Project Trust Agreement, the Series Resolutions and the Contract contained herein do not purport to be complete and reference is made to said laws and documents for full and complete statements of their provisions. The Appendices attached hereto are a part of this Official Statement. Copies, in reasonable quantity, of the Project Trust Agreement, the Series Resolutions and the Contract may be obtained upon request directed to the University of Massachusetts Building Authority, One Beacon Street, 31st Floor, Boston, Massachusetts 02108, Attention: Chief Financial Officer.

Any statements in this Official Statement involving estimates or matters of opinion, whether or not expressly so stated, are intended as such and not as representations of fact. This Official Statement is not to be construed as a contract or agreement between the Authority and the purchasers or holders of any of the Bonds.

The execution and delivery of this Official Statement by its Chief Financial Officer and Treasurer have been duly authorized by the Authority.

UNIVERSITY OF MASSACHUSETTS BUILDING AUTHORITY

By: /s/ Aaron D’Elia
Chief Financial Officer and Treasurer

LETTER FROM THE UNIVERSITY

APPENDIX A

Table of Contents

HISTORY AND MISSION	1
UNIVERSITY CAMPUSES	2
Amherst Campus	2
Boston Campus	3
Dartmouth Campus	4
Lowell Campus	5
Worcester Campus	6
UMassOnline.....	7
UMass Global.....	7
The University of Massachusetts Club.....	8
UNIVERSITY RELATED ORGANIZATIONS.....	8
GOVERNANCE.....	9
Department of Higher Education.....	9
Board of Trustees	10
Administrative Officers.....	11
Faculty and Staff	14
UNIVERSITY RESPONSE TO COVID-19	14
STRATEGIC INITIATIVES.....	16
ACADEMIC PROGRAMS AND ACCREDITATION	17
ENROLLMENT	18
TUITION AND FEES	21
Student Financial Aid.....	25
UNIVERSITY REVENUES AND BUDGETING.....	25
Budget Process	26
Appropriated Funds.....	26
Management of Non-Appropriated Funds.....	28
Responding to a Challenging Fiscal Environment	28
Basis of Presentation	29
Immaterial Correction	30
SUMMARY OF OPERATIONS.....	31
SUMMARY OF FINANCIAL RESULTS, FISCAL YEARS 2019, 2020 AND 2021	34
Fiscal Year 2021.....	34
Fiscal Year 2020.....	35
Fiscal Year 2019.....	36
Endowment and Fundraising.....	37
CURRENT AND FUTURE CAPITAL PLANS	38
INDEBTEDNESS OF THE UNIVERSITY.....	40
Bonds Issued by UMBA.....	40
Interest Rate Swap Agreements.....	40
Commercial Paper	40
Bonds Issued by the Massachusetts Development Finance Agency	40
Annual Debt Service on UMBA and MDFA Bonds	41
Spendable Cash and Investments	42
Additional Indebtedness	42
Capitalized Leases.....	42
INSURANCE	42
TECHNOLOGICAL INITIATIVES	43
LITIGATION	44
EMPLOYEE RELATIONS.....	44

Members of the University of Massachusetts Building Authority:

In connection with the issuance by the University of Massachusetts Building Authority (the “Authority” or “UMBA”) of its Project Revenue Bonds, Senior Series 2022-1, its Project Revenue Bonds, Senior Series 2022-2 (Federally Taxable), and its Refunding Revenue Bonds, Senior Series 2022-3 (Federally Taxable) (collectively, the “Bonds”), we are pleased to submit the following information with respect to the University of Massachusetts (the “University” or “UMass”) and other pertinent matters for inclusion in this Official Statement. Unless otherwise indicated, (i) all utilization and financial data for any year refers to the fiscal year ended June 30, and (ii) the University is the source of the information included in this Appendix A. Terms used in this Appendix A and not defined herein have the same meanings assigned to them in the front part of this Official Statement.

University of Massachusetts



HISTORY AND MISSION

The University is a state coeducational institution for higher education with five separate campuses at Amherst, Boston, Dartmouth, Lowell and Worcester in The Commonwealth of Massachusetts (the “Commonwealth”). The University was established in 1863 in Amherst, under the provisions of the 1862 Morrill Land Grant Acts, as the Massachusetts Agricultural College. It became known as the Massachusetts State College in 1932, and in 1947 became the University of Massachusetts. The Boston and Worcester campuses were opened in 1965 and 1970, respectively. The Lowell and Dartmouth campuses (previously the University of Lowell and Southeastern Massachusetts University, respectively) were made a part of the University by a legislative act of the Commonwealth, effective September 1, 1991.

The University’s core mission is “to provide an affordable and accessible education of high quality and to conduct programs of research and public service that advance knowledge and improve the lives of the people of the Commonwealth, the nation and the world.” For Fall 2021, the University enrolled 64,785 full-time equivalent students (“FTE students”). The University’s five campuses are geographically dispersed throughout the Commonwealth and possess unique and complementary missions. In addition, UMassOnline supports the campuses by providing online educational programs, which resulted in the award of 311,600 UMass course credits in academic year 2020-2021. In Fall 2021, the University became the sole corporate member of UMass Global, formerly known as Brandman University. UMass Global, a private, nonprofit institution, provides online degree and certificate programs in a wide range of disciplines, serving adult learners. See “University Campuses – UMass Global”.

The University was rated as one of the world’s best universities in the *Times Higher Education* “World University Rankings” for 2021-2022. UMass was ranked in the top 250 universities in the world and was the only public university in New England to be listed in the global top 250. The University was ranked sixth in Massachusetts, 9th in New England, 29th (tied) in American public universities, and 58th (tied) of all American institutions (public or private). In addition, all four of the UMass undergraduate campuses were rated in the “National Universities” category in *U.S. News & World Report’s* (“*U.S. News*”) 2022 Best Colleges rankings. Bolstering its global reputation, total research and development expenditures at the University reached approximately \$687 million in fiscal year 2020. In

APPENDIX A

calendar year 2021, the University received several of the largest gifts in its history, including a \$175 million unrestricted gift from The Morningside Foundation to the newly renamed UMass Chan Medical School, a \$50 million gift from Robert J. and Donna Manning, and a \$21.5 million gift from the Elaine Nicpon Marieb Charitable Foundation.

UNIVERSITY CAMPUSES

The University is composed of five campuses, spread across the Commonwealth in Amherst, Boston, Dartmouth, Lowell and Worcester. Each campus has a distinctive history and plays a unique role in advancing the University's mission.

Amherst Campus

The Amherst campus ("UMass Amherst" or the "Amherst Campus"), the University's flagship campus, located approximately 90 miles west of Boston, is the largest in the University system. The Amherst Campus enrolled approximately 29,804 FTE students for Fall 2021. UMass Amherst offers the most comprehensive and varied programs of the campuses in the University system, including liberal arts and professional programs, in addition to doctoral and research programs. It offers five associate-level programs and 111 bachelor's, 79 master's and 49 doctoral degree programs. During the 2020-2021 academic year, the Amherst Campus conferred 29 associate's, 6,274 bachelor's, and 2,016 advanced degrees (including 319 doctorate degrees), as well as 536 undergraduate certificates and 157 graduate certificates. Students may enroll in the College of Education, College of Engineering, College of Humanities and Fine Arts, Manning College of Information and Computer Sciences, Isenberg School of Management ("ISOM"), Elaine Marieb College of Nursing, College of Natural Sciences, School of Public Health and Health Sciences, College of Social and Behavioral Sciences, and the Stockbridge School of Agriculture.

The 1,400-acre Amherst Campus includes more than 13 million square feet in buildings, including the 28-story W.E.B. DuBois Library, with over six million volumes including eBooks as well as governmental documents and law collections, the 9,000-seat multi-purpose William D. Mullins Center, and 52 campus residence halls in seven unique residential areas. Additions to the campus during the past 15 years include the Studio Arts Building, the Central Heating Plant, a new student recreation center, an integrated sciences building, a new Campus Police Station and Emergency Operations Center (which was the first new construction on campus to meet LEED certification standards), the Life Science Laboratories Complex, a 1,400-bed residential and classroom Commonwealth Honors College complex, a state-of-the-art classroom and academic facility, as well as a completely renovated South College, a new innovative wood-constructed Design Building, a state-of-the-art Physical Sciences Building with specialized laboratories and 130 lab benches, and the Isenberg Business Innovation Hub addition. The iconic Old Chapel, which closed in 1986 and was listed on the National Register of Historic Places in 2015, underwent a complete renovation and opened in late 2016. In May 2018, UMass Amherst also acquired the real property and facilities located in Newton, comprising the 72-acre campus formerly owned and operated by Mount Ida College. Most recently, construction of a new Worcester Dining Commons was completed in Fall 2020 and renovation of the Student Union building was completed in February 2021. In December 2021, the UMass Board of Trustees and the Authority each gave approval to the University and Authority, respectively, to develop undergraduate and graduate housing pursuant to a public-private partnership and to build family housing pursuant to a design-build contract, at an aggregate estimated project cost of \$277.5 million. The transactions have received the required approval from the Governor and are expected to close in early Spring 2022.

The Amherst campus is an AASHE (Association for the Advancement of Sustainability in Higher Education) STARS Gold Campus and is ranked in *The Princeton Review's* 2022 Top 50 Green Colleges list. The Amherst campus continues to develop its sustainable infrastructure, including a solar panel installation project and a commitment to ensuring that all new construction is 100% LEED-certified.

The Amherst Campus is ranked 26th among the Top Public Schools and 68th in National Universities (tie) in *U.S. News* 2022 Best College rankings. The Center for Measuring University Performance in its "The Top American Research Universities 2020 Annual Report," ranks UMass Amherst 71st for total research expenditures and 66th in federal research expenditures among public research institutions, and in the top 50 among public research universities on multiple other measures of success: 38th for SAT score, 47th in national academy memberships, 16th in faculty awards, 42nd in doctorates awarded and 63rd in postdoctoral appointees. During fiscal year 2021, a total of 1,110

research awards were secured for a total of approximately \$287.8 million, including 455 federal awards totaling approximately \$220.7 million. The amounts for fiscal year 2021 include \$84.4 million in federal stimulus funds and testing funds related to the COVID-19 pandemic.

In September 2021, the Amherst Campus received a gift of \$21.5 million, the largest cash gift in the campus's history, to endow the newly named Elaine Marieb College of Nursing. In October 2021, the Amherst Campus received a gift of \$18 million to endow the newly named Manning College of Information and Computer Sciences. In 2016, UMass Amherst completed its first major capital campaign, raising approximately \$379.0 million, exceeding the \$300.0 million goal one year ahead of schedule.

Boston Campus

The 120-acre Boston campus ("UMass Boston" or the "Boston Campus"), located three miles from downtown Boston, is a residential campus that can house approximately 1,077 students. The Boston Campus is located on a harbor peninsula with the nearby John F. Kennedy Presidential Library and Museum (the "JFK Library"), the Edward M. Kennedy Institute for the United States Senate (the "Kennedy Institute") and the Massachusetts State Archives and Commonwealth Museum (the "State Archives"). The Boston Campus focuses on the academic needs of the local urban and non-traditional populations and the research and policy needs of business, government and communities in the greater Boston metropolitan region. The Boston Campus has a diverse student body, with approximately 12,958 FTE students enrolled for Fall 2021. The Boston Campus offers 68 undergraduate degree programs, 49 master's programs, and 30 doctoral programs, together with 12 undergraduate certificate programs and 53 graduate certificate programs. During the 2020-2021 academic year, the Boston Campus conferred 2,674 bachelor's degrees and 931 advanced degrees (including 98 doctorate degrees), as well as six undergraduate certificates and 186 graduate certificates. Students may enroll in the College of Liberal Arts, College of Science and Mathematics, College of Management, College of Nursing and Health Sciences, McCormack Graduate School of Policy and Global Studies, College of Education and Human Development, School for Global Inclusion and Social Development, Honors College, and School for the Environment.

The Boston Campus is the only educational institution in the Northeast to share its campus with a presidential library. The students and faculty have access to the JFK Library, as well as to the State Archives, which houses valuable Massachusetts historic and state government records. The Boston Campus also has over 550,000 books and journals at its Healey Library.

UMass Boston completed the construction of the Integrated Sciences Complex in Fall 2015 and a general academic building known as University Hall was opened in Spring 2016. Additionally, the Kennedy Institute opened in Spring 2015. The Integrated Science Complex and University Hall are both operated by the Boston Campus. The facility that houses the Kennedy Institute is owned by the Authority; the Kennedy Institute is operated by a charitable organization of the same name registered in the District of Columbia. The Kennedy Institute operates as a civic, academic and research institution focused on the study of the United States Senate. Although the Kennedy Institute has broad public access and is available for use by target groups outside of the University, one of the primary purposes of the Kennedy Institute is to enhance the academic and research environment available to the students and faculty of the University. The University provides financial support for the capital and operating expenses of the Kennedy Institute in the approximate amount of \$1.25 million annually.

UMass Boston opened its first student dormitory in September 2018, achieving a long-held goal of providing students with an on-campus residential option. The student dormitory project was undertaken through a public-private partnership model; a non-profit entity owns the facility, and a for-profit management company operates and maintains the facility.

The current capital plan for the Boston Campus is focused on meeting the campus' most critical physical plant needs with the resources currently projected to be available. One of the largest ongoing projects is the demolition of the substructure of the campus to remove a major risk to the safety and operation of the campus, and provide the key step in transforming the campus. The project includes the removal of deteriorated and outmoded structures built in the 1970s, including the Science Center and the Clark Pool, and opening up the central Quadrangle. The estimated total cost of the project is \$181.8 million, and it is expected to be completed in mid-fiscal year 2023.

APPENDIX A

In May 2010, the Authority purchased the Bayside Exposition Center (the “Bayside Site”) for \$18.7 million. The 20-acre Bayside Site is approximately one-half mile from the Boston Campus. The UMass Board of Trustees and the Authority voted in February 2019 to authorize the Authority to enter into a long-term lease for the Bayside Site with a selected developer. Under the terms proposed by the designated developer and accepted by the University and the Authority, the developer, subject to certain contingencies, will enter into a 99-year ground lease for an upfront payment of up to \$235 million, with a minimum lease price of \$192 million. The developer is in the process of obtaining the permits necessary for its development of the site. The Authority and the University currently expect to enter into the ground lease with the developer not later than March 2023.

Dartmouth Campus

The Dartmouth campus (“UMass Dartmouth” or the “Dartmouth Campus”) distinguishes itself as a vibrant public research university dedicated to engaged learning and innovative research resulting in personal and lifelong student success. The Dartmouth Campus serves as an intellectual catalyst for economic, social and cultural transformation on a global, national and regional scale. The Dartmouth Campus enrolled 6,457 FTE students for Fall 2021. The Dartmouth Campus offers 60 undergraduate degree programs and 55 graduate degree programs (including 13 at the doctorate level). During the 2020-2021 academic year, the Dartmouth Campus conferred 1,327 bachelor’s degrees and 556 advanced degrees (including 129 doctorate degrees), as well as seven undergraduate certificates and 73 graduate certificates. Students may enroll in the College of Arts and Sciences (with a School of Education), the Charlton College of Business, the College of Engineering, the College of Nursing and Health Sciences, the College of Visual and Performing Arts, the School for Marine Science and Technology, and the University of Massachusetts School of Law (the “Law School”). The main campus, designed by the eminent architect Paul Rudolf, is located on 710 acres in Dartmouth, approximately 55 miles south of Boston and 30 miles east of Providence, Rhode Island. Other Dartmouth Campus sites include the Law School in Dartmouth, the School for Marine Science and Technology on the waterfront in New Bedford, the Star Store Center for the Arts in New Bedford, and the Center for Innovation & Entrepreneurship in Fall River.

In February 2010, the Massachusetts Board of Higher Education issued approval for UMass Dartmouth to offer the Juris Doctor (J.D.) degree and the Law School was created as the first public law school in the Commonwealth. The Law School was established through the donation by Southern New England School of Law, a private law school, of certain of its assets to the University of Massachusetts Foundation, Inc., including its facility, equipment, systems and furnishings. The Dartmouth Campus admitted the first class of new students to the Law School in August 2010; overall enrollment in Fall 2021 was 366 students. The Law School was granted provisional accreditation in June 2012. In December 2016, the Law School received full accreditation from the American Bar Association (the “ABA”). The Law School has a public-service focus, with a curriculum concentrating on civil and human rights, legal support for businesses, economic justice and community law. The operating plan for the Law School calls for increases in enrollment, the bar pass rate, and the employment rate for graduates, as well enhancing the Law School’s reputation and assuring compliance with ABA standards. The Law School’s most recent ABA Standard 316 pass rate was 91.8%.

In Fall 2016, the Dartmouth Campus opened the Charlton College Learning Pavilion, providing approximately 22,000 square feet of classrooms, meeting spaces, an auditorium and technology-enhanced space. In Fall 2017, the Dartmouth Campus opened the \$55 million expansion of the School for Marine Science and Technology in New Bedford. In Spring 2020, UMass Dartmouth completed a \$134 million public-private partnership project comprising a 1,200-bed residence hall and a new dining facility. The new facility housed 952 students in Fall 2021. See “University Response to COVID-19”. In addition, in 2018 the Board of Trustees approved a \$45 million renovation to the Science and Engineering building, which commenced in Spring 2020.

In 2016, UMass Dartmouth was officially designated as a Doctoral University – Higher Research Activity (R2) by the National Carnegie Classification of Institutions of Higher Education at the Center for Postsecondary Research at Indiana University (the “Carnegie Classification”), achieving a major milestone for the University and the region. UMass Dartmouth is the only Massachusetts research university located south of Boston. This designation elevated UMass Dartmouth from its previous designation as a Master’s University.

In the 2018 edition of the *U.S. News* “America’s Best Colleges” report, UMass Dartmouth achieved a National Tier 1 designation for the first time in its history, rising from its previous designation as a regional university.

In the 2022 *U.S. News Best Colleges* rankings, UMass Dartmouth ranked 112th (tied) in the Top Public Schools and 2nd among national universities in the Commonwealth in Social Mobility.

Lowell Campus

The Lowell Campus (“UMass Lowell” or the “Lowell Campus”) is a doctoral-level research university committed to educating students for lifelong success and conducting hands-on research and outreach that sustains the economic, environmental and social health of the world.

Located in the historic industrial city of Lowell, approximately 25 miles northwest of Boston, the Lowell Campus spans more than 125 acres along the Merrimack River in three campus clusters – North, South and East. UMass Lowell enrolled 14,321 FTE students for Fall 2021. The Lowell Campus offers five associate’s, 138 bachelor’s, 50 master’s and 28 doctoral degree programs, as well as undergraduate and graduate certificate programs. During the 2020-2021 academic year, the Lowell Campus conferred 41 associate’s degrees, 3,117 bachelor’s degrees, and 1,331 advanced degrees (including 139 doctorate degrees), as well as 132 undergraduate certificates and 261 graduate certificates. Students may enroll in the College of Fine Arts, Humanities and Social Sciences, the Kennedy College of Sciences, the Francis College of Engineering, the Zuckerberg College of Health Sciences, the Manning School of Business, and the College of Education. The most recent additions to UMass Lowell’s degree offerings are bachelor’s and master’s degrees in Industrial Engineering, bachelor’s degrees in Engineering Physics and Graphic Design, and a doctoral degree in Public Health.

UMass Lowell’s “2020 Strategic Plan” significantly transformed the campus, leading to rapid gains in enrollment, retention, student achievement, research expenditures, and fundraising. Undergraduate enrollment increased 15% from Fall 2012 to Fall 2021. The Fall 2021 incoming class was among the strongest in UMass Lowell’s history, with an average SAT score of 1257. From Fall 2012 to Fall 2021, the six-year graduation rate increased from 54% to 69%. UMass Lowell’s Honors College, established in 2014, had a one-year retention rate of 89% for students returning in Fall 2021.

Since 2009, 18 buildings have been constructed, acquired and redeveloped, fully renovated or built via public-private partnerships on the Lowell Campus:

- UMass Lowell Inn & Conference Center (2009; formerly the DoubleTree Hotel)
- Tsongas Center at UMass Lowell (2010; formerly the Tsongas Arena)
- Mark and Elisia Saab Emerging Technologies and Innovation Center (opened October 2012)
- North campus parking garage (opened 2012)
- South campus parking garage (opened 2013)
- Donna Manning Health and Social Sciences Building (opened April 2013)
- University Suites (opened August 2013)
- Riverview Suites West (opened August 2013)
- University Crossing student center (opened summer 2014)
- Riverview Suites East (opened August 2015)
- McGauvran Center (opened December 2015)
- Charles J. Hoff Alumni Scholarship Center (2016)
- River Hawk Village (acquired in 2016, opened in 2017)
- Pulichino Tong Business Center (opened April 2017)
- Dandeneau Hall (opened September 2018)
- Cumnock Hall (opened September 2018)
- Perry Hall (opened January 2019)
- Alumni Hall (opened May 2019)
- Coburn Hall (reopened in January 2020)

In 2015, UMass Lowell launched a \$23.1 million project with the Commonwealth’s Accelerated Energy Program, which now generates \$1.2 million in annual energy savings, reduces water usage annually by 1.7 million gallons, and reduces annual CO₂ emissions by 9.0 million pounds.

APPENDIX A

In July 2013, UMass Lowell athletics officially elevated to Division I in all sports. Currently 13 sports are part of the America East Conference. The reclassification to full Division I status is a four-year process, which UMass Lowell formally completed in August 2017. The UMass Lowell ice hockey program has competed in Division I since 1983 and is a member of Hockey East.

The Lowell Campus, which in 2020 celebrated the 125th anniversary of the founding of its predecessor institutions Lowell State College (1894) and Lowell Technological Institute (1895), continues to receive new honors and accolades. In the 2022 *U.S. News* Best Colleges rankings, UMass Lowell ranked 88th in the Top Public Schools. In 2022, *U.S. News* ranked UMass Lowell's online graduate programs among the best in the nation in criminal justice (number 2), psychology (number 13), education (number 7), and business administration (number 31), and among the most affordable. UMass Lowell's online bachelor's degrees also were highly rated among the best in New England and number 35 nationally among the more than 200 public and private programs ranked. The Commonwealth Institute and the *Boston Globe Magazine* have ranked UMass Lowell among the top 12, and the highest ranked college or university, in the Top Women-led Businesses in Massachusetts in each year since 2017.

UMass Lowell's first-ever comprehensive fundraising campaign, *Our Legacy, Our Place: The Campaign for UMass Lowell*, concluded in Summer 2020 and raised \$40 million more than the original goal of \$125 million.

Worcester Campus

The UMass Chan Medical School (the “Chan Medical School,” “UMass Worcester” or the “Worcester Campus”) provides general and specialized medical education, engages in a comprehensive program of basic scientific and clinical research, and provides graduate level training in biomedical sciences and nursing. As Massachusetts' only public medical school, the Chan Medical School furthers its mission to improve the health and well-being of the people of the Commonwealth and the world through pioneering advances in education, research, and health care delivery. Founded in 1962 by the Massachusetts Legislature and sited in Worcester in 1965, the Chan Medical School welcomed its first class of 16 medical students in 1970. In September 2021, UMass Worcester received a \$175 million unrestricted gift from The Morningside Foundation to be paid over five years, which when fully received will more than double the Medical School's endowment. In recognition of the historic gift, UMass Medical School was renamed the UMass Chan Medical School. Today, the Chan Medical School is an internationally renowned hub for medical education, biomedical research, and health care innovation.

The Chan Medical School's academic community, which is nationally recognized for its primary care education program, includes undergraduate and graduate medical education, graduate-level training in nursing and biomedical sciences, inter-professional training in allied health professions, and continuing education for health care practitioners. The Chan Medical School's three graduate schools – the T.H. Chan School of Medicine, the Morningside Graduate School of Biomedical Sciences, and the Tan Chingfen Graduate School of Nursing – educate more than 1,200 medical, science, and nursing students each year. In collaboration with its primary clinical partner, UMass Memorial Health, the Chan Medical School operates a large post-graduate medical residency and fellowship program that trains residents and fellows. For Fall 2021, the Chan Medical School student body was composed of 1,246 FTE medical, nursing and biomedical science students, who are enrolled in a wide array of master's or doctoral degree programs. In addition, the Chan Medical School's educational community included 508 residents and 111 fellows in residency and fellowship training programs accredited by the Accreditation Council for Graduate Medical Education. The Graduate Medical Education enterprise consists of 23 core residency programs and 37 fellowship programs, all of which are accredited by their respective accreditation bodies.

The T.H. Chan School of Medicine offers medical students an accessible and exceptional academic experience that optimally prepares them to become physicians who are caring, competent, productive, and self-fulfilled in their chosen career. The Morningside Graduate School of Biomedical Sciences trains students in one of 10 areas of study while emphasizing a broad background in the basic biomedical sciences in preparation for research that is directly relevant to human disease. The Tan Chingfen Graduate School of Nursing offers a master's degree and doctoral-level preparation for advanced-practice nurses and nurse educators and an innovative graduate entry pathway program that provides an accelerated advanced nursing degree to students from disciplines outside nursing.

While the academic medical community has evolved over the years, the Chan Medical School's commitment to its founding public mission remains steadfast. The Chan Medical School is recognized as a national leader in

primary care training as evidenced by its consistent position among the top quartile of all medical schools for primary care education in the annual *U.S. News* best graduate school rankings; in 2022, *U.S. News* ranked the Chan Medical School 10th nationally for primary care.

In 2015, the Chan Medical School expanded its public service mission to respond to the growing opioid epidemic by becoming the first medical school in the nation to mandate an opioid-conscious curriculum for all medical and nursing students. The Chan Medical School’s Carnegie Classification as a community-engaged institution – the first medical school campus to be so designated – both reflects and reinforces a genuine and unyielding commitment to its public mission.

Given its commitment to primary care and to educating the next generation of physicians, the Chan Medical School plays an important and unique role in helping to address the health care workforce needs of Massachusetts. The Chan Medical School has aligned itself with the Association of American Medical Colleges’ recommendation that medical schools increase the number of physicians they educate to help address the looming shortage of doctors, especially those in primary care fields, and has committed to expanding the T.H. Chan School of Medicine’s class size, opening up admissions to a select number of highly qualified out-of-state students and incrementally increasing the number of students in each class. As of Fall 2021, the entering class reached 162 students. This significant class size expansion initiative has necessitated identifying and partnering with additional clinical affiliates to ensure that the T.H. Chan School of Medicine continues to offer an outstanding educational experience. In 2015, the Chan Medical School entered into an affiliation with Cape Cod Hospital in Hyannis, and established its first-ever regional campus, UMass Chan-Baystate, in collaboration with Baystate Health in Springfield.

Consistent with its strategic plan and mission, the Chan Medical School supports a highly productive and collaborative research enterprise that attracts more than \$420 million annually in total external research funding, including \$168 million from the National Institutes of Health (“NIH”) in fiscal year 2021. The Chan Medical School ranked 38th out of 140 U.S. medical schools receiving NIH funding and 18th among all public medical schools receiving NIH funding according to the Blue Ridge Institute for Medical Research’s latest report.

In September 2020, the Board of Trustees approved the construction of a new \$325 million education and research building for the Chan Medical School. See “Current and Future Capital Plans”.

UMassOnline

In February 2001, the University launched UMassOnline to provide system-wide support and services for the University’s online education programs. While on-line program content and faculty are within an individual campus’ responsibility, UMassOnline supports the campuses in developing, growing and marketing online programs through providing technology support, development and training. In academic year 2020-2021, the University, through the five campuses, offered nearly 300 online degrees, certificates and continuing medical education programs. Beginning in fiscal year 2020, included among the online programs are 34 fully online degree and certificate programs, including a mix of undergraduate and graduate certificates, bachelor’s degrees, master’s degrees, and a doctorate within STEM, health care, business and criminal justice. In fiscal year 2021, UMassOnline and the Continuing Education units at the five campuses collaboratively generated tuition revenue of \$145.3 million and awarded 311,600 course credits.

UMass Global

In March 2019, the University’s President announced plans for a new online college that would serve adult learners, citing the need to preserve the University’s mission in the face of the demographic decline that is disrupting higher education in the United States. The University’s goals for the online initiative were to become a key workforce development partner to Massachusetts employers, increase economic mobility for Massachusetts residents, and generate revenue that would sustain the University over the next several decades, positioning UMass to lead through the coming disruption and emerge stronger. After a lengthy due diligence process that included vetting numerous possible partners, in June 2020, the University announced that it would enter into a strategic partnership with Brandman University (“Brandman”), a private nonprofit institution located in Irvine, California, then a part of the Chapman University System (“Chapman”). Brandman was originally formed in 1958 as a college within Chapman University, and provides online educational services to a range of adult learners. In September 2021, Chapman

APPENDIX A

transferred control of Brandman’s Board of Regents to the University, and the University became the sole corporate member of Brandman, now named UMass Global. UMass Global remains a California nonprofit public benefit corporation, accredited by the WASC Senior College and University Commission.

UMass Global maintains a robust and scalable service and technology platform, allowing for the delivery of a wide variety of primarily online certificate and degree programs efficiently and effectively, including employer-funded degree programs and competency-based education (CBE). UMass Global offers over 90 undergraduate, graduate (including two professional doctoral programs), credential, certificate, and non-degree credit programs in the fields of education, arts and sciences, business and professional studies, and nursing. These programs are offered through fully online and hybrid (online and face-to-face) modalities at the UMass Global campus in Irvine, California and at 24 satellite campuses located in California and Washington (including six United States military bases). UMass Global currently offers two associate degrees, 14 bachelor’s degrees, 17 master’s degrees, and two professional doctorate degrees, as well as 19 graduate and undergraduate certificates, 10 teaching credentials, and six education-related authorizations. In addition, UMass Global offers four direct assessment CBE programs. As of September 1, 2021, UMass Global had 13,944 enrollments (i.e., the number of course enrollments by all students), and provided educational services to students across 45 states.

In consideration for the change in control of its Board of Regents to the University, UMass Global has agreed to make payments to Chapman over a 10-year period, of up to \$99.3 million. The University has agreed to make any payments that UMass Global fails to make when due. Based on current UMass Global revenue projections, sufficient operating margin surplus is projected over the next 10-years, including after payment to Chapman for the purchase price of the former Brandman facility, such that the University does not expect that any such financial support will be necessary. In accordance with its bylaws, UMass Global cannot incur indebtedness in excess of \$15 million in a single transaction or a series of related transactions, or in excess of \$50 million in the aggregate outstanding at any time, without the affirmative vote of the University, as its sole corporate member.

The University of Massachusetts Club

The University, acting through UMBA, has established an Alumni dining club, the University of Massachusetts Club. The Club opened in 2005 and is now located on the 32nd floor of One Beacon Street in Downtown Boston. The Club is managed by a not-for-profit organization, University Services, Inc., which is governed by a board that includes both University and UMBA appointees and personnel.

UNIVERSITY RELATED ORGANIZATIONS

The financial statements of the University include the University and certain other organizations that have a significant relationship with the University. The financial statements include the University’s blended component units, which are UMBA, the Worcester City Campus Corporation (“WCCC”), a tax-exempt organization under Section 501(c)(3) of the Internal Revenue Code of 1986, as amended, and the University of Massachusetts Amherst Foundation, Inc. (the “UMass Amherst Foundation”), a tax-exempt organization that was established in 2003. Through its Board of Directors, the UMass Amherst Foundation leads and supports private fundraising on behalf of UMass Amherst faculty, students and facilities.

As described in the front part of this Official Statement, the purposes of UMBA are to provide dormitories, dining commons and other buildings and structures for use by the University and other entities associated with the University and to issue bonds to finance such projects. The University created WCCC in 1992 to purchase various assets of Worcester City Hospital, to operate as a real estate holding company, and to foster and promote the growth, progress, and general welfare of the Worcester Campus and all of its locations. The subsidiaries of WCCC include Worcester Campus Services, Inc. (“WCS”) and U Health Solutions, Inc. (formerly Public Sector Partners, Inc.). WCS has 12 real estate holding company subsidiaries.

The University’s discretely presented component units are the University of Massachusetts Foundation, Inc. (the “Foundation”) and the University of Massachusetts Dartmouth Foundation, Inc. (the “Dartmouth Foundation”). These foundations are tax-exempt organizations related to the University and were established 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, or in the case of the Dartmouth Foundation, for the purposes of the Dartmouth Campus. The Foundation manages the majority of the University's endowments, including the endowment of the UMass Amherst Foundation and the Dartmouth Foundation. Separate financial statements are presented for the Foundation and the Dartmouth Foundation.

GOVERNANCE

Under the General Laws of the Commonwealth (the "General Laws"), the University is governed by a Board of Trustees (the "University Trustees" or the "Board of Trustees") under the coordinating authority of the Commonwealth's Department of Higher Education ("DHE"). The day-to-day operations of the University are directed by a team of administrative officers of the University, the chief executive officer being the President of the University (the "President").

The General Laws give the University Trustees the authority to govern the University and to appoint the President, the Chancellors (the senior administrative officers of each campus), and other officers and members of the professional staff. The General Laws also grant to the University Trustees the legal right to establish and manage non-appropriated funds, including, for example, tuition, certain student fees, grants and contracts, and funds used to support certain self-sufficient operations within the University. See "University Revenues and Budgeting" below. The University Trustees consist of 19 voting members and three non-voting members (each a "Trustee"). Seventeen voting members of the University Trustees are appointed by the Governor of the Commonwealth (the "Governor"). One of these appointees is the Commonwealth's Secretary of Education, as mandated by Chapter 27 of the Acts of 2008, at least five of those appointed must be alumni of the University, and one must be a representative of organized labor. Two of the voting members are full-time students of the University and three additional full-time students act as non-voting members. The student members are elected annually from each of the five campuses and the two voting student positions are rotated annually among the members representing the five campuses. The University Trustees, except for the student members, serve five-year staggered terms, and are eligible for reappointment for an additional five-year term.

The President is responsible for implementing the policies of the University Trustees and for providing leadership for the activities and operations of the University. The President's Office is responsible for the development of academic and financial policies, overall coordination of University activities, and certain University-wide operational activities, including Internal Audit, the General Counsel's office, the Treasurer's and Controller's functions, Information Systems, Human Resources, and the Unified Procurement Services Team ("UPST").

Department of Higher Education

The University is subject to the coordinating authority of the DHE, which has the statutory responsibility to develop, foster and advocate for the public higher education system in Massachusetts (which consists of the University, nine state universities, and 15 community colleges), to review and establish tuition at the state universities and the community colleges (but not the University), to approve changes in academic programs at the state universities and the community colleges, and to collaborate with the public institutions of higher education in order to identify and define institutional missions.

The Board of the DHE consists of 13 voting members; one of whom is the Commonwealth's Secretary of Education, nine members appointed by the Governor reflecting regional geographic representation, and three members chosen to represent public institutions of higher education. Of the members appointed by the Governor, at least one must be a representative of organized labor, one must be a representative of the business community, and one must be a full-time undergraduate student at a public institution of higher education. Of the members chosen to represent public institutions of higher education, one must be a member of the University Trustees, chosen by a vote of the University Trustees, one must be a member of a board of trustees of a state university, chosen by vote of the chairs of the boards of trustees of each of the state universities, and one must be a member of a board of trustees of a community college, chosen by vote of the chairs of the boards of trustees of each of the community colleges. Three of the DHE members appointed by the Governor are appointed for terms coterminous with that of the Governor. The undergraduate members of the Board of the DHE are appointed annually. The remaining members are appointed to serve five-year terms. The chairperson of the Board of the DHE is selected by the Governor.

APPENDIX A

Board of Trustees

The current members and officers of the University Trustees, their original appointment dates and the year of expiration of their respective current terms are set forth below. The term expiration date is typically September 1 of the applicable year; however, Trustees generally continue to serve until a successor Trustee is appointed.

Name and Position; Month and Year Initially Appointed	Current Term Expiration Date
Robert J. Manning, <i>Board of Trustees Chair</i> , Swampscott <i>Appointed August 2015</i> Chairman and Co-CEO, MFS Investment Management	2021*
R. Norman Peters, Esq., <i>Board of Trustees Vice Chair</i> , Paxton <i>Appointed September 2009</i> Partner, Peters & Sowyrda	2019*
Joshua P. Bates, Sandwich <i>Non-Voting Student Member, Appointed April 2021</i> University of Massachusetts, Boston	2022
Barkha Bhandari, Amherst <i>Non-Voting Student Member, Appointed April 2021</i> University of Massachusetts, Amherst	2022
Mary L. Burns, Lowell <i>Appointed December 2016</i> Principal, Splash Media Group Boston, LLC	2026
Zachary S. Dyer, Worcester <i>Non-Voting Student Member, Appointed April 2021</i> University of Massachusetts, Chan Medical School	2022
Robert Epstein, Boston <i>Appointed September 2015</i> President & CEO, Horizon Beverage Group	2025
Derek S. Houle, Bellingham <i>Voting Student Member, Appointed April 2021</i> University of Massachusetts, Lowell	2022
Stephen R. Karam, Fall River <i>Appointed September 2017</i> Principal, Karam Financial Group	2022
Richard M. Kelleher, Duxbury <i>Appointed April 2019</i> Chairman, Pyramid Group	2023
Narcisse M. Kunda, Marlborough <i>Voting Student Member, Appointed April 2021</i> University of Massachusetts, Dartmouth	2022
Robert Lewis, Jr., Boston <i>Appointed June 2020</i> Founder & President, The Base	2022
Michael V. O'Brien, Southborough <i>Appointed December 2016</i> Vice President, WinnCompanies	2021*

* Serves until a successor Trustee is appointed.

Name and Position; Month and Year Initially Appointed	Current Term Expiration Date
Noreen C. Okwara, M.D., Lowell <i>Appointed September 2018</i> Internal Medicine Resident, Brigham & Women's Hospital	2023
Kerri E. Osterhaus-Houle, M.D., Hudson <i>Appointed September 2007</i> Partner, Women's Health of Central Massachusetts, PC	2018*
Imari K. Paris Jeffries, M.Ed., M.A., Boston <i>Appointed December 2016</i> Executive Director, Parenting Journey	2026
James A. Peyser, MALD, Milton <i>Appointed January 2015</i> Secretary of Education, Executive Office of Education Commonwealth of Massachusetts	<i>Serves Ex-Officio</i>
Julie M. Ramos Gagliardi, Somerset <i>Appointed June 2020</i> First Vice President, Corporate Giving & Community Relations, BayCoast Bank	2024
Elizabeth D. Scheibel, South Hadley <i>Appointed November 2016</i> Principal/Consultant, Scheibel Associates	2026
Steven A. Tolman, Brighton <i>Appointed September 2017</i> President, Massachusetts AFL-CIO	2022
Victor Woolridge, Springfield <i>Appointed November 2009</i> Vice President, Barings	2019*
Charles F. Wu, MBA, Newton <i>Appointed December 2016</i> Senior Lecturer, Harvard Business School Founding Partner, BayNorth Capital, LLC	2026

* Serves until a successor Trustee is appointed.

Administrative Officers

The following is a list of the current administrative officers of the University.

Martin T. Meehan, J.D.

Martin T. Meehan, J.D., began his term as President of the University on July 1, 2015. Mr. Meehan had previously served as the Chancellor of the Lowell Campus since July 2007. Prior to that, Mr. Meehan represented the Fifth Congressional District of Massachusetts in the U.S. House of Representatives since 1993. He has also served as the First Assistant District Attorney for Middlesex County from 1991 to 1992. Mr. Meehan was also the Director of Public Affairs for the Massachusetts Secretary of the Commonwealth, and the Deputy Secretary of State for Securities and Corporations from 1986 to 1990. Mr. Meehan earned his B.S. in Education and Political Science from the University of Massachusetts, Lowell, a Master's degree in Public Administration from Suffolk University, and a J.D. degree from Suffolk University Law School. He holds honorary degrees from Suffolk University, and Shenkar College of Engineering & Design in Israel.

James R. Julian, Jr., J.D., Executive Vice President and Chief Operating Officer

James R. Julian, Jr., J.D., has been the Executive Vice President of the University since January 1996. Prior to joining the University, he served as Chief of Staff and Counsel for the former Massachusetts Senate President,

APPENDIX A

William M. Bulger, from 1991 to 1996. He holds a B.S. degree in Political Science from Suffolk University and a J.D. degree from the New England School of Law.

Katherine S. Newman, Ph.D., System Chancellor for Academic Programs

Katherine Newman, Ph.D, was appointed System Chancellor for Academic Programs in August 2020. She also serves as the Senior Vice President for Economic Development and the Torrey Little Professor of Sociology at UMass Amherst. Dr. Newman previously was the Interim Chancellor of UMass Boston, Senior Vice President of the University of Massachusetts system, the Provost of UMass Amherst and prior to that, the James B. Knapp Dean of the Arts and Sciences at Johns Hopkins University. Dr. Newman has served as the Forbes Class of 1941 Professor of Sociology and Public Affairs and Director of the Institute for International and Regional Studies at Princeton University, the founding Dean of Social Science at the Radcliffe Institute of Advanced Study, and the director of Harvard University's Multidisciplinary Program on Inequality and Social Policy, where she served as the Malcolm Weiner Professor of Urban Studies in the Kennedy School of Government. She taught for 16 years in the Department of Anthropology at Columbia University, and for two years in the School of Law at the University of California Berkeley. Dr. Newman holds a B.A. in Philosophy and Sociology from the University of California, San Diego, and a Ph.D. in Anthropology from the University of California, Berkeley.

Lisa A. Calise, Senior Vice President for Administration & Finance and Treasurer

Lisa A. Calise was appointed to the position of Senior Vice President for Administration & Finance and Treasurer in February 2017. Prior to joining the University, Ms. Calise was the Chief Financial Officer at Perkins School for the Blind, focusing on global services and education for those living with blindness and deafblindness. Before joining Perkins in 2010, Ms. Calise served the City of Boston for over a decade, including as the Director of Administration and Finance, and as Chief Financial Officer and Collector-Treasurer and Budget Director, implementing efficiency improvements and managing the City's finances through challenging economic times. Prior to coming to Boston, Ms. Calise served in the White House Office of Management and Budget as a budget examiner. Ms. Calise has served as a member of both the Massachusetts Bay Transportation Authority (MBTA) Fiscal and Management Control Board, and the Massachusetts Department of Transportation Board. Ms. Calise holds a B.A. degree from Boston College and a Master's Degree in Public Management from the University of Maryland.

Gerard T. Leone, Jr., General Counsel

Gerard T. Leone began his term as General Counsel on June 28, 2017. Mr. Leone was previously the Vice President of People Development at Consigli, Inc. from 2015 to 2017. Prior to that, Mr. Leone was a partner at the Boston-based international law firm, Nixon Peabody LLP from 2013 to 2015, focusing on government investigations, white collar defense, and several other subject matter areas including higher education, where UMass was one of his clients. He has also served as the two-term elected District Attorney for Middlesex County from 2007 to 2013. While running for office from 2005 to 2007, Mr. Leone was also the Regional Director and General Counsel to Vance Garda, an international consulting firm, focused on Compliance, Risk Management, Anti-Terrorism, Executive Protection and Security and Safety issues. From 2001 to 2005, Mr. Leone served as the District of Massachusetts United States Attorney's Office First Anti-Terrorism Coordinator and First Assistant United States Attorney. Prior to that appointment, Mr. Leone served as the Chief of the Criminal Bureau, Office of the Massachusetts Attorney General. Mr. Leone earned his B.S. degree in American Political History from Harvard University in 1985, and holds a 1989 J.D. degree from Suffolk University Law School.

Kumble R. Subbaswamy, Ph.D., Chancellor, Amherst Campus

Kumble R. Subbaswamy, Ph.D., became the Chancellor of the Amherst Campus in July 2012. Dr. Subbaswamy previously served as provost at the University of Kentucky since 2006. He joined the University of Kentucky's physics faculty in 1978 after serving as a post-doctoral fellow at the University of California, Irvine. During his first 18 years at the University of Kentucky, he served as Associate Dean of Arts and Sciences and as chair of the Department of Physics and Astronomy. Dr. Subbaswamy served as Dean of the College of Arts and Sciences at the University of Miami from 1997 to 2000, when he left to become Dean of Arts and Sciences at Indiana University in Bloomington, where he served until 2006. Dr. Subbaswamy holds a B.S. degree in Physics from Bangalore University, an M.S. degree in Physics from Delhi University, and a Ph.D. degree in Physics from Indiana University.

Marcelo Suárez-Orozco, Ph.D., Chancellor, Boston Campus

Marcelo Suárez-Orozco, Ph.D., was appointed Chancellor of the Boston Campus in February 2020 and assumed the position in August 2020. Prior to his appointment, Dr. Suárez-Orozco served as the inaugural University of California, Los Angeles (UCLA) Wasserman Dean, where he led two academic departments, 16 nationally renowned research institutes, and two innovative demonstration schools at UCLA's Graduate School of Education & Information Studies. Prior to joining UCLA, Dr. Suárez-Orozco was a professor at Harvard University, where he served as the Victor S. Thomas Professor of Education, Co-Founder and Co-Director of the Harvard Immigration Project, and founding Member of the Executive Committee of the David Rockefeller Center for Latin American Studies, and at New York University, where he served as the inaugural Courtney Sale Ross University Professor of Globalization and Education. He is a member of the American Academy of Arts and Sciences (currently serving in the Governance and Trust Board), the National Academy of Education, and the Board of Advisors of the Thomas Mann House, and a Trustee of the Carnegie Foundation for the Advancement of Teaching. Dr. Suárez-Orozco received his A.B., M.A. and Ph. D. (Anthropology) from University of California, Berkeley.

Mark A. Fuller, Ph.D., Chancellor, Dartmouth Campus

Dr. Mark A. Fuller was appointed Chancellor of UMass Dartmouth on August 9, 2021, after serving as Interim Chancellor since January 19, 2021. A first-generation college student, Dr. Fuller is a passionate advocate for public education. Dr. Fuller comes to the Dartmouth Campus from UMass Amherst, where he served as Vice Chancellor for Advancement for the last three years, following nine years as the Dean and Thomas O'Brien Endowed Chair at the Isenberg School of Management. Under his leadership, the Isenberg School moved up more than 25 positions between 2013 and 2018 in the *U.S. News & World Report* rankings and its online MBA program was ranked by the *Financial Times* as the #1 program in the nation, and the #3 program in the world. Prior to joining UMass Amherst in 2009, Dr. Fuller held faculty positions at Washington State University and Baylor University. He has extensive experience in curriculum development and program management at the undergraduate, MBA, Executive MBA, and Ph.D. level, and has significant expertise in distance education. Dr. Fuller received his M.S. in Management and Ph.D. in Management Information Systems from the University of Arizona's Eller College of Management.

Jacqueline Moloney, Ed. D., Chancellor, Lowell Campus

Jacqueline Moloney, Ed.D, was appointed Chancellor of the Lowell Campus in August 2015. Previously, Dr. Moloney served as Executive Vice Chancellor of the Lowell Campus since 2007. Prior to becoming Executive Vice Chancellor, Dr. Moloney served as Dean of the Division of Online and Continuing Education at UMass Lowell since 1994 and Executive in Residence for UMassOnline since 2000. Dr. Moloney also served as Dean of University College and Director of the Centers for Learning at UMass Lowell from 1990 to 1994. Dr. Moloney received a B.S. degree in Sociology from UMass Lowell, an M.A. degree in Social Psychology from Goddard College, and an Ed.D. degree from UMass Lowell. Dr. Moloney has announced her intention to retire at the end of the 2021-2022 academic year. The University has launched a national search for the next Chancellor of the Lowell Campus.

Michael F. Collins, M.D., Chancellor, Worcester Campus and Senior Vice President for Health Sciences

Michael F. Collins, M.D., was appointed Chancellor of the Worcester Campus, where he also serves as professor of quantitative health sciences and medicine, in September 2008, after serving as interim Chancellor of the Worcester Campus from June 2007 to September 2008. In June 2007, Dr. Collins was appointed Senior Vice President for Health Sciences at the University. Dr. Collins served as Chancellor of the UMass Boston Campus from 2005 through 2007. Prior to joining the University, Dr. Collins served as President and Chief Executive Officer of Caritas Christi Health Care from 1994 to 2004 and from 1994 to 2001 he served as President of St. Elizabeth's Medical Center in Brighton, a university academic medical center affiliated with Tufts University School of Medicine. A board-certified physician in internal medicine and a Fellow of the American College of Physicians, Dr. Collins has held a number of faculty and academic leadership positions over the course of his career. At Texas Tech University Health Sciences Center, his posts included Assistant Professor of Internal Medicine and Assistant Dean for Patient Care Resources. At Tufts University, he served as Clinical Professor of Internal Medicine and Associate Dean of Government and Medical Affairs in the School of Medicine and as a senior fellow at the Jonathan M. Tisch College of Citizenship and Public Service. Dr. Collins received a B.A. degree from the College of the Holy Cross and an M.D. degree from Tufts University School of Medicine.

APPENDIX A

Faculty and Staff

The University had 5,854 faculty members for Fall 2021, including 4,265 full-time faculty. Of the total faculty, 30.6% were tenured, 11.9% were on a tenure track, and the remaining 55.5% were not on a tenure track. University faculty have received some of the world's most prestigious awards and honors, including the MacArthur Fellowship, the Pulitzer Prize, the National Book Award and the Nobel Prize. University faculty also include National Science Foundation grant winners and Fulbright Scholars. The University also had 11,497 staff members for Fall 2021, of which 94.8% were full-time. The University student FTE to faculty FTE ratios, excluding continuing education, range from 15:1 to 18:1 across the campuses (excluding the Worcester Campus).

UNIVERSITY RESPONSE TO COVID-19

If and when included in this Official Statement, including in this Appendix A, the words “expects,” “forecasts,” “projects,” “intends,” “anticipates,” “estimates,” “assumes” and analogous expressions are intended to identify forward looking statements. Any such statements inherently are subject to a variety of risks and uncertainties, certain of which are beyond the control of the University, including the impacts from the COVID-19 pandemic as discussed below, which could cause actual results to differ materially from those that have been projected. Due to the unprecedented nature of the COVID-19 pandemic, prior fiscal year, interim and year-end results included in this Appendix A may not be indicative of current or future fiscal year, interim and year-end results.

In response to the outbreak of COVID-19, a respiratory disease caused by a new strain of coronavirus, and the declaration by the World Health Organization on March 11, 2020 of a COVID-19 pandemic, in March 2020 Governor Baker declared a state of emergency in the Commonwealth due to COVID-19. Over the following eight weeks Governor Baker's administration undertook a number of mitigation measures in response to COVID-19, including emergency orders closing certain education programs and non-essential businesses, a number of social distancing mandates, travel advisories, and eviction moratoriums, as well as tax relief measures postponing the collection of certain taxes due in fiscal 2020. All of these measures resulted in widespread social and economic disruption throughout the Commonwealth.

As the COVID-19 pandemic continued to evolve, Governor Baker's administration curtailed certain measures while retaining the flexibility to address future waves of the pandemic. In May 2020, the Governor announced a four-phase approach to reopening the Commonwealth. Between May and October 2020, as public health metrics improved, the phased reopening plan was implemented in steps, and certain mitigation measures were curtailed. In December 2020, the Commonwealth rolled back its reopening requirements and standards to an earlier step of the plan in response to an increase in new COVID-19 infections and hospitalizations following the 2020 Thanksgiving holiday. In December 2020, the Commonwealth also began phased vaccination efforts across Massachusetts.

As public health measures continued to trend in a positive direction, and the Commonwealth experienced significant declines in average daily COVID-19 cases and hospitalizations, and increasing rates of vaccination within the Commonwealth, the Commonwealth continued to implement the reopening plan, and by the end of May 2021, nearly all COVID-19 restrictions were lifted and all industries were permitted to open. On June 15, 2021, the state of emergency in the Commonwealth related to COVID-19 was terminated.

As the COVID-19 pandemic unfolded, the University's first priority was to protect the students, faculty, and staff at each of the campuses. After a period of intense planning with the campus Chancellors, on March 11, 2020, President Meehan announced that the five UMass campuses would shift to a virtual mode of instruction beginning March 16, 2020, and students were required to vacate residence halls, with certain exceptions for students without alternative housing. For the remainder of the Spring 2020 term, the five UMass campuses and the President's Office were vacated with the exception of certain essential personnel.

In mid-March 2020, the University's administration and finance staff began assessing the financial impact of COVID-19. Initial efforts focused on estimating the value of room and board adjustments due to the closing of University-owned student residence halls, including the timing and logistics for implementation. On March 27, 2020, the President of the United States signed the Coronavirus Aid, Relief, & Economic Security Act (“CARES Act”) into

law. The CARES Act established the Higher Education Emergency Relief Fund, which allocated \$46 million of funding to UMass, 50% of which was to be used for student financial aid and 50% of which could be used for institutional support. Also on March 27, 2020, the University announced that student room, board and parking fees for University-owned facilities would be adjusted following the closure of student residence halls in response to COVID-19. These room and board adjustments resulted in a decrease of \$63.5 million in revenue for fiscal year 2020.

The total financial impact of COVID-19 on fiscal year 2020 operations was approximately \$114 million. The University identified \$77 million of adjustments and cost savings in order to bring the fiscal year 2020 budget into balance. These measures included \$14 million of CARES Act funding, \$6 million of savings due to personnel furloughs, voluntary separations, and vacation usage, and \$56 million of savings resulting from other measures, including vacant positions and non-personnel spending. Due to better than budgeted operating performance in the first three fiscal quarters of fiscal year 2020, the University ended fiscal year 2020 with an operating surplus of \$37.5 million.

The COVID-19 pandemic continued to impact University operations in fiscal year 2021 and required continued operational solutions to preserve a balanced budget. Instruction and overall campus operations for Fall 2020 continued remotely. Students were allowed to return to the campuses in Spring 2021, but instruction was still remote. The University was able to maintain fiscal year 2021 operating revenue at \$3.44 billion, compared to \$3.46 billion in fiscal year 2020, reflecting the University's hard work in managing the continued pandemic impacts. Without the receipt of federal stimulus funds of \$88.4 million, of which \$58.4 million was for institutional support, total fiscal year 2021 revenue would have been below that for fiscal years 2020 and 2019.

The fiscal year 2021 budget, as adopted by the Board of Trustees in July 2020, assumed varying Fall 2020 operating plans across the UMass campuses, with a range of in-person, hybrid, and remote learning modalities, varying residential populations, and enhanced health surveillance and testing, enhanced facility cleaning processes, and social distancing, isolation and quarantine protocols. Campuses were subsequently required to adjust their operating plans and reduce projected on-campus populations for Fall 2020 in response to an increase in COVID-19 virus activity in New England, as noted above. These changes resulted in additional auxiliary revenue loss which the campuses offset with additional budget solutions to achieve a balanced budget for fiscal year 2021. While Spring 2021 on-campus student populations were higher than for Fall 2020, the increases were still well below normal campus capacities. Instruction remained remote for Spring 2021. Enrollment levels at the Amherst, Boston and Lowell Campuses were higher than Spring 2021 enrollment estimates; enrollment at the Dartmouth Campus in Spring 2021 was slightly below the enrollment estimate. Enhanced health surveillance, social distancing protocols and enhanced cleaning continued.

The fiscal year 2022 budget, adopted by the Board of Trustees on June 10, 2021, reflects the campuses returning to normal academic and student life activities, staffing levels increasing consistent with the campuses being open, and the receipt of federal stimulus funds. Fall 2021 enrollment assumptions were budgeted at 0.7% below Fall 2020 levels, driven by the assumption that first year undergraduate enrollment would decline. Actual Fall 2021 enrollment was lower than the budgeted assumption, with an actual Fall 2021 FTE enrollment at 2.0% lower than Fall 2020. See "Enrollment". Tuition for in-state undergraduates and in-state graduates for fiscal year 2022 again was held at fiscal year 2020 levels.

The University continues to be committed to maintaining a balanced budget in fiscal year 2022, and to date, based on fiscal year 2022 first quarter results and with adjustments made to the budget to date, the University currently expects to be able to achieve this goal. Among other adjustments, adjustments were made to the first quarter projection to reflect increased enrollment and occupancy levels from budget assumptions for the Amherst Campus, decreased enrollment levels from budget assumptions for the Boston and Lowell Campuses, and increased enrollment and decreased occupancy levels from budget assumptions for the Dartmouth Campus. Capital projects previously placed on hold due to the uncertainties of the pandemic have been allowed to move forward under the University's updated capital plan adopted by the Board of Trustees in September 2021.

The University received a total of \$145 million of institutional federal stimulus aid which was used in fiscal years 2020 and 2021, and planned for use in fiscal year 2022, with a small amount assumed for fiscal year 2023, to offset declines in housing and dining revenues as the campuses continue to adjust operations.

APPENDIX A

For fiscal year 2022, campuses assumed normal on-campus populations and transitioned back to primarily in-person instruction given that students, staff and faculty were required to be fully vaccinated. Campuses maintained targeted surveillance testing for populations who received an exemption from being vaccinated, and continued appropriate health, social distancing, isolation and quarantine protocols.

Due to the level of uncertainty caused by the COVID-19 pandemic, the University expects to continue to monitor and revise, as necessary, the fiscal year 2022 budget to keep it balanced. The University's goal is to maintain a balanced budget for fiscal year 2023, as it undertakes the next budgeting cycle. The University expects to continue to identify actions that may be taken to help mitigate the expected adverse impacts on the University and its programs due to COVID-19.

STRATEGIC INITIATIVES

Under the leadership of President Meehan and the University Trustees, the University is engaged in a series of strategic initiatives identified as a result of an interactive, collaborative process between the President's Office and campus leadership directed toward the following:

- ***A World Class Public University*** – UMass is committed to offering students a high-quality education and a transformative student experience. Efforts to date have resulted in UMass graduates from every campus earning higher starting salaries than graduates from at least 56% of all other Massachusetts colleges and universities. The internationally renowned faculty at UMass are a driving force for revolutionary research, development and discovery. Endowed chairs and professorships have helped attract top scholars to the University and support teaching and research efforts.
- ***Financial Accountability Framework*** – The University is committed to fiscal oversight, internal controls, risk management, and transparency. The framework is governed by the following goals:
 - Ensure financial sustainability and mitigate risk – including initiatives on financial sustainability, capital strategy, risk management and tax compliance. An example of this is the University's system-wide enterprise risk management program that coordinates through a formal governance structure, and regularly collaborates with campus risk and emergency management partners, such as the Office of the General Counsel and Internal Audit. The program facilitates the maintenance of a University-wide Risk Registry, which proactively identifies, assesses, and prioritizes risks across the University, providing transparency and a shared understanding of risks at both leadership and operational levels, and building capacity and networks to address critical risks and methods to determine the effectiveness of the strategies.
 - Deliver efficient operations to ensure access and affordability for students - including initiatives on shared services and operational improvements. An example of this is the Unified Procurement Services Team (UPST), which recently celebrated two years of creating efficiency and effectiveness for the University. The UPST, which was established in January 2020, has helped achieve \$33.9 million in cost savings through more than 170 initiatives across all five campuses. To continue achieving its mission of providing “better, faster, cheaper” services to the University, UPST has developed a robust pipeline of process improvements and cost savings projects. UPST continues to focus on driving system-wide contracts, creating efficiencies for all campuses.
 - Improve capacity to deliver financial, administrative and other service objectives to the University community - including initiatives focused on providing the requisite analysis of the issues presented, human resource impacts, and financial reporting. An example of this is the University's five-year financial forecast presented in December of each year, which improves transparency, identifies areas for further analysis during the budget development process, and provides sensitivity analysis to demonstrate variances in major assumptions (e.g., enrollment and residential occupancy).
- ***Educating the Massachusetts Workforce*** – The University is a significant contributor to the Massachusetts workforce. UMass fuels the economy, not just by educating students, but in ensuring that University

graduates have the requisite skills today's high-profile, in-demand jobs require. UMass educates nearly three times as many Massachusetts residents as the top eight Massachusetts private universities combined, graduating over 18,000 students each year.

- ***Life Changing Research*** – Through its distinguished research programs, UMass is anchoring significant economic development in all parts of the Commonwealth. In fiscal year 2020, UMass conducted \$687 million in research in areas critical to the Massachusetts economy, including the life sciences, engineering, computer and data science, education, and climate science. Much of the research at UMass has the potential to be commercialized, often leading to spin-off private companies and new products.
- ***Driving the State Economy*** – UMass is a vital economic driver in all regions of the Commonwealth, generating billions in economic impact each year. UMass is the third largest employer in the Commonwealth and generates \$7.5 billion in annual economic activity.

ACADEMIC PROGRAMS AND ACCREDITATION

The University offers a broad spectrum of academic programs across its campuses, granting Bachelor of Arts degrees in over 60 fields, Bachelor of Science degrees in over 50 fields, and bachelor's degrees in a number of other areas, including Fine Arts and Business Administration. Master of Arts degrees are granted in more than 25 fields, Master of Science degrees are granted in over 45 fields, and a variety of other master's degrees are granted in specialized areas including Education, Teaching, Business Administration and Public Health. In addition, the University grants Doctor of Philosophy degrees in over 50 fields, as well as Doctor of Education, Doctor of Science, Doctor of Engineering, Doctor of Audiology, Doctor of Nursing Practice, Doctor of Physical Therapy, Juris Doctor and Doctor of Medicine degrees. The academic resources of the University are also accessible to part-time students, to local, national and international businesses, and to the general community through the continuing education programs.

Each campus of the University is accredited by the New England Commission of Higher Education ("NECHE"), the major accrediting body for institutions of higher education in New England. The campuses are accredited through the years indicated: Amherst Campus – 2028; Boston Campus – 2025; Dartmouth Campus – 2030; Lowell Campus – 2023; and Worcester Campus – 2022. The Medical School at the Worcester Campus is a member of the Association of American Medical Colleges and was given full accreditation through 2028 by the Liaison Committee on Medical Education ("LCME"), the major accrediting body for programs leading to the M.D. degree. Following a site visit in Spring 2020 by the ABA accreditation team, the Law School's accreditation was renewed for 10 years. In addition to the foregoing, individual schools and academic programs are accredited by the appropriate agencies in their particular fields.

The University is also an institutional member of numerous organizations of higher learning and professional societies, including, among others, the Association of American Colleges, the Association of Public and Land-Grant Universities, the American Council on Education, the American Association of Colleges for Teacher Education, the American Association of Colleges of Nursing, the Council of Colleges of Arts and Sciences, and the New England Board of Higher Education.

[Remainder of this page intentionally left blank.]

APPENDIX A

ENROLLMENT

Admission to the University is open to residents and non-residents of the Commonwealth on a competitive basis. Massachusetts residents accounted for 82.3% and 51.2% of the University’s total undergraduate and graduate enrollment, respectively, during Fall 2021.

For Fall 2021, total FTE enrollment at the University (including continuing education but not including UMass Global) was 64,785, representing a decrease of 1.9% from Fall 2020. See “University Response to COVID-19”.

Total FTE Enrollment, Fall 2017-2021

Enrollment Type	<u>2017</u>	<u>2018</u>	<u>2019</u>	<u>2020</u>	<u>2021</u>
Undergraduate	51,642	52,646	53,095	52,633	50,721
Graduate	<u>12,889</u>	<u>12,664</u>	<u>12,908</u>	<u>13,437</u>	<u>14,064</u>
Total	64,531	65,310	66,003	66,070	64,785

Head Count Enrollment

The following tables show opening head count enrollment for the University as a whole, and at each campus, as of the University’s Fall semester for the academic years shown.

Total Headcount Enrollment

Enrollment Type	Fall				
	<u>2017</u>	<u>2018</u>	<u>2019</u>	<u>2020</u>	<u>2021</u>
In-state undergraduate	46,924	47,200	47,754	46,987	45,428
Out-of-state undergraduate	9,905	9,869	9,610	9,958	9,790
In-state graduate	9,351	9,344	9,461	9,935	9,909
Out-of-state graduate	<u>8,392</u>	<u>8,292</u>	<u>8,240</u>	<u>8,551</u>	<u>9,427</u>
Total	74,572	74,705	75,065	75,431	74,554

Amherst Campus

Enrollment Type	Fall				
	<u>2017</u>	<u>2018</u>	<u>2019</u>	<u>2020</u>	<u>2021</u>
In-state undergraduate	17,846	17,879	18,551	18,627	18,393
Out-of-state undergraduate	5,542	5,636	5,658	5,606	5,838
In-state graduate	2,423	2,515	2,605	2,798	2,845
Out-of-state graduate	<u>4,529</u>	<u>4,563</u>	<u>4,536</u>	<u>4,611</u>	<u>4,969</u>
Total	30,340	30,593	31,350	31,642	32,045

Boston Campus

Enrollment Type	Fall				
	<u>2017</u>	<u>2018</u>	<u>2019</u>	<u>2020</u>	<u>2021</u>
In-state undergraduate	10,720	10,871	10,851	11,147	10,738
Out-of-state undergraduate	1,945	1,833	1,744	1,723	1,531
In-state graduate	2,415	2,230	2,228	2,320	2,135
Out-of-state graduate	<u>1,335</u>	<u>1,230</u>	<u>1,166</u>	<u>1,069</u>	<u>1,233</u>
Total	16,415	16,164	15,989	16,259	15,637

Dartmouth Campus

Enrollment Type	Fall				
	<u>2017</u>	<u>2018</u>	<u>2019</u>	<u>2020</u>	<u>2021</u>
In-state undergraduate	6,142	6,107	5,673	5,350	5,179
Out-of-state undergraduate	621	734	732	677	654
In-state graduate	1,018	1,064	1,104	1,149	1,123
Out-of-state graduate	<u>625</u>	<u>608</u>	<u>645</u>	<u>693</u>	<u>761</u>
Total	8,406	8,513	8,154	7,869	7,717

Lowell Campus

Enrollment Type	Fall				
	<u>2017</u>	<u>2018</u>	<u>2019</u>	<u>2020</u>	<u>2021</u>
In-state undergraduate	12,216	12,343	12,679	11,863	11,118
Out-of-state undergraduate	1,797	1,666	1,476	1,952	1,767
In-state graduate	2,714	2,721	2,693	2,800	2,964
Out-of-state graduate	<u>1,589</u>	<u>1,520</u>	<u>1,490</u>	<u>1,754</u>	<u>2,014</u>
Total	18,316	18,250	18,338	18,369	17,863

Worcester Campus

Enrollment Type	Fall				
	<u>2017</u>	<u>2018</u>	<u>2019</u>	<u>2020</u>	<u>2021</u>
Medical School	565	617	643	670	663
Other	<u>530</u>	<u>568</u>	<u>591</u>	<u>622</u>	<u>629</u>
Total†	1,095	1,185	1,234	1,292	1,292

† Does not include the head count of registrants in the various continuing medical education programs offered at the Worcester Campus.

The following tables provide aggregate data for the campuses (except the Worcester Campus) on University applications, acceptances and matriculations for first year undergraduates and for transfer students for the Fall semesters 2017 through 2021.

First Year Applicants, Acceptances and Matriculants, Fall 2017-2021

	Fall				
	<u>2017</u>	<u>2018</u>	<u>2019</u>	<u>2020</u>	<u>2021</u>
Applications Received	71,495	74,333	78,615	77,299	80,611
Number of Acceptances	46,334	49,584	52,895	53,787	58,619
Percent of Applicants Accepted	65%	67%	67%	70%	73%
Number of Matriculants	9,925	10,832	11,530	10,577	10,226
Percent Matriculated of Those Accepted	21%	22%	22%	20%	17%

Transfer Student Applicants, Acceptances and Matriculants, Fall 2017-2021

	Fall				
	<u>2017</u>	<u>2018</u>	<u>2019</u>	<u>2020</u>	<u>2021</u>
Applications Received	9,980	10,900	10,302	9,823	9,846
Number of Acceptances	8,001	7,815	7,229	6,886	6,816
Percent of Applicants Accepted	80%	72%	70%	70%	69%
Number of Matriculants	4,777	4,538	4,199	3,917	3,777
Percent Matriculated of Those Accepted	60%	58%	58%	57%	55%

As shown in the tables above, although the University experienced an increase of approximately 4.3% in freshmen applications for Fall 2021 compared to Fall 2020, total new freshmen enrollees for Fall 2021 decreased by approximately 3.3% compared to Fall 2020 for UMass as a whole, and total new transfer enrollees decreased by approximately 3.5%, for Fall 2021 compared to Fall 2020 based on headcount. The University believes that the declines may be due, in part, to the impacts of the COVID-19 pandemic. See "University Response to COVID-19".

APPENDIX A

The following tables show the most currently available retention and six-year graduation rates for undergraduate freshmen entering the University. The level and changes in retention and graduation rates reflect the diversity of the entering students among the four undergraduate campuses; the lower averages in large part reflect the non-traditional student population served by the Boston Campus.

One-Year Retention Rates - Fall Term (%)

	Fall				
	<u>2017</u>	<u>2018</u>	<u>2019</u>	<u>2020</u>	<u>2021</u>
Range of Campus Averages	74-91	71-91	70-91	71-89	69-91

Six-Year Graduation Rates (%)

	Fall				
	<u>2017</u>	<u>2018</u>	<u>2019</u>	<u>2020</u>	<u>2021</u>
Year of Entry	2011	2012	2013	2014	2015
Graduation After 6 Years - Range of Campus Averages	48-77	48-80	49-82	50-83	49-84

The following table shows the average Scholastic Aptitude Test (“SAT”) scores for entering University undergraduate freshmen for the Fall terms shown.

SAT Scores for Incoming Freshmen

	Fall				
	<u>2017</u>	<u>2018</u>	<u>2019</u>	<u>2020</u>	<u>2021</u>
Range of Campus Averages	1095-1268	1084-1296	1091-1292	1091-1290	1139-1352
National Average	1060	1068	1059	1051	1060

Source: University records for Campus Averages; College Board for National Averages.

Degrees Awarded

The University awards four levels of degrees: associate’s, bachelor’s, master’s and doctoral/professional degrees, as well as undergraduate and graduate certificates. The number of degrees and certificates awarded by the University in the five most recently completed academic years are shown in the following table.

Degrees Awarded

	Academic Year				
	<u>2016-2017</u>	<u>2017-2018</u>	<u>2018-2019</u>	<u>2019-2020</u>	<u>2020-2021</u>
Associate’s/Certificate	578	653	666	684	751
Bachelor’s	12,754	13,091	13,231	13,101	13,392
Master’s/CAGS [†]	4,755	4,827	4,985	4,841	4,891
Doctorate/Professional	845	841	915	944	946

[†] “CAGS” means Certificate of Advanced Graduate Studies.

[Remainder of this page intentionally left blank.]

TUITION AND FEES

The following tables show tuition and mandatory fees for full-time graduate and undergraduate students in effect at the Amherst, Boston, Dartmouth, Lowell and Worcester Campuses for fiscal years 2018 through 2022.

Tuition & Mandatory Fees: Fiscal Years 2018-2022

Amherst Campus

	Fiscal Year				
	<u>2018</u>	<u>2019</u>	<u>2020</u>	<u>2021</u>	<u>2022</u>
TUITION					
Undergraduate (MA resident)	\$15,030	\$15,406	\$15,791	\$15,791	\$15,791
Undergraduate (non-resident)	33,096	34,089	35,112	35,779	36,316
Graduate (MA resident)	13,930	14,348	14,778	14,778	14,778
Graduate (non-resident)	30,533	31,449	32,392	33,040	33,536
OTHER MANDATORY FEES					
Undergraduate (MA resident)	\$381	\$481	\$598	\$648	\$648
Undergraduate (non-resident)	381	481	598	648	648
Graduate (MA resident)	2,157	2,176	2,195	2,221	2,237
Graduate (non-resident)	2,157	2,176	2,195	2,221	2,237
TOTAL TUITION & MANDATORY FEES					
Undergraduate (MA resident)	\$15,411	\$15,887	\$16,389	\$16,439	\$16,439
Undergraduate (non-resident)	33,477	34,570	35,710	36,427	36,964
Graduate (MA resident)	16,087	16,524	16,973	16,999	17,015
Graduate (non-resident)	32,690	33,625	34,587	35,261	35,773
DORMITORY RESIDENTS ONLY					
Average Room & Board	\$12,258	\$12,626	\$13,004	\$13,329	\$13,595
TUITION, MANDATORY FEES, ROOM & BOARD					
Undergraduate (MA resident)	\$27,669	\$28,513	\$29,393	\$29,768	\$30,034
Undergraduate (non-resident)	45,735	47,196	48,714	49,756	50,559
Graduate (MA resident)	28,345	29,150	29,977	30,328	30,610
Graduate (non-resident)	44,948	46,251	47,591	48,590	49,368

[Remainder of this page intentionally left blank.]

APPENDIX A

Boston Campus

	Fiscal Year				
	<u>2018</u>	<u>2019</u>	<u>2020</u>	<u>2021</u>	<u>2022</u>
TUITION					
Undergraduate (MA resident)	\$13,503	\$13,841	\$14,187	\$14,187	\$14,187
Undergraduate (non-resident)	32,660	33,640	34,649	34,649	34,649
Graduate (MA resident)	17,375	17,896	18,433	18,433	18,433
Graduate (non-resident)	33,915	34,932	35,980	35,980	35,980
OTHER MANDATORY FEES					
Undergraduate (MA resident)	\$325	\$326	\$466	\$510	\$530
Undergraduate (non-resident)	325	326	466	510	530
Graduate (MA resident)	355	355	455	505	505
Graduate (non-resident)	355	355	455	505	505
TOTAL TUITION & MANDATORY FEES					
Undergraduate (MA resident)	\$13,828	\$14,167	\$14,653	\$14,697	\$14,717
Undergraduate (non-resident)	32,985	33,966	35,115	35,159	35,179
Graduate (MA resident)	17,730	18,251	18,888	18,938	18,938
Graduate (non-resident)	34,270	35,287	36,435	36,485	36,485
DORMITORY RESIDENTS ONLY¹					
Average Room & Board (Undergraduate only)	N/A	\$14,858	\$15,270	\$15,741	\$16,355
TUITION, MANDATORY FEES, ROOM & BOARD¹					
Undergraduate (MA resident)	\$13,828	\$29,025	\$29,923	\$30,438	\$31,072
Undergraduate (non-resident)	32,985	48,824	50,385	50,900	51,534
Graduate (MA resident)	17,730	18,251	18,888	18,938	18,938
Graduate (non-resident)	34,270	35,287	36,435	36,485	36,485

¹ The Boston Campus began providing on-campus student housing in fiscal year 2018. Room rates are recommended by an operating committee, composed of representatives of the nonprofit entity that owns the facility, the management company that operates the facility, the University and the Authority, and approved by the nonprofit owner. See “University Campuses – Boston Campus”.

[Remainder of this page intentionally left blank.]

Dartmouth Campus

	Fiscal Year				
	<u>2018</u>	<u>2019</u>	<u>2020</u>	<u>2021</u>	<u>2022</u>
TUITION					
Undergraduate (MA resident)	\$13,166	\$13,496	\$13,833	\$13,833	\$13,833
Undergraduate (non-resident)	27,880	28,716	29,578	29,578	29,578
Graduate (MA resident)	15,449	15,912	16,390	16,390	16,390
Graduate (non-resident)	27,880	28,716	29,578	29,578	29,578
Graduate Law School (MA resident)	27,016	27,826	28,661	28,661	28,661
Graduate Law School (non-resident)	35,413	36,475	37,569	37,569	37,569
OTHER MANDATORY FEES					
Undergraduate (MA resident)	\$405	\$425	\$525	\$575	\$575
Undergraduate (non-resident)	405	425	525	575	575
Graduate (MA resident)	405	425	525	575	575
Graduate (non-resident)	405	425	525	575	575
Graduate Law School (MA resident)	405	425	525	575	575
Graduate Law School (non-resident)	405	425	525	575	575
TOTAL TUITION & MANDATORY FEES					
Undergraduate (MA resident)	\$13,571	\$13,921	\$14,358	\$14,408	\$14,408
Undergraduate (non-resident)	28,285	29,141	30,103	30,153	30,153
Graduate (MA resident)	15,854	16,337	16,915	16,965	16,965
Graduate (non-resident)	28,285	29,141	30,103	30,153	30,153
Graduate Law School (MA resident)	27,421	28,251	29,186	29,236	29,236
Graduate Law School (non-resident)	35,818	36,900	38,094	38,144	38,144
DORMITORY RESIDENTS ONLY					
Average Room & Board	\$12,753	\$13,299	\$13,870	\$15,327	\$15,825
TUITION, MANDATORY FEES, ROOM & BOARD					
Undergraduate (MA resident)	\$26,324	\$27,220	\$28,228	\$29,735	\$30,233
Undergraduate (non-resident)	41,038	42,440	43,973	45,480	45,978
Graduate (MA resident)	28,607	29,636	30,785	32,291	32,790
Graduate (non-resident)	41,038	42,440	43,973	45,480	45,978
Graduate Law School (MA resident)	40,174	41,550	43,056	44,563	45,061
Graduate Law School (non-resident)	48,571	50,199	51,964	53,471	53,969

[Remainder of this page intentionally left blank.]

APPENDIX A

Lowell Campus

	Fiscal Year				
	<u>2018</u>	<u>2019</u>	<u>2020</u>	<u>2021</u>	<u>2022</u>
TUITION					
Undergraduate (MA resident)	\$14,350	\$14,710	\$15,078	\$15,078	\$15,078
Undergraduate (non-resident)	31,415	32,357	33,004	33,004	33,004
Graduate (MA resident) ¹	14,590	14,590	14,590	14,590	14,590
Graduate (non-resident) ¹	26,370	26,370	26,370	26,370	26,370
OTHER MANDATORY FEES					
Undergraduate (MA resident)	\$450	\$470	\$570	\$620	\$620
Undergraduate (non-resident)	450	470	570	620	620
Graduate (MA resident) ²	450	470	570	620	620
Graduate (non-resident) ²	450	470	570	620	620
TOTAL TUITION & MANDATORY FEES					
Undergraduate (MA resident)	\$14,800	\$15,180	\$15,648	\$15,698	\$15,698
Undergraduate (non-resident)	31,865	32,827	33,574	33,624	33,624
Graduate (MA resident)	15,040	15,060	15,160	15,210	15,210
Graduate (non-resident)	26,820	26,840	26,940	26,990	26,990
DORMITORY RESIDENTS ONLY					
Average Room & Board	\$12,495	\$12,748	\$13,060	\$13,380	\$13,570
TUITION, MANDATORY FEES, ROOM & BOARD					
Undergraduate (MA resident)	\$27,295	\$27,928	\$28,708	\$29,078	\$29,268
Undergraduate (non-resident)	44,360	45,576	46,634	47,004	47,194
Graduate (MA resident)	27,535	27,808	28,220	28,590	28,780
Graduate (non-resident)	39,315	39,588	40,000	40,370	40,560

¹ Graduate tuition charges at UMass Lowell are on a 9-credit load basis.

² Graduate fee charges at UMass Lowell are on a 9-credit load basis.

[Remainder of this page intentionally left blank.]

Worcester Campus

	Fiscal Year				
	<u>2018</u>	<u>2019</u>	<u>2020</u>	<u>2021</u>	<u>2022</u>
TUITION					
Medical School (resident - class of '18 and prior)	\$28,426	-	-	-	
Medical School (resident - class of '19 and beyond)	34,600	\$35,500	\$36,030	\$36,570	\$37,120
Medical School (non-resident)	59,400	61,050	61,960	62,889	63,832
Graduate School of Nursing (MA resident)	13,500	13,870	14,064	14,275	14,490
Graduate School of Biomedical Sciences (MA resident)	13,930	14,300	14,506	14,724	14,946
Graduate School of Nursing (non-resident)	18,450	18,960	19,230	19,518	19,812
Graduate School of Biomedical Sciences (non-resident)	30,533	31,400	31,862	32,340	32,826
OTHER MANDATORY FEES					
Medical School (resident – class of '18 and prior)	\$2,078	-	-	-	-
Medical School (resident - class of '19 and beyond)	2,078	\$2,276	\$2,316	\$2,091	\$2,130
Medical School (non-resident)	2,078	2,276	2,316	\$2,091	2,130
Graduate School of Nursing (resident and non-resident)	1,278	1,356	1,390	1,390	1,410
Graduate School of Biomedical Sciences (resident and non-resident)	953	1,031	1,056	1,056	1,072
TOTAL TUITION & MANDATORY FEES					
Medical School (resident – class of '18 and prior)	\$30,504	-	-	-	
Medical School (resident - class of '19 and beyond)	36,678	\$37,776	\$38,346	\$38,661	\$39,250
Medical School (non-resident)	61,478	63,326	64,276	64,980	65,962
Graduate School of Nursing (MA resident)	14,778	15,226	15,454	15,665	15,900
Graduate School of Biomedical Sciences (MA resident)	14,883	15,331	15,562	15,780	16,018
Graduate School of Nursing (non-resident)	19,728	20,316	20,620	20,908	21,222
Graduate School of Biomedical Sciences (non-resident)	31,486	32,431	32,918	33,396	33,898

Student Financial Aid

Eligible University students receive financial aid packages primarily awarded from the federal government, with varying combinations of grants and scholarships, loans and part-time employment. Grants and scholarships represent financial aid that does not require repayment by the student. The primary federal grants and scholarships awarded to eligible University students in fiscal year 2020 were federal Pell Grants of approximately \$83.1 million and federal Supplemental Education Opportunity Grants of approximately \$3.7 million. New loans processed by the University for eligible students under federal student loan programs and federally guaranteed loan programs totaled approximately \$369.5 million for fiscal year 2020. Eligible University students also received approximately \$5.4 million through the federal Work-Study Program for fiscal year 2020.

UNIVERSITY REVENUES AND BUDGETING

In general, the University receives revenues from multiple sources: Commonwealth appropriations, tuition, student fees and self-supporting activities for which fees are charged to cover the cost of providing the service, and federal and state contracts. In fiscal year 2021, Commonwealth appropriations provided approximately 24.6% of all operating and non-operating revenues of the University (not including University Related Organizations), tuition and fees accounted for approximately 27.1% of all operating and non-operating revenues, and other non-appropriated funds (including grants and contracts, auxiliary enterprises and other operating revenues) provided the remaining 51.7%.

The University prepares annual financial statements in accordance with generally accepted accounting principles on an accrual basis. The financial statements of the University as of June 30, 2021 appearing in Appendix B to this Official Statement have been audited by KPMG LLP, independent certified public accountants. The audited financial statements of the University should be read in their entirety, including the footnotes and the Management Discussion and Analysis attached thereto. KPMG LLP has not been engaged to perform and has not performed, since the date of its report included in Appendix B, any procedures on the financial statements addressed in that report. KPMG LLP also has not performed any procedures relating to this Official Statement.

APPENDIX A

Budget Process

The University’s fiscal year, like that of the Commonwealth, is from July 1 through June 30. A key source of University revenues is the annual state appropriation determined in the Commonwealth’s annual budget process. This process begins approximately one year in advance of the commencement of each fiscal year. The University prepares its consolidated state budget request and forwards it to the Governor and the House and Senate Committees on Ways and Means. A copy of the University’s request is also forwarded to the DHE, which incorporates the University’s request in whole or in part into its state budget request for the entire public higher education system. The Governor makes funding recommendations to the state legislature (the “Legislature”). The Legislature in turn appropriates funds through its annual budget and other appropriating acts to the University Trustees, who distribute the funds to the five campuses. The Commonwealth budget process, however, is only one of several ongoing budgetary and review processes that culminate in the presentation to the University Trustees of the overall annual University operating budget.

Appropriated Funds

The following tables detail the University’s appropriations as included in the Commonwealth’s budget for fiscal years 2018 through 2022 and the calculation of total Commonwealth support reported in the financial statements for fiscal years 2017 through 2021. **Table A** details the University’s base appropriation as provided for in the Commonwealth’s annual budget for fiscal years 2018 through 2022, as more fully discussed below. **Table B** details the total Commonwealth support received by the University from all sources for fiscal years 2017 through 2021, as reflected in the University’s annual audited financial statements.

TABLE A
Commonwealth Appropriations by Fiscal Year
(\$ millions)

	Fiscal Year				
	2018	2019	2020	2021	2022
Commonwealth Appropriations	<u>Budget</u>	<u>Budget</u>	<u>Budget</u>	<u>Budget</u>	<u>Budget</u>
UMass Base Appropriation	\$513.5	\$519.2	\$558.0	\$560.5	\$571.2
Collective Bargaining Costs	<u>0</u>	<u>22.9*</u>	<u>2.4*</u>	<u>0</u>	<u>3.4</u>
Total State Appropriation	<u>\$513.5</u>	<u>\$542.1</u>	<u>\$560.5</u>	<u>\$560.5</u>	<u>\$574.6</u>

*The Commonwealth transferred certain funds to the University’s base appropriation in fiscal years 2019 and 2022 to support collective bargaining, and in fiscal year 2020 to support collective bargaining and the implementation of the Paid Family Medical Leave Act.

The funds appropriated by the Commonwealth for the University generally are applied to pay employee salaries, including unionized faculty and staff, salaries and related expenses. The Commonwealth also includes in its annual appropriation the fringe benefit costs of those University employees who are paid from Commonwealth appropriations. Such fringe benefit costs are added to the “State Appropriations” financial statement line item as presented in the table below. The University pays the Commonwealth for the fringe benefit costs of those employees paid from funding sources other than Commonwealth appropriations. The University includes tuition collected in its financial statements in the line item captioned “Tuition and Fees” in the “Combined Statements of Revenue, Expenses and Changes in Net Position”.

[Remainder of this page intentionally left blank.]

TABLE B
Total Commonwealth Support
(\$ thousands)

Fiscal Year	Fiscal Year				
	2017	2018	2019	2020	2021
Gross Commonwealth Appropriations	\$512,900	\$528,868	\$542,095	\$566,941	\$568,350
Plus: Fringe Benefits	207,917	223,026	238,126	243,577	277,131
Net Commonwealth Appropriations	<u>\$720,817</u>	<u>\$751,894</u>	<u>\$780,221</u>	<u>\$810,518</u>	<u>\$845,481</u>

The Commonwealth's fiscal year 2017 budget approved in July 2016 included a base appropriation of \$508.3 million. The supplemental funding provided in fiscal year 2016 for the collective bargaining agreement cost increases was not fully carried into the base appropriation for fiscal year 2017, resulting in underfunding of these costs. The fiscal year 2017 base appropriation amount also was reduced, by approximately \$30.5 million, to reflect the amount of tuition the University would be able to retain under legislation effective commencing in fiscal year 2017. With no increase in the base appropriation and no additional funding for the increased collective bargaining agreement costs, the Board of Trustees approved an average increase in tuition and mandatory fees of 5.6% for in-state undergraduates for fiscal year 2017.

The Commonwealth's fiscal year 2018 budget approved in July 2017 included a base appropriation of \$513.5 million, representing an increase of 1.0% over the fiscal year 2017 base appropriation. The budget did not include a specific reserve or additional funding for increases in collective bargaining agreement costs expected under renewed contracts for fiscal years 2018 through 2020, as the parameters were not yet available. Subsequent to the approval of the Commonwealth budget, collective bargaining parameters were established for the fiscal year 2018 through 2020 contract period, and the additional costs for fiscal year 2018 were ultimately funded during fiscal year 2019 as described below. With the base appropriation falling short of the University's funding request, the Board of Trustees approved an average increase in tuition and mandatory fees of 3.1% for in-state undergraduates for fiscal year 2018.

The Commonwealth's fiscal year 2019 budget approved in July 2018 included a base appropriation of \$519.2 million, representing an increase of 1.1% over the fiscal year 2018 base appropriation. The budget included a collective bargaining reserve; however the reserve was short of the total needed to fund all Commonwealth contracts under negotiation (not limited to the University). Since the base appropriation was less than the University's funding request, the Board of Trustees approved an average increase in tuition and mandatory fees of 2.7% for in-state undergraduates for fiscal year 2019. Working closely with Governor Baker's Administration, the University secured a commitment to fund \$11.3 million for the retroactive adjustment for collective bargaining cost increases for fiscal year 2018. Additionally, \$22.9 million was committed for fiscal year 2019. All of the additional funding for the collective bargaining agreement cost increases for fiscal years 2018 and 2019 were received by the University prior to the end of fiscal year 2019.

The Commonwealth's fiscal year 2020 budget approved in July 2019 included a total appropriation of \$558.0 million, including the Commonwealth's share of the collective bargaining agreement cost increases for the fiscal year 2018 through 2020 contract period, plus a 1.0% increase to assist with fixed costs. During the fiscal year, an additional \$2.4 million was transferred to the University's appropriation in support of final collective bargaining contracts and in support of the implementation of the Paid Family Medical Leave Act. Nonetheless, the fiscal year 2020 appropriation fell short of the University's funding request, and the Board of Trustees approved an average increase in tuition and mandatory fees of 3.2% for in-state undergraduates for fiscal year 2020.

The Commonwealth's fiscal year 2021 budget approved in December 2020 included a total appropriation of \$560.5 million, resulting in no change in funding from fiscal year 2020.

The Commonwealth's fiscal year 2022 budget approved in July 2021 included a total appropriation of \$571.2 million, representing an increase of 1.9% over the fiscal year 2021 base appropriation. The appropriation partially funded the University's request, including \$4 million for student mental health services and \$6.7 million for increased costs due to inflation. In addition to the annual appropriation, the Commonwealth has committed to funding a share of collective bargaining costs and transferring funds to the University as contracts are finalized. The Commonwealth

APPENDIX A

also appropriated COVID Impact Mitigation Funding during fiscal year 2022, earmarking \$30 million for the University toward mitigating the impacts related to the COVID-19 pandemic and for capital maintenance projects.

The Governor's fiscal year 2023 budget proposal filed with the legislature in January 2022 includes a total appropriation of \$583.8 million, an increase of 2.2% above the appropriation included in the Commonwealth's fiscal year 2022 budget. Of that increase, \$11 million supports the Commonwealth's share of collective bargaining costs for contracts renegotiated and finalized to date. The remaining \$1.6 million increase relates to increased costs due to inflation. A collective bargaining reserve also was included by the budget proposal to provide funds that will be transferred to the University as contracts are finalized. The Governor's budget proposal is expected to undergo review and change as the legislative process proceeds.

Management of Non-Appropriated Funds

All non-appropriated funds are managed and grouped for budgetary purposes into several trust funds. Non-appropriated funds are funds derived by the University from revenue sources other than Commonwealth appropriations and include, for example, tuition, student fees, gifts, grants, contracts and sponsored programs. The University Trustees establish and collect certain student fees and charges, including charges for room and board. Non-appropriated funds are retained by the University. Approximately 76.6% and 75.4% of the University's operating and non-operating revenues for fiscal years 2020 and 2021, respectively, were non-appropriated.

University trust funds are financial accounts that are established by the University Trustees under authority granted by the Legislature in connection with self-supporting operations, such as student services, parking and certain research and public service activities. Revenues received from these self-supporting activities are expended by law for the respective purposes for which each trust fund was established. The University Trustees exercise oversight and control over these funds through official policy guidelines, annual budget review and approval and periodic internal audits of certain accounts.

The University's financial operations consist of two major expense categories: Educational and General and Auxiliary Enterprises. The Educational and General expense category includes academic programs, research, public service programs, student services programs, academic and institutional support programs, physical plant operations and financial aid. These activities are funded from student tuition and fees, Commonwealth and Federal appropriations, and grants and contracts. Auxiliary Enterprises are a set of self-sufficient services ancillary to the general educational mission of the University. These include such items as dining and residence halls, student health services and parking facilities. The Auxiliary Enterprises category is a revenue-based trust fund. No assurance can be given that future trust fund revenues will continue to be sufficient to support self-amortizing projects or other Auxiliary Enterprises. The University reviews fees annually with the goal of having the Auxiliary Enterprises budget be self-sufficient.

Responding to a Challenging Fiscal Environment

Although the COVID-19 pandemic has impacted the University, the University has benefitted from an increase in demand for its educational services. The University's growing reputation has resulted in growth in student enrollment and the associated revenue growth from student charges, although individual campuses have had differing experiences. In addition, the University benefits from having diverse revenue streams. Grant and contract revenues have grown consistently over the years and the University anticipates continued growth in this area. Modest increases in room and board rates are also expected to continue to generate revenues for auxiliary operations. Additionally, the University's online presence continues to expand. For fiscal year 2021, UMassOnline achieved an approximate 2.1% increase in revenue, resulting in revenue of \$145.3 million, compared to \$120.5 million in fiscal year 2020. The University expects that UMass Global will help mitigate the impacts on the University of the demographic changes occurring in higher education nationwide, in addition to adding to the University's expertise in online education and positioning it to become a significant participant in the national online education marketplace.

Understanding that the current fiscal environment poses significant challenges for the University and its students, the University is committed to being a good steward of limited resources. The University, through the Board of Trustees, created a permanent Task Force on Efficiencies and Effectiveness charged with helping to ensure that improving quality through more efficient and effective operations continues to be a priority for the University. The

Task Force, along with the President's Office and the campuses, is working to promote a more standardized approach for cross-campus collaboration and oversight of the entire effort, track and report progress, and quantify the benefits to the University and its campuses. Over the last few years the University has achieved measurable savings and efficiencies and expects current efforts to yield additional savings going forward. Building upon the momentum of the Efficiencies and Effectiveness initiative, the University established the UPST which provides procurement and accounts payable services to all campuses. Through the unification of resources and modernization of processes, the plan is expected to bring significant operational improvements and cost reduction. Since UPST's launch in January 2020, \$33.9 million in cost savings have been achieved through more than 170 initiatives across all five campuses. To continue achieving its mission of providing "better, faster, cheaper" services to the University, UPST has developed a robust pipeline of process improvements and cost savings projects and continues to focus on driving system-wide contracts, creating efficiencies for all campuses.

The University continues to focus on improving its competitive position. A notable example, in addition to the UMass Global initiative described above, was the opening in September 2018 of the first-ever student dormitories at UMass Boston, resulting in the University achieving a long-held goal of providing UMass Boston students with an on-campus residential option.

Basis of Presentation

The financial statements have been prepared in accordance with U.S. accounting principles as prescribed by the Governmental Accounting Standards Board ("GASB") using the economic resources measurement focus and the accrual basis of accounting. These 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 from external parties for goods or services.

The University's operating activities consist of tuition and fees, grants and contracts, sales and services, auxiliary enterprises and other operating revenues. Other operating revenues include sales and services provided by the Chan Medical School under its Commonwealth Medicine programs, which provide consulting and services in healthcare 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 Chan Medical School for educational services it provides to its clinical affiliate, UMass Memorial Medical Center ("UMass Memorial").

Revenues are reported net of discounts and allowances. As a result, student financial aid expenses are reported as an allowance against tuition and fees revenue while stipends and other payments made directly to students are recorded as scholarship and fellowship expenses on the statement of revenues, expenses and other changes to net position and are included in supplies and services on the statement of cash flows. Discounts and allowances for tuition and fees and Auxiliary Enterprises are calculated using the alternate method.

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, CARES Act revenue, Federal Pell grants, private gifts, and investment income.

The preparation of financial statements in accordance with accounting principles generally accepted in the United States of America requires management to make estimates and judgments that affect the reported amounts of assets and liabilities, the disclosure of contingent assets and liabilities at the dates of the financial statements, and reported amounts of revenues and expenses recognized during the reporting periods. Actual results could differ from those 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.

APPENDIX A

Net position is classified into the following categories:

- **Invested 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.

In fiscal year 2018, the University adopted the provisions of GASB Statement No. 75, *Accounting and Financial Reporting for Postemployment Benefits Other Than Pensions* ("GASB 75"). The statement supersedes GASB Statement No. 45 and establishes new requirements for calculating and reporting the University's postemployment benefits. The implementation of GASB 75 resulted in a cumulative effect adjustment of (\$742,982) to the net position in the fiscal year 2018 Statement of Revenues, Expenses, and Changes in Net Position as of July 1, 2017.

Effective for fiscal year 2020, the University adopted GASB Statement No. 84, *Fiduciary Activities*, ("GASB 84"). This statement establishes criteria for identifying fiduciary activities and requires that fiduciary activities be reported in a Statement of Fiduciary Net Position and a Statement of Changes in Fiduciary Position. GASB 84 permits business-type activities, such as the University, to report activities that would otherwise be considered fiduciary activities in the University's Statement of Net Position and Statement of Cash Flows as operating activities if upon receipt, the funds are normally expected to be held for three months or less. Given the majority of the fiduciary activities are custodial amounts held for three months or less, the University did not report these activities with a Statement of Fiduciary net Position or Statement of Changes in Fiduciary Position. These fiduciary activities were reclassified to the operating activities portion of the Statement of Cash Flows from noncapital financial activities at June 30, 2020 and 2019, respectively.

Immaterial Correction

For fiscal year 2019, the University reported its proportionate share of activity related to post-employment benefits for its participation in the Commonwealth's Other Post -Employment Benefits ("OPEB") plan in accordance with GASB 75. The GASB 75 schedule of employer and non-employer allocations of the Commonwealth's OPEB Plan that was utilized to report information within the University's fiscal year 2019 financial statements in accordance with GASB 75 was subsequently revised. The University recorded an immaterial correction to its previously reported financial statements to properly reflect its revised proportionate share of activity related to post-employment.

[Remainder of this page intentionally left blank.]

SUMMARY OF OPERATIONS*

University
Combined and Condensed Statement of Net Position

As of June 30 (\$ thousands)

	<u>2017</u>	<u>2018</u>	<u>2019</u>	<u>2020</u>	<u>2021</u>
ASSETS					
Current Assets	\$ 742,482	\$918,685	\$921,582	\$1,156,836	\$1,164,660
Noncurrent Assets					
Capital Assets, Net	4,854,110	5,075,476	5,164,200	5,206,569	5,243,969
All Other Noncurrent Assets	1,404,203	1,291,309	1,281,662	1,225,544	1,534,138
Total Assets	\$7,000,795	\$7,285,470	\$7,367,444	\$7,588,949	\$7,942,767
DEFERRED OUTFLOWS OF RESOURCES	\$275,725	\$341,335	\$357,541	\$531,271	\$551,553
LIABILITIES					
Current Liabilities	\$ 622,084	\$ 934,525	\$799,310	\$680,069	\$732,064
Noncurrent Liabilities	3,562,485	4,161,911	4,237,383	4,750,458	4,761,737
Total Liabilities	\$4,184,569	\$5,096,436	\$5,036,693	\$5,430,527	\$5,493,801
DEFERRED INFLOWS OF RESOURCES	\$37,671	\$141,485	\$215,910	\$256,926	\$411,451
NET POSITION					
Net Investment in Capital Assets	\$2,208,370	\$2,288,599	\$2,343,872	\$2,376,333	\$2,306,226
Restricted					
Nonexpendable	27,443	28,022	28,617	22,252	22,378
Expendable	201,710	222,343	206,023	223,803	232,756
Unrestricted	616,757	(150,080)	(106,130)	(189,621)	27,708
Total Net Position	\$3,054,280	\$2,388,884	\$2,472,382	\$2,432,767	\$2,589,068

* Derived from the University's Annual Audited Financial Reports for Fiscal Years 2017 through 2021. The University's financial statements include prior year comparative information. Certain prior year amounts have been reclassified to conform with the current year presentation.

[Remainder of this page intentionally left blank.]

APPENDIX A

University
Combined Statement of Revenues, Expenses and Changes in Net Position
For the Years Ended June 30 (\$ thousands)

REVENUES	<u>2017</u>	<u>2018</u>	<u>2019</u>	<u>2020</u>	<u>2021</u>
<i>Operating Revenues</i>					
Tuition and Fees*	\$ 847,832	\$874,826	\$894,904	\$917,876	\$930,613
Grants and Contracts	560,081	560,990	593,086	581,850	667,149
Sales & Service, Educational Activities	28,910	30,591	34,984	31,248	30,253
Auxiliary Enterprises	400,822	416,733	441,795	378,314	163,812
<i>Other Operating Revenues</i>					
Sales & Service, Independent Operations	79,261	68,497	59,893	62,829	50,961
Sales & Service, Public Service Activities	418,726	381,018	291,085	337,709	334,567
Other	104,957	136,159	137,607	116,204	125,586
<i>Total Operating Revenues</i>	<u>\$2,440,589</u>	<u>\$2,468,814</u>	<u>\$2,453,354</u>	<u>\$2,426,030</u>	<u>\$2,302,941</u>
EXPENSES	<u>2017</u>	<u>2018</u>	<u>2019</u>	<u>2020</u>	<u>2021</u>
<i>Operating Expenses</i>					
<i>Educational and General</i>					
Instruction	\$ 824,042	\$876,235	\$912,415	\$960,548	\$934,793
Research	447,370	471,135	490,887	485,759	552,472
Public Service	68,083	78,238	86,251	84,248	90,363
Academic Support	177,173	187,495	186,502	200,928	199,897
Student Services	151,033	156,934	160,751	157,842	141,160
Institutional Support	247,740	271,535	274,326	303,100	314,676
Operation and Maintenance of Capital Assets	240,501	255,825	248,581	241,880	226,965
Depreciation and Amortization	245,300	261,417	276,638	288,667	300,201
Scholarships and Fellowships	47,710	50,410	49,511	65,469	85,500
Auxiliary Enterprises	306,850	313,741	340,346	336,497	218,370
<i>Other Expenditures</i>					
Independent Operations	57,276	52,211	48,282	56,256	53,485
Public Service Activities	345,875	325,216	226,821	256,248	260,697
<i>Total Operating Expenses</i> [†]	<u>\$3,158,953</u>	<u>\$3,300,392</u>	<u>3,301,311</u>	<u>3,437,442</u>	<u>3,378,579</u>
<i>Operating Loss</i>	<u>(\$718,364)</u>	<u>(\$831,578)</u>	<u>(\$847,957)</u>	<u>(\$1,011,412)</u>	<u>(\$1,075,638)</u>

* Net of scholarship allowances of \$345,128,000 at June 30, 2021, \$343,031,000 at June 30, 2020, \$328,845,000 at June 30, 2019, \$310,106,000 at June 30, 2018, and \$288,708,000 at June 30, 2017.

† Included in total operating expenses are impacts of GASB Pronouncements 68 and 75, which require adjustments for large employee postemployment benefits (health and pension). Total expenses related to these pronouncements totaled \$92,330,000, \$122,012,000, \$68,574,000, and \$78,732,000 in fiscal years 2021, 2020, 2019, and 2018, respectively.

[Remainder of this page intentionally left blank.]

(continued)

NONOPERATING REVENUES/(EXPENSES)	<u>2017</u>	<u>2018</u>	<u>2019</u>	<u>2020</u>	<u>2021</u>
Federal Appropriations	\$6,602	\$6,688	\$7,004	\$6,774	\$5,953
State Appropriations	720,817	751,894	780,221	810,518	845,481
Gifts	26,253	39,022	43,705	41,996	41,262
Investment Income	31,567	37,622	48,943	32,762	58,383
Unrealized Gain (Loss) on Investments	15,466	5,558	18,082	(3,414)	(22,977)
Endowment Income					
Endowment Income Distributed for Operations	26,877	26,742	27,741	28,113	31,965
Interest on Indebtedness	(110,069)	(115,851)	(116,217)	(109,186)	(105,469)
Non-operating Federal Grants	74,050	81,590	84,454	115,601	173,592
Other Non-operating Income	17,085	1,118	1,576	296	413
<i>Net Non-operating Revenues</i>	<u>\$808,648</u>	<u>\$834,383</u>	<u>\$895,509</u>	<u>\$923,460</u>	<u>\$1,028,603</u>
<i>Income/(Loss) Before Other Revenues, Expenses, Gains and Losses</i>	<u>\$90,284</u>	<u>\$2,805</u>	<u>\$47,552</u>	<u>(\$87,952)</u>	<u>(47,035)</u>
Capital Appropriations	\$121,380	\$67,437	\$25,500	\$51,525	\$62,592
Capital Grants, Contracts and Gifts	29,080	8,732	13,165	7,516	8,528
Endowment Return, Net of Amount Used for Operations	21,278	8,166	13,467	(2,917)	148,514
Disposal of Plant Facilities	(4,274)	(6,695)	(11,381)		
Additions to permanent endowment					
Other Deductions	(3,561)	(2,859)	(4,805)	(7,787)	(16,298)
<i>Total Other Revenues, Expenses, Gains and Losses</i>	<u>\$163,903</u>	<u>\$74,781</u>	<u>\$35,946</u>	<u>\$48,337</u>	<u>\$203,336</u>
<i>Total Increase in Net Position</i>	<u>\$254,187</u>	<u>\$77,586</u>	<u>\$83,498</u>	<u>(\$39,615)</u>	<u>\$156,301</u>
NET POSITION					
Net Position at Beginning of Year	<u>\$2,800,093</u>	<u>\$3,054,280</u>	<u>\$2,388,884</u>	<u>\$2,472,382</u>	<u>\$2,432,767</u>
Cumulative effect of adoption of GASB 68					
Cumulative effect of adoption of GASB 75		(742,982)			
Net Position at Beginning of Year, Adjusted	<u>\$2,800,093</u>	<u>\$2,311,298</u>	<u>\$2,388,884</u>	<u>\$2,472,382</u>	<u>\$2,432,767</u>
<i>Net Position at End of Year</i>	<u>\$3,054,280</u>	<u>\$2,388,884</u>	<u>\$2,472,382</u>	<u>\$2,432,767</u>	<u>\$2,589,068</u>

[Remainder of this page intentionally left blank.]

APPENDIX A

SUMMARY OF FINANCIAL RESULTS, FISCAL YEARS 2019, 2020 AND 2021

The following is a summary of the University's financial results for fiscal years 2019, 2020 and 2021.

Fiscal Year 2021

Financial Highlights

The University's net position (not including University Related Organizations) increased approximately \$156.3 million from \$2.4 billion in fiscal year 2020 to \$2.6 billion in fiscal year 2021.

The University expended approximately \$227.0 million on operation and maintenance of capital assets during fiscal year 2021.

Summary of Assets and Liabilities

At June 30, 2021, the University's total assets (not including University Related Organizations) were approximately \$7.9 billion, an increase of approximately \$353.8 million over the approximately \$7.6 billion in assets recorded in fiscal year 2020. The University's largest asset continues to be its net capital assets of \$5.2 billion at June 30, 2021 (compared to \$5.2 billion at June 30, 2020). Other significant assets include current and noncurrent investments.

University liabilities (not including University Related Organizations) totaled approximately \$5.5 billion at June 30, 2021, an increase of approximately \$63.3 million from the approximately \$5.4 billion in liabilities in fiscal year 2020.

The University's current assets of approximately \$1.2 billion in fiscal year 2021 were more than the current liabilities of approximately \$732.1 million, with a current ratio of 1.6 dollars in assets to every one dollar in liabilities. In fiscal year 2020, the current ratio was 1.7 (representing approximately \$1.2 billion in current assets and \$680.1 million in current liabilities).

The University's unrestricted and restricted expendable net assets in fiscal year 2021 totaled approximately \$260.4 million, which represented approximately 7.5% of total operating expenditures of approximately \$3.5 billion during fiscal year 2021.

In fiscal year 2021, the University's unrestricted net position totaled approximately \$27.7 million, after taking into account the impact of two GASB standards (GASB 68 and GASB 75) related to pensions and other post-employment benefits. These standards required the University to record its share of the Commonwealth's unfunded liabilities. In fiscal year 2021, total unrestricted net position of \$1,433.7 million was offset by (\$477.8) million in unfunded pension liability and (\$928.2) million in unfunded other postretirement benefits liability, resulting in the \$27.7 million net unrestricted net position. Substantially all unrestricted net assets are designated to support academic, research, auxiliary enterprises or unrestricted funds functioning as endowments, or are committed to capital construction projects.

Summary of Operating Revenues and Operating Expenditures

The University's total operating revenues for fiscal year 2021 were approximately \$2.3 billion. This represents a decrease of approximately \$123.1 million over the approximately \$2.4 billion in operating revenues in fiscal year 2020. The most significant sources of operating revenue for the University were tuition and fees (40.4%), grants and contracts (29.0%), auxiliary enterprises (7.1%), and other operating revenue, including public service activities at the Worcester Campus (22.19%).

In fiscal year 2021, University operating expenditures, including depreciation and amortization of approximately \$300.2 million, totaled approximately \$3.4 billion. Of this total, approximately \$2.8 billion or 84.2% was used to support educational and general activities of the University, including approximately \$552.5 million in research.

Commonwealth Appropriations

In fiscal year 2021, Commonwealth appropriations represented approximately 24.6% of all operating and non-operating revenues. The level of Commonwealth support is a key factor influencing the University's overall financial condition. Although the annual Commonwealth appropriation is unrestricted revenue, nearly all of the annual appropriation supports payroll and benefits for University employees.

In fiscal year 2021, the total Commonwealth appropriation increased approximately \$35.0 million over fiscal year 2020.

Fiscal Year 2020

Financial Highlights

The University's net position (not including University Related Organizations) decreased approximately \$39.6 million from \$2.5 billion in fiscal year 2019 to \$2.4 billion in fiscal year 2020.

The University expended approximately \$241.9 million on operation and maintenance of capital assets during fiscal year 2020.

Summary of Assets and Liabilities

At June 30, 2020, the University's total assets (not including University Related Organizations) were approximately \$7.6 billion, an increase of approximately \$221.5 million over the approximately \$7.4 billion in assets recorded in fiscal year 2019. The University's largest asset continues to be its net capital assets of \$5.2 billion at June 30, 2020 (compared to \$5.2 billion at June 30, 2019). Other significant assets include current and noncurrent investments.

University liabilities (not including University Related Organizations) totaled approximately \$5.4 billion at June 30, 2020, an increase of approximately \$393.8 million from the approximately \$5.0 billion in liabilities in fiscal year 2019.

The University's current assets of approximately \$1.2 billion in fiscal year 2020 were more than the current liabilities of approximately \$680.1 million, with a current ratio of 1.7 dollars in assets to every one dollar in liabilities. In fiscal year 2019, the current ratio was 1.15 (representing approximately \$921.6 million in current assets and \$799.3 million in current liabilities).

The University's unrestricted and restricted expendable net assets in fiscal year 2020 totaled approximately \$34.2 million, which represented approximately 1.0% of total operating expenditures of approximately \$3.4 billion during fiscal year 2020.

In fiscal year 2020, the University's unrestricted net assets totaled approximately (\$189.6) million, after taking into account the impact of two GASB standards (GASB 68 and GASB 75) related to pensions and other post-employment benefits. These standards required the University to record its share of the Commonwealth's unfunded liabilities. In fiscal year 2020, total unrestricted net position of \$1,124.1 million was offset by (\$408.5) million in unfunded pension liability and (\$905.2) million in unfunded other postretirement benefits liability, resulting in the (\$189.6) million net unrestricted net position. Substantially all unrestricted net assets are designated to support academic, research, auxiliary enterprises or unrestricted funds functioning as endowments, or are committed to capital construction projects.

APPENDIX A

Summary of Operating Revenues and Operating Expenditures

The University's total operating revenues for fiscal year 2020 were approximately \$2.4 billion. This represents a decrease of approximately \$27.3 million over the approximately \$2.5 billion in operating revenues in fiscal year 2019. The most significant sources of operating revenue for the University were tuition and fees (37.8%), grants and contracts (24.0%), auxiliary enterprises (15.6%), and other operating revenue, including public service activities at the Worcester Campus (21.3%).

In fiscal year 2020, University operating expenditures, including depreciation and amortization of approximately \$288.7 million, totaled approximately \$3.4 billion. Of this total, approximately \$2.8 billion or 82.5% was used to support educational and general activities of the University, including approximately \$485.8 million in research.

Commonwealth Appropriations

In fiscal year 2020, Commonwealth appropriations represented approximately 23.4% of all operating and non-operating revenues. The level of Commonwealth support is a key factor influencing the University's overall financial condition. Although the annual Commonwealth appropriation is unrestricted revenue, nearly all of the annual appropriation supports payroll and benefits for University employees.

In fiscal year 2020, the total Commonwealth appropriation increased approximately \$30.3 million over fiscal year 2019.

Fiscal Year 2019

Financial Highlights

The University's net position (not including University Related Organizations) increased approximately \$114.0 million from \$2.4 billion in fiscal year 2018 to \$2.5 billion in fiscal year 2019.

The University expended approximately \$246.7 million on operation and maintenance of capital assets during fiscal year 2019.

Summary of Assets and Liabilities

At June 30, 2019, the University's total assets (not including University Related Organizations) were approximately \$7.4 billion, an increase of approximately \$82.0 million over the approximately \$7.3 billion in assets recorded in fiscal year 2018. The University's largest asset continues to be its net capital assets of \$5.2 billion at June 30, 2019 (compared to \$5.1 billion at June 30, 2018). Other significant assets include current and noncurrent investments.

University liabilities (not including University Related Organizations) totaled approximately \$5.0 billion at June 30, 2019, a decrease of approximately \$59.7 million from the approximately \$5.1 billion in liabilities in fiscal year 2018.

The University's current assets of approximately \$921.6 million in fiscal year 2019 were more than the current liabilities of approximately \$799.3 million, with a current ratio of 1.15 dollars in assets to every one dollar in liabilities. In fiscal year 2018, the current ratio was 0.98 (representing approximately \$918.7 million in current assets and \$934.5 million in current liabilities).

The University's unrestricted and restricted expendable net assets in fiscal year 2019 totaled approximately \$99.9 million, which represented approximately 3.0% of total operating expenditures of approximately \$3.3 billion during fiscal year 2019.

In fiscal year 2019, the University's unrestricted net assets totaled approximately (\$106.1) million, after taking into account the impact of two GASB standards (GASB 68 and GASB 75) related to pensions and other post-employment benefits. These standards required the University to record its share of the Commonwealth's unfunded liabilities. In fiscal year 2019, total unrestricted net position of \$1,198.9 million was offset by (\$409.3) million in unfunded pension liability and (\$719.0) in unfunded other postretirement benefits liability, resulting in the (\$106.1) million net unrestricted net position. Substantially all unrestricted net assets are designated to support academic, research, auxiliary enterprises or unrestricted funds functioning as endowments, or are committed to capital construction projects.

Summary of Operating Revenues and Operating Expenditures

The University's total operating revenues for fiscal year 2019 were approximately \$2.5 billion. This represents a decrease of approximately \$15.5 million over the approximately \$2.5 billion in operating revenues in fiscal year 2018. The most significant sources of revenue for the University were tuition and fees (36.5%), grants and contracts (24.2%), auxiliary enterprises (18.0%), and other operating revenue, including public service activities at the Worcester Campus (21.3%).

In fiscal year 2019, University operating expenditures, including depreciation and amortization of approximately \$276.6 million, totaled approximately \$3.3 billion. Of this total, approximately \$2.7 billion or 81% was used to support educational and general activities of the University, including approximately \$487.7 million in research.

Commonwealth Appropriations

In fiscal year 2019, Commonwealth appropriations represented approximately 22.5% of all operating and non-operating revenues. The level of Commonwealth support is a key factor influencing the University's overall financial condition. Although the annual Commonwealth appropriation is unrestricted revenue, nearly all of the annual appropriation supports payroll and benefits for University employees.

In fiscal year 2019, the total Commonwealth appropriation increased approximately \$28.3 million over fiscal year 2018.

Endowment and Fundraising

The University's endowment assets, which are held by the Foundation, have increased to approximately \$1,204.0 million at June 30, 2021 from approximately \$1,013.0 million at June 30, 2020. The amount raised in fiscal year 2021 totaled approximately \$116.7 million, including gifts, pledges, gifts-in-kind and private research grants. The number of endowed chairs has grown from four in 1995 to approximately 119 in 2021, enhancing the University's academic reputation. Fundraising is undertaken at the campus level, with the support of the University's Development Office. Each campus has an Advancement Office that undertakes development activities to support the applicable campus. The endowment funds for all five of the University's campuses are commingled into a pooled investment fund and are tracked by the Foundation. While the Foundation pools all gifts and grants received for investment purposes, such amounts remain available for use only by the campus that generated them.

The Foundation's total endowment return for fiscal year 2021, including realized and unrealized gains and losses, was a net gain of approximately \$298.7 million. The Foundation employs a market value unit method of accounting, whereby participating endowment funds enter and withdraw from the pooled investment fund based on monthly unit values. Changes in market value and monthly income are allocated proportionately to the respective campus. The effective spending rate for the endowment funds held by the Foundation was 3.5% for fiscal year 2021, which represents approximately 0.9% of the University's total operating and non-operating revenues.

The following table indicates the total amount of University endowment assets at June 30 of the years indicated.

APPENDIX A

University Endowment Assets* (\$ thousands)

<u>2017</u>	<u>2018</u>	<u>2019</u>	<u>2020</u>	<u>2021</u>
\$792,278	\$842,858	\$948,195	\$1,013,070	\$1,204,035

* Approximately 66% of the endowment is restricted by donors.

CURRENT AND FUTURE CAPITAL PLANS

In September 2021, the University Trustees reviewed and approved a five-year capital plan for fiscal years 2022 through 2026 (the “FY22-26 Capital Plan”), including projects already in progress with prior approval of the University Trustees and the University President. The University generally has funded its capital plans through a combination of funds received from University operations, bonds issued by UMBA, bonds issued by the Massachusetts Development Finance Agency (“MDFA”), Commonwealth appropriations and private fund raising.

The University must follow certain procedures for capital spending as defined by the Commonwealth’s Executive Office for Administration and Finance (“EOAF”). Such spending may be financed through the issuance of Commonwealth general or special obligation bonds or other designated revenue, including transfers from budgeted funds. The Commonwealth’s Division of Capital Asset Management and Maintenance (“DCAMM”) manages the Commonwealth’s five-year capital-spending plan, which is approved by the Commonwealth’s Secretary of Administration and Finance. The University works closely with DCAMM to ensure that the priorities of the University are included in the Commonwealth’s five-year capital-spending plan.

The University must request UMBA to undertake, and EOAF must approve, any project that is financed through UMBA. EOAF also must verify that such projects have received approval by the University Trustees and are included in the University’s capital plan.

The University Trustees, University administration, and campus leadership have identified capital issues as instrumental to the University’s goal of continuing to improve educational quality at all five campuses by enhancing academic achievement and student experience. Following a period of limited investment in the University’s capital assets in the 1980s and 1990s, the Board of Trustees, the President’s office, and campus leadership identified capital issues as among the biggest challenges facing the University. The University believed that modern and functional facilities were essential to enhancing the University’s image, reputation, capacity and mission effectiveness, and a major commitment of University resources to capital projects followed. Given the average age of the University’s campus buildings, a significant need to maintain and upgrade capital assets is expected over the next decade. The University’s administration works closely with each of the campuses in developing the University’s capital plan to reflect the needs and goals of each of the campuses. To further improve project planning and implementation across the University, University administrators and UMBA have collaborated with campus leadership to design an integrated project assessment and tracking process. Within budgetary limitations and programmatic requirements, the University’s capital planning includes a concerted effort to incorporate the principles of energy efficiency and sustainability in all its capital projects.

In 2016, Governor Baker’s Administration launched a multi-phased strategic planning effort with multiple work groups including Economic Development, Workforce Development, and Higher Education. The focus of the Higher Education work group was to develop a strategic framework for higher education capital planning. The work group conducted multiple regional planning workshops to develop a shared understanding of state-wide issues and to solicit input around criteria, principles, and metrics for future capital investment. The resulting methodology places a high priority on deferred maintenance and the repair and renovation of existing space. Higher education institutions are required to submit project proposals which undergo a multi-step review process and must align to Commonwealth priorities. The new methodology for project selection was utilized to develop the Commonwealth’s fiscal year 2019 capital plan that was released in May 2018. The plan included funding for four key areas of capital investment, including critical repairs, critical infrastructure, new major projects, and readiness determination projects. The Science and Engineering Building Renovation project at UMass Dartmouth was chosen for \$25 million of funding as a new major project. The Commonwealth also committed to a total of \$76 million in critical repair funding for the University

over the next five years to aid in addressing the University’s deferred maintenance needs. The Clinical Wing Lab to Office Conversion project at the Chan Medical School was a new major project chosen for funding in the fiscal year 2022 plan.

Addressing deferred maintenance remains a priority within the FY22-26 Capital Plan, building on the University’s engagement in 2015 of Sightlines to conduct an annual Building Portfolio Solutions analysis. The analysis is intended to ensure that deferred maintenance is being consistently reported across all campuses and to assist in developing a strategy for addressing deferred maintenance across the University. The annual analysis forms the basis for recommending projects as part of the University capital planning process outlined in the University Trustee policy.

In addition to the Board-approved capital plan, capital projects with project costs between \$2 million and \$10 million, which are funded from internal revenues, reserves and other non-borrowed sources, can be undertaken with the sole approval of the University’s President.

The projects within the capital plan are organized by project delivery and approval status, per University policy, as described below.

Traditional Delivery - projects that are funded by local campus funds, donations, University borrowing, or state funds and are owned and operated by the University. Traditional delivery projects require vote 1 and vote 2 approvals.

Alternative Delivery (P3) - projects with a long-term agreement between the University and private entity, where the private entity delivers, operates, and assumes most of the risk of the project. Alternative delivery projects require vote 1, vote 2, and vote 3 approvals, as well as the approval of the Governor.

- **Vote 1** – vote 1 approval is granted to a project that meets established criteria. An affirmative first vote would authorize UMBA along with the President’s Office and the campuses to perform a detailed project analysis, the form of which will depend on whether the project is selected for traditional or alternative delivery.
- **Vote 2** – vote 2 approval is granted to a project that has completed the detailed project analysis. For traditional projects, the second vote is considered “full approval” and the project is allowed to proceed to design and construction. For alternative delivery projects, an affirmative second vote authorizes UMBA to proceed with a procurement for alternative delivery and issuance of RFQ/RFP.
- **Vote 3** – An affirmative third vote approval authorizes the execution of the contract with the third party.

The following table summarizes the most recent quarterly update to the FY22-26 Capital Plan, including both projects that the Board voted to approve and projects approved by the University’s President.

University Campus	<u>Approval/ Vote 1</u>	<u>Approval/ Vote 2</u>	<u>Vote 3</u>	<u>Total Approved</u>
Amherst	\$363,250,000	\$374,743,376	\$277,500,000	\$1,015,493,376
Boston	49,349,369	152,444,972	0	201,794,341
Dartmouth	0	63,000,000	0	63,000,000
Lowell	120,700,000	60,070,756	0	180,770,756
Worcester	<u>39,340,000</u>	<u>512,700,000</u>	<u>0</u>	<u>552,040,000</u>
Total	\$572,639,369	\$1,162,959,104	\$277,500,000	\$2,013,098,473

Source: Quarterly Approved Project List update to the FY22-26 Capital Plan as of December 2021.

APPENDIX A

INDEBTEDNESS OF THE UNIVERSITY

The University is obligated, under various contractual arrangements, to make payments on indebtedness issued on its behalf, including indebtedness issued by UMBA and MDFA, as described below.

Bonds Issued by UMBA

As described in the front part of this Official Statement, UMBA was created for the general purpose of aiding and contributing to the performance of the educational and other purposes of the University by providing dormitories, dining commons and other buildings and structures for the use of the University, its students, faculty and staff and for lease to certain other entities related to the University.

As of June 30, 2021, UMBA had bonds outstanding (exclusive of commercial paper) in the aggregate principal amount of \$3.0 billion for which the University is contractually obligated to provide the payment of debt service or act as UMBA's agent to collect rates, rents, fees and other charges. All such bonds bear a fixed rate of interest. Such bonds, like the University's MDFA bonds described below, are not subject to acceleration. See "Annual Debt Service on UMBA and MDFA Bonds" below for the annual debt service payments on such bonds prior to giving effect to the issuance of the Bonds. UMBA's project revenue bonds are secured by and payable from, in addition to other moneys, all available funds of the University, including trust funds and other funds administered by the University as gifts, grants or trusts, or as provided in the University enabling act. Further, the University is obligated under the Contract to cause to be available each year sufficient accumulated unrestricted funds to pay debt service on UMBA bonds and certain expenses of UMBA. Such amounts for the last five fiscal years are set forth in the table below under "Spendable Cash and Investments." As described below, previously such accumulated unrestricted funds were measured by reference, most recently, to the University's "Unrestricted Net Assets" and previously to "Expendable Fund Balance" in the University's annual financial statements. Changes in accounting rules resulted in "Unrestricted Net Assets" not sufficiently representing actual accumulated unrestricted funds available to pay debt service on UMBA bonds, and so the information presented has been restated to reflect "Spendable Cash and Investments," which the University believes is a better measurement of such accumulated unrestricted funds. For details about the amounts represented in such table, see the footnote thereto.

Interest Rate Swap Agreements

Currently, UMBA has no interest rate swaps agreements ("swaps") outstanding related to University debt service obligations. All outstanding swaps were terminated in fiscal year 2021.

Commercial Paper

In August 2013, UMBA established a commercial paper program, consisting of its \$125 million Commercial Paper Notes, Series 2013 A (the "Series 2013A Notes"), and its \$75 million Commercial Paper Notes, Series 2013 B (the "Series 2013B Notes" and together with the Series 2013A Notes, the "Notes"). The Series 2013A Notes are supported by a standby liquidity facility provided by State Street Bank and Trust Co., which expires on August 12, 2022. The Series 2013B Notes are supported by a standby liquidity facility provided by U.S. Bank N.A., which expires on August 12, 2022. UMBA may issue Notes under either series on a taxable or tax-exempt basis to further UMBA's and the University's efforts to establish a "just in time" borrowing program to fund the University's capital plan as needed during construction periods. The Notes are secured under the Project Trust Agreement, and the Contract. The Notes are payable from the proceeds of rollover Notes, funds advanced under the applicable standby liquidity facility, bonds to be issued by UMBA in the future, or available funds of the University. As of January 31, 2022, UMBA had \$117.7 million in Notes outstanding. UMBA expects to extend or replace, as appropriate, the existing liquidity facilities on or prior to their respective expiration dates.

Bonds Issued by the Massachusetts Development Finance Agency

As of June 30, 2021, MDFA had bonds outstanding in the aggregate principal amount of approximately \$21.0 million, for which the University is contractually obligated to pay debt service.

Annual Debt Service on UMBA and MDFA Bonds

The table below sets forth the principal and interest due on bonds issued by UMBA and MDFA on behalf of the University on a fiscal year basis, after to giving effect to the issuance of the Bonds.

Annual Debt Service on UMBA and MDFA Bonds

Fiscal Year Ending June 30	UMBA Bonds	MDFA Bonds	Total
2022 ¹	\$223,708,641	\$ 505,078	\$224,213,719 ¹
2023	251,632,023	831,685	252,463,708
2024	257,927,033	828,330	258,755,363
2025	251,083,422	922,650	252,006,072
2026	242,143,436	1,134,695	243,278,131
2027	240,345,537	798,991	241,144,528
2028	239,821,689	700,000	240,521,689
2029	238,734,960	700,000	239,434,960
2030	235,322,089	700,000	236,022,089
2031	229,784,675	20,350,000	250,134,675
2032	219,877,029	-	219,877,029
2033	212,092,205	-	212,092,205
2034	207,153,088	-	207,153,088
2035	209,781,468	-	209,781,468
2036	207,845,609	-	207,845,609
2037	206,935,623	-	206,935,623
2038	199,267,658	-	199,267,658
2039	194,599,955	-	194,599,955
2040	173,649,135	-	173,649,135
2041	172,414,659	-	172,414,659
2042	139,316,844	-	139,316,844
2043	139,496,870	-	139,496,870
2044	134,115,611	-	134,115,611
2045	109,253,624	-	109,253,624
2046	75,737,267	-	75,737,267
2047	61,040,047	-	61,040,047
2048	61,038,593	-	61,038,593
2049	48,856,693	-	48,856,693
2050	48,853,215	-	48,853,215
2051	48,861,664	-	48,861,664
2052	24,266,500	-	24,266,500
2053	24,261,750	-	24,261,750

¹ Includes \$161,168,773 of debt service paid to date in fiscal year 2022.

[Remainder of this page intentionally left blank.]

APPENDIX A

Spendable Cash and Investments

The following table sets forth the amount of spendable cash and investments in fiscal years 2017 through 2021. Spendable cash and investments reflect the available funds that can be used by the University to pay debt service and related costs. As noted above, neither the UMBA bonds nor the MDFA bonds are subject to acceleration upon a default.

Spendable Cash and Investments (\$ in thousands)

	Fiscal Year				
	2017	2018	2019	2020	2021
Spendable Cash and Investments*	\$1,264,764	\$1,446,094	\$1,563,723	\$1,577,064	\$2,220,624

* The amounts shown above in the table are the sum of University cash and investments less debt service reserve funds, plus Foundation cash and investments, plus pledges receivable reported in permanently restricted net assets, less University permanently restricted net assets, less Foundation permanently restricted net assets. Commencing in fiscal year 2019, pledges receivable are no longer included in spendable cash and investments.

Additional Indebtedness

Under the terms of the trust agreements and financing agreements securing the above-described indebtedness issued by UMBA, the University may, without limit, issue additional indebtedness or request UMBA or MDFA to issue additional indebtedness on behalf of the University so long as such indebtedness is payable from all funds of the University permitted by law to be applied thereto. With certain exceptions described below, the University may not pledge, or permit to exist any lien on, any of its funds or revenues. The University may request UMBA to issue additional indebtedness on behalf of the University that is not payable from all funds of the University permitted by law to be applied thereto, provided: (i) the additional indebtedness is secured by (a) pledged revenues derived from the project or projects being financed, (b) new or increased student fees whether imposed by the University or UMBA, (c) existing pledged revenues, or (d) any combination of the foregoing; and (ii) the maximum annual debt service on all revenue indebtedness then outstanding, including the proposed additional indebtedness, does not exceed 10% of the amount shown in the then most recent audited financial statements of the University as total available revenues. Indebtedness of the University may not be subject to acceleration.

In November 2020, legislation was enacted to permit the University to borrow for its working capital needs, subject to the conditions that any amount borrowed for working capital is required to be repaid within 365 days and the principal amount outstanding cannot exceed 8% of the total approved operating budget for the fiscal year in which the borrowing occurs. The University has entered into an agreement providing a revolving line of credit in the principal amount of \$150 million, with Bank of America, N.A. and State Street Bank, as lenders (the "Lenders"). The line of credit expires in May 2022. As of June 30, 2021, there was no balance outstanding under the line of credit. Under the line of credit agreement, the Lenders have the right to accelerate amounts outstanding under the line of credit upon the occurrence of an event of default.

Capitalized Leases

At June 30, 2021, the University had \$2.2 million in outstanding capital lease obligations.

INSURANCE

The University, as an agency of the Commonwealth, is self-insured for property loss exposure, subject to appropriation from the Legislature. However, properties owned by UMBA, such as the Mullins Center, dining commons and most dormitories, are insured by UMBA. In addition, certain properties owned by other University Related Organizations and leased to the University are insured by the related organization. The University's liability for damages to third parties as a result of negligence by University employees is limited under Chapter 258 of the 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 General Laws.

TECHNOLOGICAL INITIATIVES

The University continues to enhance and ensure its enterprise platforms and environments are secure from external threats. The University has implemented three layers of protection which help secure the environment. Layer one consists of upgraded and highly available edge protection from outside threats. Layer two consists of on-premises endpoint detection and response software to monitor internal traffic. Layer three is cybersecurity awareness training, which is provided yearly and monitored throughout the year by different training campaigns.

The University campuses and the President's Office have undertaken a variety of planning and organizing activities designed to establish project structures, roles and responsibilities and collaborative plans and processes for technology improvements at the University. The University has implemented system-wide human resources/payroll, financial, e-procurement and grants management systems, which it will continue to update. It has also implemented student information systems to support the processes of admissions and recruiting, maintaining student records and student financials, and awarding and processing financial aid. These systems are expected to continue to enhance business functions by further consolidating processing, streamlining operations and increasing utilization through new features and self-service offerings. There is continued focus on modern self-service capabilities and digital transformation, including planning for the migration of applications and data to the cloud. The University also continues to invest in data analytics to improve its understanding of areas such as financial spend and student outcomes and to enable better decision making.

The University continues to invest in information security initiatives to enhance the ability to protect its constituent's data and to minimize risk and liability. Cybersecurity awareness training remains a focus area as the University believes every member of the University community has a role to play in protecting information. Additionally, the University has implemented enhanced reporting that uses third party expertise to regularly assess and improve organizational maturity in adopting cybersecurity best practices.

The University continues to invest in new digital integration capabilities to address current and future application and data sharing needs across the system. The University expects that this capability will make it easier to securely and effectively leverage the information stored across many disparate applications across all five campuses and the President's Office, while ensuring data integrity and proper data stewardship.

In 2015, the University completed the implementation of UMassNet, the next generation wide area network spanning and connecting all UMass campuses across the state. This network is a carrier class optical network spanning over 500 fiber span miles with 10gb/100gb bandwidth. This transformational project is enabling technologies at the University such as Virtual Desktop Infrastructure (VDI), video, lecture capture, unified communications, high performance computing, and campus data center optimization. The University continues to invest in maintaining this network as well as enhancing and expanding it where needed. In 2019, the management of the network was consolidated at the Amherst Campus. Under a new single organization structure and with enhanced governance, the University expects to continue to implement increased network capabilities and achieve cost efficiencies.

The University is a participant in a consortium of academic institutions and government and business leaders that constructed and operates the Massachusetts Green High Performance Computing Center ("MGHPCC") in Holyoke. The cutting-edge, research-oriented facility relies on hydroelectric power and is intended to encourage economic development in the region and serve as a vehicle for collaboration between key participants while establishing Massachusetts as a global leader in the application and development of next generation computing technologies. In addition to the University, academic partners include the Massachusetts Institute of Technology, Boston University, Harvard University, and Northeastern University, and key business participants include Cisco Systems and EMC Corporation. In 2019, UMass recommitted to being a member until 2027.

UMassOnline has engaged in several technology initiatives that have resulted in immediate and long-term positive implications to the University's internal and external constituents. These include updates to the core learning management system (Blackboard Learn), improvements in data processing from student information systems, and additional features added to Blackboard Collaborate to support synchronous and asynchronous distance learning

APPENDIX A

throughout the UMassOnline course offerings. In addition to the learning management system, UMassOnline has made significant improvements to UMassOnline.net, by creating a degree finder that caters to each individual potential student, putting them in touch with the advisors that can help them complete their application process and assist in decision making to ensure that the learner is in the right program that fits their needs. UMassOnline continues to support the mission of the University by assisting in revenue-generating projects to enhance the online learner experience.

UMassOnline has continued to partner with the UMass Donahue Institute to provide learning management system services to several programs, including the Massachusetts Department of Housing and Community Development Board Member Training and Civic Initiatives, and the Office of the Attorney General among others.

LITIGATION

The University is a defendant in various lawsuits; however, University management is of the opinion that the ultimate outcome of any such litigation, if decided adversely to the University, would not have a material effect on the financial position or financial results of the University.

Without limiting the foregoing, the University notes that a putative class action lawsuit was filed against the University in May 2020 in the Commonwealth's Suffolk Superior Court (*Spencer Holmes, et al. v. University of Massachusetts through its Board of Trustees, et al.*, Case No. 2084-cv-01025), claiming breach of contract and unjust enrichment, and seeking refunds of tuition and fees based on campus closings and the switch to online instruction in the Spring 2020 semester in response to the COVID-19 pandemic and the Commonwealth's orders regarding the same. See "University Response to COVID-19". The University's motion to dismiss the litigation was denied, and the University's motion for summary judgment is now pending. At this time, the University cannot predict the outcome of the litigation or the potential amount of any damages the University may be required to pay if the matter is concluded adversely to the University.

EMPLOYEE RELATIONS

For fiscal year 2021, the University employed 16,225 full and part-time faculty, professional and clerical and maintenance support staff, of which 10,117 were covered by collective bargaining units (not including post-doctoral employees, certain contract employees, graduate employees and undergraduate resident assistants). Of those covered, 4,112 were faculty, 3,049 were professional staff, 2,782 were clerical and maintenance support staff, and 174 were police officers. In total, the University currently has approximately 41 collective bargaining units (including two post-doctoral employee units, three graduate employee units and one undergraduate resident assistants unit). The majority of the bargaining agreements were for a three-year period which expired on June 30, 2020. The University is currently in negotiations with the respective collective bargaining units regarding new contract terms. To date, two contracts for the Lowell Campus have been ratified and funded by the Commonwealth; 10 additional contracts for the various campuses have been ratified but have not yet been considered by the Legislature. Employees covered by University collective bargaining units cannot strike under Massachusetts law.

In general, University employees are covered by a contributory Massachusetts retirement system under Chapter 32 of the General Laws, the State Employees' Retirement System ("SERS" or "State Retirement Plan"). The State Retirement Plan is a defined benefit plan that provides retirement benefits based upon age at retirement, years and months of service, and the average of the highest three to five consecutive years of base salary. As an alternative to SERS, eligible employees have the option of participating in the Commonwealth's Optional Retirement Program (the "ORP"). The ORP is a defined contribution plan, administered by the DHE. Eligibility for participation in the ORP was expanded by Chapter 68, Section 44 of the Acts of 2011. Employees can also participate in various optional supplemental retirement programs, such as the University of Massachusetts 403(b) Elective Deferral Savings Plan and the Commonwealth's 457(b) Deferred Compensation Plan. Employees generally are eligible to participate in various fringe benefit plans such as the dependent care assistance program and the health, dental, life and disability insurance plans. The majority of these benefits are sponsored by the Commonwealth. However, the University does sponsor a smaller subset of voluntary benefits for all employees (e.g. long-term care), as well as a wider range of voluntary benefits for employees of the Worcester Campus (e.g. dental/vision plans as well as life and long-term disability plans).

UNIVERSITY OF MASSACHUSETTS

By: /s/ Lisa A. Calise
Senior Vice President for
Administration & Finance and Treasurer

[Intentionally Left Blank]

APPENDIX B
FINANCIAL STATEMENTS OF THE AUTHORITY

[Intentionally Left Blank]

UNIVERSITY OF MASSACHUSETTS BUILDING AUTHORITY
(A Component Unit of the University of Massachusetts)

Financial Statements (with Independent Auditors' Report Thereon)

June 30, 2021 and 2020

UNIVERSITY OF MASSACHUSETTS BUILDING AUTHORITY
(A Component Unit of the University of Massachusetts)
TABLE OF CONTENTS

	Page
Independent Auditors' Report	1
Required Supplementary Information	
Management's Discussion and Analysis (unaudited)	3
Basic Financial Statements	
Statements of Net Position	10
Statements of Revenues, Expenses and Changes in Net Position	11
Statements of Cash Flows	12
Notes to Financial Statements	13
Independent Auditors' Report on Internal Control Over Financial Reporting and on Compliance and Other Matters Based on an Audit of Financial Statements Performed in Accordance with <i>Government Auditing Standards</i>	32



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

Independent Auditors' Report

Members of the Board
University of Massachusetts Building Authority:

Report on the Financial Statements

We have audited the accompanying financial statements of the University of Massachusetts Building Authority (the Authority), a component unit of the University of Massachusetts, as of and for the years ended June 30, 2021 and 2020, and the related notes to the financial statements, which collectively comprise the Authority's basic financial statements for the years then ended as listed in the accompanying 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 an opinion on these financial statements based on our audits. We conducted our audits in accordance with auditing standards generally accepted in the United States of America and the standards applicable to financial audits contained in *Government Auditing Standards*, issued by the Comptroller General of the United States. Those standards require that we plan and perform the audit to obtain reasonable assurance about whether the financial statements are free from material misstatement.

An audit involves performing procedures to obtain audit evidence about the amounts and disclosures in the financial statements. The procedures selected depend on the 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 opinion.

Opinion

In our opinion, the financial statements referred to above present fairly, in all material respects, the financial position of the Authority, as of June 30, 2021 and 2020, and the changes in its financial position and its cash flows for the years then ended in accordance with U.S. generally accepted accounting principles.



Other Matters

Required Supplementary Information

U.S. generally accepted accounting principles require that the Management's Discussion and Analysis on pages 3–9 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 10, 2021 on our consideration of the Authority's internal control over financial reporting and on our tests of its compliance with certain provisions of laws, regulations, contracts, and grant agreements and other matters. The purpose of that report is solely to describe the scope of our testing of internal control over financial reporting and compliance and the results of that testing, and not to provide an opinion on the effectiveness of the Authority's internal control over financial reporting or on compliance. That report is an integral part of an audit performed in accordance with *Government Auditing Standards* in considering the Authority's internal control over financial reporting and compliance.

KPMG LLP

Boston, Massachusetts
December 10, 2021

Management's Discussion and Analysis (unaudited)

This section of the annual financial statements of the University of Massachusetts Building Authority (the "Authority") presents a discussion and analysis of the Authority's financial activity for the fiscal years ended June 30, 2021 and 2020. This discussion and analysis has been prepared by management and should be read in conjunction with the Authority's financial statements and related note disclosures, which follow.

INTRODUCTION

The Authority is an independent body politic and corporate and a public instrumentality of the Commonwealth of Massachusetts (the "Commonwealth"), which was created by Chapter 773 of the Acts of 1960 of the Commonwealth, as amended (the "Enabling Act"). The Authority was created with the general purposes of providing dormitories, dining commons and other buildings and structures for use by the University of Massachusetts (the "University"), its students, staff and their dependents and other entities associated with the University as specified in the Enabling Act, as requested by authority of the Trustees of the University (the "Trustees").

The Authority is empowered to acquire, construct, remove, demolish, add to, alter, enlarge, reconstruct, remodel and do other work upon any building or structure and to provide and install furnishings, furniture, machinery, equipment, approaches, driveways, walkways, parking areas, planting, landscaping and other facilities therein. The Enabling Act authorizes the Authority to acquire property from the Commonwealth or others (but the Authority has no eminent domain power), to rent or lease as lessor or lessee any portion of a project, to operate projects, to employ experts and other persons, to enter into contracts, to borrow money to finance and refinance projects it undertakes, and to issue and sell its revenue bonds and notes which are payable solely from its revenues. The Authority's assets and projects are located on all five campuses of the University. The 11 members of the Authority are appointed by the Governor. Five of the members must be Trustees. Two of the other members must be graduates of the University. Non-trustee members serve terms of approximately six years. Trustee members serve as long as they are Trustees. Members whose terms expire continue as members until they are reappointed or replaced.

FINANCIAL HIGHLIGHTS

- The net position of the Authority is \$1.20 billion in fiscal year 2021 compared to \$1.25 billion in fiscal year 2020. The decrease in net position is due to a reduction in net operating income of \$92 million due to a bond refunding in October 2020 which restructured the November 1 bond payment, and therefore deferring the billing to the campuses. This is offset by an increase of \$22 million in capital contributions.
- Taking advantage of a continuing environment of historically low interest rates, in October of 2020, the Authority issued \$329.9 million of federally taxable refunding project revenue bonds, Series 2020-4. The bonds issued refunded \$200.1 million in Authority debt and restructured \$93.9 million, achieving future savings of \$21.4 million for the University. The net present value savings represent \$17.9 million or 8.9% of the par value of the refunded bonds. The new borrowings were issued with a true interest cost of 2.78%. These savings will be recognized in future debt service payments for each campus from 2021 through 2043. In March of 2021, the Authority issued \$312.3 million of refunding bonds, and \$46.6 million of federally taxable refunding revenue bonds, Series 2021-1 and 2021-2, respectively. In connection with the March 2021 refunding, the Authority terminated all swaps. The bonds issued refunded \$385.2 million in existing Authority debt, achieving future savings of \$23.8 million for the University. The net present value savings represent \$9.9 million or 2.56% of the par value of the refunded bonds. The new borrowings were issued with a true interest cost of 1.35%. These savings will be recognized in future debt service payments for each campus from 2021 through 2037. The rates secured during these refundings reflect the high regard of the University's credit among investors and the reaffirmation of our credit rating by the three major bond ratings agencies.

- Capital spending and contributed construction assets totaled \$236.5 million in fiscal year 2021, representing a \$28.9 million increase compared to fiscal year 2020. A majority of the capital spending in fiscal year 2021 relates to continued investments in new buildings and renovation projects, which include: Football training facility locker room repairs, expanded capacity of the Central Heating Plant (CHP), Fine Arts Center Bridge renovations, Student Union renovation, Central Campus core utility and landscaping, McGuirk Stadium upgrades, Whitmore mechanical improvements, and the Worcester Commons at the Amherst campus; renovations to existing academic buildings, and the Substructure Demolition & Quadrangle Development (SDQD) at the Boston campus; the Science & Engineering Building renovation, and the New Dining facility at the Dartmouth campus; the Olsen Hall renovations at the Lowell campus; and the VA Outpatient Center and New Education and Research Building (NERB) at the Worcester campus.

USING THE ANNUAL FINANCIAL REPORT

This discussion and analysis is intended to serve as an introduction to the Authority's basic financial statements. The Authority's financial statements comprise two primary components: 1) the financial statements and 2) the notes to the financial statements.

Financial statements and notes

The University's financial statements are prepared in accordance with U.S. generally accepted accounting principles ("GAAP") as prescribed by the Governmental Accounting Standards Board ("GASB"), which establishes financial reporting standards for governmental entities. The Authority's financial statements report its activities as business-type using the economic resources measurement focus, and the full accrual basis of accounting. The Authority is a blended component unit of the University. Therefore, the results of the Authority's operations, its net position, and its cash flows are included in the University's financial statements. Further information on the operations of the Authority and significant accounting policies are summarized in Notes 1 and 2 of the accompanying financial statements.

The accompanying financial statements are designed to provide readers with a broad overview of the Authority's finances and are comprised of three basic statements.

The Statements of Net Position present information on all of the Authority's assets, deferred outflows, and liabilities, with the difference reported as net position. Over time, increases or decreases in net position may serve as a useful indicator of whether the financial position of the Authority is improving or deteriorating.

The Statements of Revenues, Expenses and Changes in Net Position present information that shows how the Authority's net position changed during the most recent fiscal year. All changes in net position are reported as soon as the underlying event giving rise to the change occurs, regardless of the timing of related cash flows. Thus, revenues and expenses are reported in this statement for some items that will only result in cash flows in future fiscal periods (e.g., the payments to vendors after year-end for services prior to year-end).

The Statements of Cash Flows are reported on the direct method. The direct method of cash flow reporting portrays net cash flows from operations as major classes of operating receipts (e.g., income from contracts) and disbursements (e.g., cash paid to vendors for services), as well as capital and related financing and noncapital financing, if any, and investing activities. The financial statements can be found on pages 10 to 12 of this report.

The notes provide additional information that is essential to a full understanding of the data provided in the financial statements. The notes provide information regarding the accounting policies the Authority has adopted as well as additional details of certain amounts contained in the financial statements. The notes to the financial statements can be found on pages 13 to 33 of this report.

NET POSITION

As noted earlier, over time the Authority's net position may serve as a useful indicator of the Authority's financial position. In the case of the Authority, assets and deferred outflows exceeded liabilities by \$1.20 billion at the close of the most recent fiscal year.

A portion of the Authority's net position reflects its investment in capital assets (e.g., buildings, equipment and furnishings) less any related debt used to acquire those assets that is still outstanding for the most recent fiscal year. The Authority uses these capital assets to provide services to students, faculty and administration; consequently, these assets are not available for future spending. Although the Authority's investment in capital assets is reported net of related debt, it should be noted that the resources needed to repay this debt must be provided from other sources, since the capital assets themselves cannot be used to liquidate these liabilities. The Authority's primary sources of funds used to repay the debt are receipts related to the Authority's financial contracts with the University. These contracts generally call for the Authority to bill and collect all revenue from the projects and remit to the Trustee under the Authority's trust agreements (the "Bond Trustee") funds sufficient to cover debt service on its bonds, its costs of operations, and its financial obligations with respect to the projects.

The Authority's net position (in thousands) is as follows:

Condensed Schedules of Net Position			
As of June 30, 2021, 2020, 2019			
(\$ in thousands)			
	2021	2020	2019
ASSETS			
Current assets	\$ 113,477	\$ 101,937	\$ 98,931
Noncurrent assets	4,314,559	4,371,392	4,196,850
Total assets	4,428,036	4,473,329	4,295,782
DEFERRED OUTFLOWS OF RESOURCES	119,261	125,965	95,954
LIABILITIES			
Current liabilities	208,639	255,104	393,113
Noncurrent liabilities	3,142,847	3,091,710	2,764,157
Total liabilities	3,351,486	3,346,814	3,157,270
NET POSITION			
Net investment in capital assets	1,171,926	1,210,312	1,193,581
Restricted	-	22,060	18,923
Unrestricted	23,885	20,108	21,961
Total net position	\$ 1,195,811	\$ 1,252,480	\$ 1,234,465

Non-current assets decreased by \$56.8 million in fiscal year 2021 compared to fiscal year 2020 due to a decrease in restricted cash of \$125.3 million, noncurrent receivables of \$9.3 million offset by an increase in net capital assets \$77.8 million. Non-current assets increased by \$174.5 million in fiscal year 2020 compared to fiscal year 2019 due an increase in restricted cash of \$124.0 million related to the issuance of new bonds and an increase in net capital assets of \$50.1 million.

Deferred outflows of resources totaled \$119.3 million and \$126 million at the end of fiscal year 2021 and 2020, respectively. The 2021 decrease relates to the termination of the swap agreement in March 2021, offset by an increase in loss on bond refundings. The increase in 2020 was due to the Authority's effective hedging relationship related to its outstanding interest rate swap agreements and for the recording of deferred accounting loss on bond refundings.

Current liabilities decreased in fiscal year 2021 compared to 2020 by \$46.5 million primarily due to a \$93.3 million decrease of the current portion of bonds payable decreases in other current liabilities of \$2 million, offset by an increase of \$18.2 million of accounts payable and increase of \$31 million of commercial paper. Current liabilities decreased in fiscal year 2020 compared to 2019 by \$138 million primarily due to a decrease of \$132 million of commercial paper notes payable, a \$3.6 million decrease in accounts payable, and a \$2.8 million decrease of the current portion of bonds payable.

Non-current liabilities increased in fiscal year 2021 compared to 2020 by \$51.1 million primarily due to an increase in long term bonds payable of \$127.4 million. This increase is offset by the termination of interest rate swap instruments of 73.0 million, a decrease of \$2.3 million in unearned interest income and a decrease of \$1.0 million in other noncurrent liabilities. During fiscal year 2021, the Authority issued \$688.8 million in new bonds with \$71.8 million of new bond premiums and refunded \$585.3 million of existing Authority debt, including \$13.0 million of bond premiums. This increase in long term debt includes principal payments of \$107 million and bond premium amortization of \$21.3 million and a reduction in reclass to current bonds payable of \$93.3 million. Non-current liabilities increased in fiscal year 2020 compared to 2019 by \$327.6 million primarily due to an increase in long term bonds payable of \$317.3 million and an increase in the fair value of the interest rate swap agreements of \$17.4 million. This increase is offset by a decrease of \$5.0 million in unearned interest income and a decrease of \$2.0 million in other noncurrent liabilities. During fiscal year 2020, the Authority issued \$330.6 million in new money bonds with \$57.1 million of new bond premiums and refunded \$254.2 million of existing Authority debt, including \$16.2 million of bond premiums, with \$319.3 million of new debt. This increase in long term debt includes principal payments of \$101.8 million and bond premium amortization of \$20.1 million.

Net investment in capital assets represents capital assets, net of accumulated depreciation and reduced by outstanding balances for bonds, notes, and other debt, as well as deferred outflows of resources and deferred inflows of resources, if any, that are attributable to the acquisition, construction, or improvement of those assets or related debt.

Restricted net position represents funds primarily restricted for debt service. The debt service restricted component of net position represents the funds primarily provided as additional collateral to the bond holders (e.g. debt service reserve funds). The 2020 restricted net position consisted of restricted Section 10 funds supported by Bonds 2008-A and 2011-2. These bonds were refunded in March 2021, resulting in a net change in restricted net position of \$22.1 million.

Unrestricted net position represents those funds that are not subject to restrictions, or for which restrictions have expired. In 2021, the Authority reported a \$23.9 million surplus in the unrestricted component of net position, a \$1.1 million decrease from fiscal year 2020, primarily due to the bond refundings as well as the increase in other current liabilities. In 2020, the Authority reported a \$25.4 million surplus in the unrestricted component of net position, a \$3.4 million increase from fiscal year 2019, primarily due to an increase of \$13.2 million in loan receivables offset by a decrease of \$7.9 million in lease receivables and a decrease of \$1.4 million in unrestricted cash.

The Authority's changes in net position (in thousands) are presented in the table below for the years ended June 30:

Condensed Schedules of Revenues, Expenses, and Changes in Net Position			
As of June 30, 2021, 2020, 2019			
(\$ in thousands)			
	2021	2020	2019
OPERATING REVENUES			
Income from contracts for financial assistance, management, and services	\$ 131,447	\$ 219,984	\$ 214,309
Total operating revenues	131,447	219,984	214,309
OPERATING EXPENSES			
Facility operating costs	6,964	9,470	8,600
Depreciation and amortization	156,373	150,808	140,603
General and administrative expenses	7,318	6,609	4,043
Total operating expenses	170,655	166,887	153,246
Net operating gain / (loss)	(39,208)	53,097	61,063
NON-OPERATING INCOME / (EXPENSES)			
Other non-operating income / (expense)	9,010	15,923	22,500
Interest expense	(108,800)	(110,990)	(118,214)
Total non-operating expenses	(99,790)	(95,067)	(95,714)
CAPITAL CONTRIBUTIONS	82,329	59,985	44,502
TOTAL INCREASE / (DECREASE) IN NET POSITION	(56,669)	18,015	9,851
Net position at the beginning of the year	1,252,480	1,234,465	1,224,614
Net position at the end of the year	\$ 1,195,811	\$ 1,252,480	\$ 1,234,465

Income from contracts for financial assistance, management, and services are primarily related to contracts the Authority has with the University. The Authority has entered into various contracts with the University, acting by and through the Trustees, related to the management of certain Authority projects and the payment to the Authority of certain fees and operating costs. The Authority fixes fees, rents, rates and other charges for the use of its projects in amounts sufficient to provide for the debt service and other payments related to the Authority's obligations and for the Authority's operating expenses. These contracts generally call for the Trustees to bill and collect all revenue derived from the projects and remit to the Authority or to the trustee under the Authority's trust agreements funds sufficient to cover debt service on its bonds, its costs of operations, and its financial obligations with respect to the projects. The amounts fluctuate based on the debt service requirements of the Authority bonds in any particular year. Revenue decreased by \$88.5 million in fiscal year 2021 compared to fiscal year 2020 primarily as a result of decreases in annual debt service due to bond refunding and deferred debt payments.

Facility operating costs include operating costs of the Authority, rental expenses, and expenses paid by the Authority out of reserves for maintenance of Authority-owned buildings. Facility operating costs decreased in fiscal year 2021 compared to fiscal year 2020 due to a decrease in Authority operating costs and utilities.

Depreciation and amortization increased by \$5.6 million in fiscal year 2021 compared to fiscal year 2020 and \$10.2 million in fiscal year 2020 versus fiscal year 2019 as additional new capital assets were placed into service during those years.

Interest expense represents interest paid to the holders of Authority issued debt. In fiscal year 2021 interest expense decreased by \$2.2 million over fiscal year 2020 primarily due to bond refundings resulting in lower interest payments. In fiscal year 2020 interest expense decreased by \$7.2 million over fiscal year 2019 primarily due to bond refundings resulting in lower interest payments.

Capital contributions represent certain grants and gifts provided to the Authority for capital construction at the five campuses. During fiscal year 2021, the Authority received contributions totaling \$82.3 million. The University contributed \$39.4 million to fund various projects including, the Newman Center, Worcester Dining Commons renovation at the Amherst campus as well as the Mt. Ida project, Clark Athletics offices and Training relocation and the SDQD project at Boston. The Authority also received grants totaling \$42.9 million from the Commonwealth's DCAMM to fund projects at the Amherst, Boston, Dartmouth, and Lowell campuses.

During fiscal year 2020, the Authority received contributions totaling \$60 million. The University contributed \$22.4 million to fund the LSL Lab renovation, Worcester Dining Commons renovation, McGuirk Stadium upgrades, Central Campus Core utility project, and various other projects at the Amherst campus, as well as Perry Hall and Pasteur Hall projects at the Lowell campus. The Authority also received grants totaling \$37.6 million from the Commonwealth's DCAMM to fund projects at the Amherst, Boston, Dartmouth, and Lowell campuses.

CAPITAL ASSETS OF THE AUTHORITY

The Authority's investment in capital assets as of June 30, 2021 and 2020 amounted to \$3.8 billion and \$3.7 billion, net of accumulated depreciation. This investment in capital assets included land, buildings, improvements, furnishings, equipment and construction in progress.

Net capital assets increased by \$77.8 million or 2.1% in fiscal year 2021 as capital improvements and construction in progress outpaced depreciation expenses:

- Buildings and building components increased by \$70.8 million, net of accumulated depreciation, in fiscal year 2021, primarily due to the increase in improvements by \$61.3 million, net of accumulated depreciation, and the purchase of the Newman Center building and two other properties in Amherst for \$9.5 million. The increase was also due to placing in service renovations of existing buildings on the campuses.
- Construction In Progress ("CIP") decreased \$10.2 million in fiscal year 2021 as several major projects were completed and transferred to depreciable property. Projects with significant progress, some of which were completed during fiscal year 2021 include: McGuirk Stadium upgrades, Whitmore mechanical improvements, the Worcester Commons, Fine Arts Center bridge renovations, CHP study and expanded capacity, Student union study, Central Campus Core utility project, at the Amherst campus; renovations to existing academic buildings, and the Substructure Demolition & Quadrangle Development (SDQD) at the Boston campus; the new dining facility at the Dartmouth campus.
- Significant projects that remain in progress either in the design or construction phase at the end of fiscal year 2021 included: Goessmann Hall School of Health Sciences renovation, Whitmore mechanical improvements, ATC renovation at Mt. Ida, and Fine Arts Center Bridge renovation at the Amherst campus; the Substructure Demolition & Quadrangle Development (SDQD) at the Boston campus; Olsen Hall critical infrastructure capital repairs at the Lowell campus; the Science & Engineering Building renovation and the 1st Year Residence Hall demolition at the Dartmouth campus; and the New Education and Research Building (NERB) and VA Outpatient Center at the Worcester campus.

DEBT OF THE AUTHORITY

The Authority carries debt in the form of bond obligations. This debt was \$3.2 billion at June 30, 2021 and 2020. The increase of \$34.1 million in fiscal year 2021 is primarily attributable to the issuance of \$688.8 million of new bonds and \$585.3 million of bonds refunded, as further described below, as well as \$71.8 million in new premiums, \$13.0 million of premiums refunded, \$106.8 million of principal payments and the amortization of \$21.3 million of bond premiums.

During fiscal year 2021, the Authority issued \$31 million in commercial paper to finance the New Education and Research Building at the Worcester campus with an interest rate from .16% to .22%.

On October 28, 2020, the Authority issued \$329.9 million of federally taxable Project Revenue Bonds, Series 2020-4. On March 25, 2021, the Authority issued \$312.3 million of Project Revenue Bonds, Series 2021-1 and \$46.6 million of federally taxable Project Revenue Bonds, Series 2021-2. The 2021-1 bonds included a premium of \$71.8 million.

The amount of bond obligation guaranteed by the Commonwealth on bonds outstanding Series 2008-A and 2011-2 was \$0 million and \$108.9 million at June 30, 2021 and June 30, 2020, respectively. Refer to Note 9 of the financial statements for more information. These bonds were refunded with bond series 2021-1 in March 2021.

As of June 30, 2021, the ratings assigned to the Authority's bonds are as follows: Aa3 by Moody's Investor Service, AA by Fitch Ratings, and AA- by Standard and Poor's Global Rating.

THE UNIVERSITY OF MASSACHUSETTS CLUB

The Authority operates the University of Massachusetts Club (the "Club"). The Club is a private club open to membership for alumni, faculty, staff, and friends of the University and is located on the 32nd floor of One Street Beacon in Boston, Massachusetts.

REQUESTS FOR INFORMATION

This financial report is designed to provide a general overview of the Authority's finances for all those with an interest in them. Questions concerning any information provided in this report or requests for additional financial information should be addressed to the Chief Financial Officer, University of Massachusetts Building Authority, One Beacon Street, 31st Floor, Boston, Massachusetts 02108. Additional information on the Authority can be found on its web site, www.umassba.net

UNIVERSITY OF MASSACHUSETTS BUILDING AUTHORITY
(A Component Unit of the University of Massachusetts)
Statements of Net Position
June 30, 2021 and 2020
(\$ in thousands)

ASSETS	2021	2020
Current assets		
Cash and cash equivalents	\$ 22,700	\$ 20,665
Restricted investments	-	5,318
Accounts receivable (net of allowances of \$399 at June 30, 2021 and \$3 at June 30, 2020)	2,135	1,670
Intergovernmental receivables		
Commonwealth of Massachusetts	15,301	4,660
U.S. government	5,047	1,261
University of Massachusetts	625	625
Loans receivable, current portion	11,868	11,230
EMKI lease receivable, current portion	5,072	5,066
Prepays and other current assets	2,491	2,443
Restricted receivables - University of Massachusetts	48,238	48,999
Total current assets	113,477	101,937
Noncurrent assets		
Restricted cash and cash equivalents	194,710	320,044
Loans receivable, non-current portion	222,928	227,173
EMKI lease receivable, non-current portion	96,623	101,694
Capital assets, net	3,798,946	3,721,176
Other assets	1,352	1,305
Total noncurrent assets	4,314,559	4,371,392
Total assets	4,428,036	4,473,329
DEFERRED OUTFLOWS OF RESOURCES		
Debt refundings	119,261	72,987
Change in fair value of interest rate swap agreements	-	52,978
Total deferred outflows of resources	119,261	125,965
Total assets and deferred outflows of resources	4,547,297	4,599,294
LIABILITIES		
Current liabilities		
Accounts payable	31,513	13,290
Retainage payable to contractors	8,210	7,738
Bonds payable, current portion	98,895	192,210
Commercial paper notes	31,000	-
Accrued bond interest payable	21,094	21,832
Unearned interest income	2,330	2,414
Other current liabilities	15,597	17,620
Total current liabilities	208,639	255,104
Noncurrent liabilities		
Bonds payable, net of current portion and unamortized bond premium	3,106,570	2,979,124
Derivative instruments, interest rate swaps	-	72,981
Unearned interest income	25,926	28,257
Other noncurrent liabilities	10,351	11,348
Total noncurrent liabilities	3,142,847	3,091,710
Total liabilities	3,351,486	3,346,814
NET POSITION		
Net investment in capital assets	1,171,926	1,210,312
Restricted for:		
Debt service	-	22,060
Unrestricted	23,885	20,108
Total net position	\$ 1,195,811	\$ 1,252,480

See accompanying notes to the financial statements.

UNIVERSITY OF MASSACHUSETTS BUILDING AUTHORITY
(A Component Unit of the University of Massachusetts)
Statements of Revenues, Expenses, and Changes in Net Position
For the Years Ended June 30, 2021 and 2020
(\$ in thousands)

REVENUES	2021	2020
Operating Revenues		
Income from contracts for financial assistance, management, and services	\$ 131,447	\$ 219,984
Total operating revenues	131,447	219,984
OPERATING EXPENSES		
Facility operating costs	6,964	9,470
Depreciation	156,373	150,808
Insurance	2,535	2,195
Professional fees	4,739	4,325
General and administrative expenses	44	89
Total operating expenses	170,655	166,887
Operating income/ (loss)	(39,208)	53,097
NONOPERATING REVENUES (EXPENSES)		
Interest subsidy - U.S. government	7,578	7,560
Interest income	4,177	8,470
Interest expense	(108,800)	(110,990)
Other revenues (expenses)	(2,745)	(107)
Total nonoperating revenues (expenses)	(99,790)	(95,067)
CAPITAL CONTRIBUTIONS		
University of Massachusetts	39,394	22,399
Commonwealth of Massachusetts	42,935	37,586
Total capital contributions	82,329	59,985
Total increase (decrease) in net position	(56,669)	18,015
NET POSITION		
Net position at beginning of year	1,252,480	1,234,465
Net position at end of year	\$ 1,195,811	\$ 1,252,480

See accompanying notes to the financial statements.

UNIVERSITY OF MASSACHUSETTS BUILDING AUTHORITY
(A Component Unit of the University of Massachusetts)
Statements of Cash Flows
For the Years Ended June 30, 2021 and 2020
(\$ in thousands)

	2021	2020
CASH FLOWS FROM OPERATING ACTIVITIES		
Cash received from income from contracts for financial assistance	\$ 131,343	\$ 217,297
Payments to vendors and suppliers	(10,205)	(12,088)
Payments of salaries and benefits	(3,173)	(4,604)
Net cash provided by operating activities	117,965	200,605
CASH FLOWS FROM CAPITAL AND OTHER FINANCING ACTIVITIES		
Capital asset expenditures	(221,815)	(207,663)
Repayment of bond principal	(692,105)	(356,472)
Interest payments to bondholders	(159,288)	(158,602)
Swap termination payments	(50,938)	-
Repayment of commercial paper obligations	-	(142,447)
Build America Bonds interest subsidy	3,792	7,555
Capital lease receipts	5,066	7,875
Loans receivable receipts (advances)	3,607	(14,692)
Commercial paper advances	31,000	10,500
Capital contribution receipts	71,689	65,649
Proceeds from bond obligations	688,845	650,015
Proceeds from premiums	71,803	57,127
Net cash used in capital financing activities	(248,344)	(81,155)
CASH FLOWS FROM INVESTING ACTIVITIES		
Proceeds from the sale of investments	5,472	-
Interest income	1,608	3,126
Net cash provided by investing activities	7,080	3,126
NET INCREASE (DECREASE) IN CASH AND CASH EQUIVALENTS	(123,299)	122,576
Cash and cash equivalents - beginning of the year	340,709	218,133
Cash and cash equivalents - end of the year	217,410	340,709
RECONCILIATION OF OPERATING LOSS TO NET CASH PROVIDED BY OPERATING ACTIVITIES		
Operating income (loss)	(39,208)	53,097
Adjustments to reconcile operating income (loss) to net cash provided by operating activities:		
Depreciation and amortization	156,373	150,808
Loss on disposal of capital assets	(2,358)	-
Changes in assets and liabilities:		
Accounts receivable, net	(104)	(2,686)
Prepays and other current assets	(721)	(319)
Accounts payable - non-construction related	3,983	(295)
Net cash provided by operating activities	117,965	200,605
SUPPLEMENTAL DISCLOSURE OF NON-CASH CAPITAL AND RELATED FINANCING ACTIVITIES		
Capital assets acquired and included in accounts and retainage payable and other liabilities	\$ 52,345	\$ 40,654

See accompanying notes to the financial statements.

UNIVERSITY OF MASSACHUSETTS BUILDING AUTHORITY
(A Component Unit of the University of Massachusetts)
Notes to Financial Statements
June 30, 2021 and 2020

Notes to Financial Statements

1) OPERATIONS OF THE AUTHORITY

The University of Massachusetts Building Authority (the "Authority" or "UMBA") is a body politic and corporate and a public instrumentality of The Commonwealth of Massachusetts (the "Commonwealth"). The Authority was created by Chapter 773 of the Acts of 1960 of the Commonwealth, as amended (the "Enabling Act"). The purposes of the Authority are to provide dormitories, dining commons and other buildings and structures for use by the University of Massachusetts (the "University"), its students, staff and their dependents and other entities associated with the University as requested by authority of the Trustees of the University (the "Trustees").

The Enabling Act provides that the Authority shall have eleven members, five of whom shall also be trustees of the University. Members of the Authority are appointed by the Governor of the Commonwealth. Two of the other members must be graduates of the University. Non-trustee members serve terms of approximately six years while trustee members serve until they are no longer trustees of the University. Members whose terms have expired continue to be members until reappointed or replaced.

The major functions of the Authority include the issuance of bonds to finance projects requested by the Trustees; the planning and construction or renovations related to those projects; the setting and collection of fees, rents, rates and other charges related to such projects; debt service administration; and maintenance and repair of its projects. In conjunction with its financings, the Authority has entered into contracts with the Commonwealth, acting by and through the Trustees, with respect to its projects that provide for payments for debt service and other costs of the financings as well as the operating costs of the Authority and its projects.

As stated in the Enabling Act, the Authority may sell bonds and notes, in either a public or private sale, at a price and with such terms as it may determine are in the best interest of the Authority, provided that the bonds of each issue mature no later than fifty years from their date and the sale and terms thereof have been approved by the Treasurer and Receiver-General and the Secretary of Administration and Finance of the Commonwealth or their designees.

The Authority is exempt from federal and state income tax under the doctrine of intergovernmental tax immunity found in the U.S. Constitution. The Authority qualifies as a public charity under Section 170(b)(1)(A)(iv) of the Internal Revenue Code. Accordingly, no provision for income taxes has been recorded in the accompanying financial statements.

The Authority's financial statements are included in the University's financial statements as a blended component unit.

2) SUMMARY OF SIGNIFICANT ACCOUNTING POLICIES

a) *Basis of accounting*

The Authority's financial statements have been prepared using the economic resources measurement focus and the accrual basis of accounting. The financial statements of the Authority have been prepared in conformity with accounting principles generally accepted in the United States of America ("US GAAP") as applied to governmental entities. The Governmental Accounting Standards Board ("GASB") is the accepted standard setting body for establishing governmental accounting and financial reporting principles.

UNIVERSITY OF MASSACHUSETTS BUILDING AUTHORITY
(A Component Unit of the University of Massachusetts)
Notes to Financial Statements
June 30, 2021 and 2020

Under the economic resources measurement focus, the Authority distinguishes operating revenues and expenses from non-operating revenues and expenses. Operating revenues and expenses result primarily from providing, operating and maintaining Authority facilities for use by the University. The principal sources of operating revenues include income from contracts for financial assistance, which represents amounts needed for debt service and related expenses received from the University, and fees charged to the University for services. Operating expenses for the Authority include facility operating costs, depreciation of capital assets, professional fees and other administrative costs. All revenues and expenses not categorized as operating revenues and expenses are reported as non-operating.

Under the accrual basis of accounting, revenues are recorded when earned and expenses are recorded when the liability is incurred, regardless of when the related cash flow takes place.

b) Use of Estimates

The preparation of financial statements in conformity with US GAAP requires management to make estimates and assumptions that affect the reported amounts of assets and liabilities and disclosure of contingent assets and liabilities at the date of the financial statements and the reported amounts of revenues and expenses during the reporting period. Actual results could differ from those estimates.

c) Restricted Assets

Certain proceeds of the Authority's bonds, as well as certain resources set aside for their repayment, are classified as restricted assets in the accompanying Statements of Net Position because their use is limited by bond trust agreements.

The following sets forth the restricted cash and cash equivalent and investment balances as of June 30 (\$ in thousands):

	<u>2021</u>	<u>2020</u>
Restricted cash and cash equivalents:		
Capital projects fund	\$ 194,710	\$ 303,302
Debt service fund	-	16,742
Total restricted cash and cash equivalents	<u>\$ 194,710</u>	<u>\$ 320,044</u>
Restricted investments:		
Debt service fund	<u>\$ -</u>	<u>\$ 5,318</u>

d) Capital Assets and Depreciation

Property, plant and equipment are stated at cost on the date of acquisition, or at fair market value if contributed. Construction in progress is included as a capital asset. Construction in progress is stated at cost, which includes direct construction costs and other expenditures related to construction including capitalized interest, if any. All construction costs related to projects which are not yet completed are charged to construction in progress until such time as the projects are completed and placed in operation.

Depreciation is computed using the straight-line method over the estimated useful lives of the assets from the date the property is placed in operation. Land is not depreciated. The useful lives applicable to the Authority are as follows:

Buildings	12 to 50 years
Building, leasehold and land improvements	3 to 20 years
Equipment	3 to 10 years
Furnishings	3 to 10 years

e) Capitalized Interest

The Authority capitalizes interest costs incurred during the construction period of qualifying property assets. The amount of capitalized interest costs consists of all interest costs of the borrowing relating to the qualifying assets less any related interest earned from the date of the borrowing until the assets are ready for their intended use. Interest capitalized during the years ended June 30, 2021 and 2020, totaled \$7.6 million and \$5.9 million, respectively, net of interest income of \$0.21 million and \$1.3 million, respectively.

UNIVERSITY OF MASSACHUSETTS BUILDING AUTHORITY
(A Component Unit of the University of Massachusetts)
Notes to Financial Statements
June 30, 2021 and 2020

f) 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. The 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 established by GASB 79 to report its holdings at amortized cost. As such, the 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.

g) Investments

Investments in repurchase agreements are non-participating interest earning investment contracts and are recorded at cost. These repurchase agreements are secured by cash or investments with a fair market value between 100% and 105% of the repurchase price, depending on the type of asset used as security and the specific repurchase agreement. These repurchase agreements can be redeemed at any time for the repurchase price provided the redemption proceeds are used for a purpose permitted by the respective repurchase agreement.

Realized and unrealized gains (losses) on investments, if any, include the net changes in the fair value of investments.

h) Net Position

Net position is reported in three categories:

Net investment in capital assets - this category consists of capital assets, net of accumulated depreciation and reduced by outstanding balances for bonds, notes, and other debt, as well as deferred outflows of resources that are attributed to the acquisition, construction or improvement of those assets.

Restricted component of net position - this category consists of assets whose use is restricted either through external restrictions imposed by creditors, grantors, contributors and the like, or through restrictions imposed by law through constitutional provisions or enabling legislation. Debt service restricted assets are funds primarily provided as additional collateral to the bond holders (e.g. debt service reserve funds).

Unrestricted component of net position - this category consists of net assets which do not meet the definition of the two preceding categories and are available to support the Authority's operations.

For purposes of net position classification, when both restricted and unrestricted resources are available for use, it is the Authority's policy to use restricted resources first, and then unrestricted resources.

i) Capital Contributions

Capital contributions are for capital asset acquisition, facility development and long-term planning studies, and are reported in the accompanying Statements of Revenues, Expenses, and Changes in Net Position after non-operating revenues and expenses as capital contributions when the associated capitalized expenditures are incurred.

j) Insurance

The Authority carries a full complement of third-party insurance, including workers compensation, property, general liability, hire and non-owned auto coverage, an umbrella policy complemented with an excess policy, director & officers (D&O) complemented with an excess policy, crime coverage and social engineering coverage.

In addition, the Owner-controlled Consolidated Insurance Program ("OCIP") was established to provide insurance coverage for contractors on selected Authority capital projects. This program provides workers' compensation and general liability insurance coverage for most contractors working on projects in the program. The program has a deductible component that is funded by the Authority. The deductible component is limited on both a per-occurrence basis and an aggregate basis for all OCIP-covered projects by stop-loss insurance.

UNIVERSITY OF MASSACHUSETTS BUILDING AUTHORITY
(A Component Unit of the University of Massachusetts)
Notes to Financial Statements
June 30, 2021 and 2020

This exposure is partially secured by and paid out of an escrow trust fund set up for this purpose as a requirement of the stop-loss insurer. The total deductible exposure, plus unpaid OCIP-related insurance premiums and expenses committed to the OCIP, is addressed by the Authority with an OCIP reserve of \$3.8 million and \$4.0 million as of June 30, 2021 and June 30, 2020, respectively, which is presented as Other Liabilities in the accompanying Statements of Net Position.

k) Revenue Recognition

The Authority's major revenue source is the financing income and fees for services that are primarily related to contracts with the University. The Authority has entered into various contracts with the University, acting by and through the Trustees, related to the management of certain authority projects and the payment to the Authority of certain fees and operating costs. The Authority fixes fees, rents, rates and other charges for the use of its projects in amounts sufficient to provide for the debt service and other payments related to the Authority's obligations and for the Authority's operating expenses. These contracts generally call for the University to bill and collect all revenue derived from the projects and remit to the Authority or to the trustee under the Authority's trust agreements funds sufficient to cover debt service on its bonds, its costs of operations, and its financial obligations with respect to the projects. Revenue is recognized when earned consistent with the accrual basis of accounting and is included in financing income and fees for services line item on the Statement of Revenues, Expenses and Changes in Net Position.

The Authority records revenue associated with the interest rate subsidy provided by the United States Government related to the Authority's issuance of bonds under the Build America Bond ("BAB") program. Under the program, the Government provides a direct 35% subsidy of the interest rate paid to bondholders. During fiscal year 2013, the federal government implemented automatic budget cuts imposed through sequestration required pursuant to the Budget Control Act of 2011. In fiscal year 2021, the Authority's November 1, 2020 and May 1, 2021 original 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 reduced by 5.9% and 5.7%, respectively. In fiscal year 2020, the Authority's November 1, 2019 and May 1, 2020 original 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 reduced by 6.2% and 5.9%, respectively. This reduction was \$0.5 million in fiscal year 2021 and \$0.49 million in fiscal year 2020. As of June 30, 2021, the November 1, 2020 payment had not been received and a receivable was recorded in the amount of \$3.8 million.

l) Lease Accounting

For operating leases, the Authority recognizes rental income and expenses using a systematic and rational approach over the lease term. For capital leases, unearned interest is amortized to revenue over the lease term.

m) Derivative Instruments

The Authority's contracts were evaluated pursuant to GASB Statement No. 53, *Accounting and Financial Reporting for Derivative Instruments* ("GASB No. 53") to determine whether they met the definition of derivative instruments, and if so, whether they effectively hedged the expected cash flows associated with interest rate risk exposures. The Authority applied hedge accounting for derivative instruments that were deemed effective hedges and under GASB No. 53 were referred to as hedging derivative instruments. Under hedge accounting, changes in the fair value of a hedging derivative instrument were reported as a deferred inflow or deferred outflow in the Statement of Net Position until the contract was settled or terminated.

3) CASH DEPOSITS AND INVESTMENTS

Cash Deposits - Custodial Credit Risk

The Authority holds a majority of its cash and cash equivalents in high quality money market mutual funds that invest in securities that are permitted investments under the Authority's Enabling Act or in money market mutual funds that have been specifically permitted by state legislation.

UNIVERSITY OF MASSACHUSETTS BUILDING AUTHORITY
(A Component Unit of the University of Massachusetts)
Notes to Financial Statements
June 30, 2021 and 2020

The Authority's cash and cash equivalents held on deposit consisted of the following as of June 30 (\$ in thousands):

	<u>2021</u>	<u>2020</u>
Cash	\$ 7,903	\$ 5,506
MMDT	206,695	330,712
Permitted money market accounts	<u>2,812</u>	<u>4,491</u>
Total cash and cash equivalents	<u>\$ 217,410</u>	<u>\$ 340,709</u>

Custodial credit risk is the risk that, in the event of a bank failure, the Authority will not be able to recover its deposits or will not be able to recover collateral securities that are in the possession of an outside party. The Authority does not have a deposit policy for custodial credit risk. As of June 30, 2021 and 2020, the bank balances of uninsured deposits totaled \$7.7 million and \$5.5 million, respectively.

Investments

The Authority had debt securities with maturities of less than one year of \$5,318 as of June 30, 2020. The Authority had no investments as of June 30, 2021.

Interest Rate Risk

The Authority has a formal investment policy that establishes minimum credit quality of certain instruments, outlines investment procedures, and provides for periodic reporting. Generally, the Authority holds its investments until maturity.

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.

The Enabling Act specifies the permitted investments of the Authority. These permitted investments include direct obligations of or obligations which are unconditionally guaranteed by the United States of America ("Treasuries"), obligations of an agency or organization created pursuant to an act of Congress of the United States as an agency or instrumentality thereof ("Agencies"), time deposits or certificates of deposits fully secured by Treasuries or Agencies, and Treasuries and Agencies subject to repurchase agreements. Other legislation allows the Authority to invest in MMDT. Additionally, in accordance with the Authority investment policy, the Authority's Bond Trustee may invest some of the Authority's funds in money market accounts, permitted and collateralized by Treasuries.

The Authority's investments in repurchase agreements are not rated but are fully collateralized by Treasuries and Agencies.

Investments - Custodial Credit Risk

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 the investment or collateral securities that are in the possession of an outside party. The Authority's Enabling Act does not contain legal or policy requirements that would limit the exposure to custodial credit risk, except that interest-bearing time deposits or certificates of deposit of banking institutions or trust companies must be continuously and fully secured by Treasuries or Agencies.

In accordance with the Authority's repurchase agreements, collateral for the agreements is held in segregated accounts with market values between 100% and 105% of the repurchase price, depending on the type of asset used as security and the specific repurchase agreement.

UNIVERSITY OF MASSACHUSETTS BUILDING AUTHORITY
(A Component Unit of the University of Massachusetts)
Notes to Financial Statements
June 30, 2021 and 2020

Fair Value Measurements

GASB No. 72, "Fair Value Measurements and Application" sets forth the framework for measuring fair value. That framework provides a fair value hierarchy that prioritizes the inputs to valuation techniques used to measure fair value. The hierarchy gives the highest priority to unadjusted quoted prices in active markets for identical assets or liabilities (Level 1 measurements) and the lowest priority to unobservable inputs (Level 3 measurements). The three levels of the fair value hierarchy are as follows:

- Level 1 - inputs to the valuation methodology are unadjusted quoted prices for identical assets or liabilities in active markets that the Authority has the ability to access.
- Level 2 - inputs other than Level 1 that are observable, either directly or indirectly, and 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 - unobservable inputs that are supported by little or no market activity and that are significant to the fair value measurement. Unobservable inputs are developed based on the best information available in the circumstances and may include the Authority's own data.

All the Authority's investments at June 30, 2020 consist of repurchase agreements, which were measured at amortized cost.

4) CAPITAL ASSETS

A summary of changes in capital assets follows (\$ in thousands):

	Balance June 30, 2019	Additions	Retirements/ Adjustments	Balance June 30, 2020	Additions	Retirements/ Adjustments	Balance June 30, 2021
Land	\$ 117,801	\$ -	\$ -	\$ 117,801	\$ 4,016	\$ -	\$ 121,817
Buildings	3,614,542	54,080	-	3,668,622	177,526	(2,042)	3,844,106
Building and land improvements	765,158	96,946	(2,349)	859,755	64,755	(6,553)	917,957
Equipment and furnishings	82,820	21	-	82,841	401	(270)	82,972
Construction in progress	151,498	191,181	(141,142)	201,537	230,245	(240,443)	191,339
Subtotal	4,731,819	342,228	(143,491)	4,930,556	476,943	(249,308)	5,158,191
Less: accumulated depreciation							
Buildings	(732,928)	(103,824)		(836,752)	(106,657)	2,042	(941,367)
Building and land improvements	(283,101)	(40,846)	2,242	(321,705)	(44,117)	4,195	(361,627)
Equipment and furnishings	(44,785)	(6,138)		(50,923)	(5,599)	271	(56,251)
Subtotal	(1,060,814)	(150,808)	2,242	(1,209,380)	(156,373)	6,508	(1,359,245)
Total capital assets, net	\$ 3,671,005	\$ 191,420	\$ (141,249)	\$ 3,721,176	\$ 320,570	\$ (242,800)	\$ 3,798,946

UNIVERSITY OF MASSACHUSETTS BUILDING AUTHORITY
(A Component Unit of the University of Massachusetts)
Notes to Financial Statements
June 30, 2021 and 2020

5) BONDS PAYABLE

The following is a summary of bonds outstanding for the year ended June 30, 2021 and the related activity during the fiscal year (\$ in thousands):

Bond Description	Original borrowing	Maturity Year	Interest Rate	Outstanding June 30, 2020	Additions	Reductions	Outstanding June 30, 2021	Insured	Commonwealth Guaranteed (Note 9)	Callable	Call Date Month/Year
Project Revenue Bonds, Senior Series 2008-1	\$ 232,545	2038	Variable	\$ 145,515	\$ -	\$ (145,515)	\$ -	No	No	At Par	Anytime
Facility Revenue Bonds, Senior Series 2008-A	26,580	2038	Variable	16,050	-	(16,050)	-	No	Yes	At Par	Anytime
Project Revenue Bonds, Senior Series 2009-2 (Federally Taxable - Build America Bonds - Direct Pay to Issuer)	271,855	2039	6.42% to 6.57%	16,945	-	-	16,945	No	No	At Par	Anytime
Project Revenue Bonds, Senior Series 2009-3 (Federally Taxable)	28,570	2039	5.82% to 6.17%	23,825	-	(690)	23,135	No	No	*	Anytime
Project Revenue Bonds, Senior Series 2010-1	118,985	2020	5.00%	15,900	-	(15,900)	-	No	No	No	-
Project Revenue Bonds, Senior Series 2010-2 (Federally Taxable - Build America Bonds - Direct Pay to Issuer)	430,320	2040	3.80% to 5.45%	430,320	-	-	430,320	No	No	*	Anytime
Project Revenue Bonds, Senior Series 2010-3 (Federally Taxable)	3,005	2040	5.75%	2,555	-	(65)	2,490	No	No	*	Anytime
Refunding Revenue Bonds, Senior Series 2011-1	135,040	2034	Variable	122,010	-	(122,010)	-	No	No	At Par	Anytime
Refunding Revenue Bonds, Senior Series 2011-2	101,700	2034	Variable	92,800	-	(92,800)	-	No	Yes	At Par	Anytime
Project Revenue Bonds, Senior Series 2013-1	212,585	2043	2.00% to 5.00%	95,170	-	(81,435)	13,735	No	No	At Par	Nov-22
Project Revenue Bonds, Senior Series 2013-2 (Federally Taxable)	71,970	2043	0.43% to 4.26%	58,200	-	(26,190)	32,010	No	No	At Par	Nov-23
Project and Refunding Revenue Bonds, Senior Series 2013-3	24,640	2043	4.00% to 5.00%	1,380	-	(435)	945	No	No	At Par	May-23

UNIVERSITY OF MASSACHUSETTS BUILDING AUTHORITY
(A Component Unit of the University of Massachusetts)
Notes to Financial Statements
June 30, 2021 and 2020

Bond Description	Original borrowing	Maturity Year	Interest Rate	Outstanding June 30, 2020	Additions	Reductions	Outstanding June 30, 2021	Insured	Commonwealth Guaranteed (Note 9)	Callable	Call Date Month/Year
Project Revenue Bonds, Senior Series 2014-1	293,890	2044	3.00% to 5.00%	147,675	-	(80,850)	66,825	No	No	At Par	Nov-24
Refunding Revenue Bonds, Senior Series 2014-3	67,635	2029	2.00% to 5.00%	50,680	-	(22,045)	28,635	No	No	At Par	Nov-24
Refunding Revenue Bonds, Senior Series 2014-4	157,855	2025	0.20% to 3.38%	30,540	-	(16,675)	13,865	No	No	*	Anytime
Project Revenue Bonds, Senior Series 2015-1	298,795	2045	4.00% to 5.00%	298,795	-	(31,915)	266,880	No	No	At Par	Nov-25
Refunding Revenue Bonds, Senior Series 2015-2	191,825	2036	3.00% to 5.00%	179,805	-	(22,040)	157,765	No	No	At Par	Nov-25
Refunding Revenue Bonds, Senior Series 2017-1	165,130	2047	4.00% to 5.25%	165,130	-	-	165,130	No	No	At Par	Nov-27
Refunding Revenue Bonds, Senior Series 2017-2	19,510	2027	1.58% to 3.37%	16,595	-	(1,495)	15,100	No	No	No	-
Refunding Revenue Bonds, Senior Series 2017-3	187,680	2038	3.00% to 5.00%	160,015	-	(4,385)	155,630	No	No	At Par	Nov-27
Direct Placement Project Revenue Bonds, Senior Series 2018-1	37,650	2043	2.00% to 2.93%	37,650	-	-	37,650	No	No	At Par	Anytime
Refunding Revenue Bonds, Senior Series 2019-1	208,725	2039	5.00%	208,725	-	-	208,725	No	No	At Par	May-29
Project Revenue Bonds, Senior Series 2020-1	200,840	2050	5.00%	200,840	-	-	200,840	No	No	At Par	Nov-29
Project Revenue Bonds, Senior Series 2020-2 (Federally Taxable)	129,830	2050	1.76-3.54%	129,830	-	-	129,830	No	No	At Par	Nov-29

UNIVERSITY OF MASSACHUSETTS BUILDING AUTHORITY
(A Component Unit of the University of Massachusetts)
Notes to Financial Statements
June 30, 2021 and 2020

Bond Description	Original borrowing	Maturity Year	Interest Rate	Outstanding June 30, 2020	Additions	Reductions	Outstanding June 30, 2021	Insured	Commonwealth Guaranteed (Note 9)	Callable	Call Date Month/Year
Refunding Revenue Bonds, Senior Series 2020-3 (Federally Taxable)	319,345	2044	1.71-3.50%	319,345	-	(1,550)	317,795	No	No	At Par	Nov-29
Refunding Revenue Bonds, Senior Series 2020-4 (Federally Taxable)	329,930	2043	.43%-3.013%	-	329,930	-	329,930	No	No	*	Anytime
Refunding Revenue Bonds, Senior Series 2021-1	312,330	2037	5.00%	-	312,330	(10,060)	302,270	No	No	At Par	May-31
Refunding Revenue Bonds, Senior Series 2021-2 (Federally Taxable)	46,585	2036	0.15%	-	46,585	-	46,585	No	No	At Par	May-31
Unamortized bond premium				205,039	71,803	(34,412)	242,430				
Total				\$ 3,171,334	\$ 760,648	\$ (726,517)	\$ 3,205,465				

*These series of bonds are callable at the Make-Whole Redemption Price which equals the greater of the outstanding principal balance or the present value of the scheduled future principal and interest payments, which payments are discounted at the Treasury Rate plus 25 basis points (2009 Series Bonds) or 30 basis points (2010 Series Bonds).

UNIVERSITY OF MASSACHUSETTS BUILDING AUTHORITY
(A Component Unit of the University of Massachusetts)
Notes to Financial Statements
June 30, 2021 and 2020

The following is a summary of bonds outstanding for the year ended June 30, 2020 and the related activity during the fiscal year (\$ in thousands):

Bond Description	Outstanding June 30, 2019	Additions	Reductions	Outstanding June 30, 2020
Project Revenue Bonds, Senior Series 2008-1	\$ 154,480	\$ -	\$ (8,965)	\$ 145,515
Facility Revenue Bonds, Senior Series 2008-A	17,120	-	(1,070)	16,050
Project Revenue Bonds, Senior Series 2009-2 (Federally Taxable - Build America Bonds - Direct Pay to Issuer)	16,945	-	-	16,945
Project Revenue Bonds, Senior Series 2009-3 (Federally Taxable)	24,480	-	(655)	23,825
Project Revenue Bonds, Senior Series 2010-1	31,055	-	(15,155)	15,900
Project Revenue Bonds, Senior Series 2010-2 (Federally Taxable - Build America Bonds - Direct Pay to Issuer)	430,320	-	-	430,320
Project Revenue Bonds, Senior Series 2010-3 (Federally Taxable)	2,615	-	(60)	2,555
Refunding Revenue Bonds, Senior Series 2011-1	123,540	-	(1,530)	122,010
Refunding Revenue Bonds, Senior Series 2011-2	93,955	-	(1,155)	92,800
Project Revenue Bonds, Senior Series 2013-1	188,675	-	(93,505)	95,170
Project Revenue Bonds, Senior Series 2013-2 (Federally Taxable)	60,530	-	(2,330)	58,200
Project and Refunding Revenue Bonds, Senior Series 2013-3	24,240	-	(22,860)	1,380
Project Revenue Bonds, Senior Series 2014-1	291,890	-	(144,215)	147,675
Project Revenue Bonds, Senior Series 2014-2	2,905	-	(2,905)	-
Refunding Revenue Bonds, Senior Series 2014-3	54,555	-	(3,875)	50,680
Refunding Revenue Bonds, Senior Series 2014-4	61,600	-	(31,060)	30,540

UNIVERSITY OF MASSACHUSETTS BUILDING AUTHORITY
(A Component Unit of the University of Massachusetts)
Notes to Financial Statements
June 30, 2021 and 2020

Bond Description	Outstanding June 30, 2019	Additions	Reductions	Outstanding June 30, 2020
Project Revenue Bonds, Senior Series 2015-1	298,795	-	-	298,795
Refunding Revenue Bonds, Senior Series 2015-2	186,075	-	(6,270)	179,805
Refunding Revenue Bonds, Senior Series 2017-1	165,130	-	-	165,130
Refunding Revenue Bonds, Senior Series 2017-2	18,065	-	(1,470)	16,595
Refunding Revenue Bonds, Senior Series 2017-3 Direct Placement	178,945	-	(18,930)	160,015
Project Revenue Bonds, Senior Series 2018-1	37,650	-	-	37,650
Refunding Revenue Bonds, Senior Series 2019-1	208,725	-	-	208,725
Project Revenue Bonds, Senior Series 2020-1	-	200,840	-	200,840
Project Revenue Bonds, Senior Series 2020-2 (Federally Taxable)	-	129,830	-	129,830
Refunding Revenue Bonds, Senior Series 2020-3 (Federally Taxable)	-	319,345	-	319,345
Unamortized bond premium	184,173	57,147	(36,281)	205,039
Total	\$ 2,856,463	\$ 707,162	\$ (392,291)	\$ 3,171,334

UNIVERSITY OF MASSACHUSETTS BUILDING AUTHORITY
(A Component Unit of the University of Massachusetts)
Notes to Financial Statements
June 30, 2021 and 2020

Aggregate annual maturities of principal and interest on bonds outstanding as of June 30, 2021 are as follows (\$ in thousands):

Fiscal year end	Bonds			Direct Placement Bonds		Total
	Principal	Interest	Interest Subsidy*	Principal	Interest	
2022	\$ 98,895	\$ 124,050	\$ (7,439)	\$ -	\$ 763	\$ 216,269
2023	112,085	119,994	(7,224)	-	763	225,618
2024	115,705	115,547	(6,993)	1,655	754	226,668
2025	113,310	111,099	(6,729)	1,690	718	220,088
2026	109,110	106,356	(6,445)	1,725	684	211,430
2027-2031	596,010	454,618	(27,651)	8,410	3,640	1,035,027
2032-2036	603,615	319,769	(18,200)	9,045	2,982	917,211
2037-2041	635,355	178,164	(6,393)	10,480	1,539	819,145
2042-2046	407,290	64,476	-	4,645	164	476,575
2047-2051	134,010	12,802	-	-	-	146,812
	<u>\$ 2,925,385</u>	<u>\$ 1,606,875</u>	<u>\$ (87,074)</u>	<u>\$ 37,650</u>	<u>\$ 12,007</u>	<u>\$ 4,494,843</u>

*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, 2020, and May 1, 2021 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 32.94% and 33.00%, respectively. For Fiscal Year 2022 through Fiscal Year 2042, the estimated subsidy reflected in the table above is 33.00%.

The Authority classified variable rate bonds subject to remarketing as current, unless supported by liquidity arrangements such as lines of credit or standby bond purchase agreements that extend beyond the following fiscal year. As of June 30, 2021, the Authority has no variable rate debt outstanding. For fiscal 2020, the 2008-1 and 2008-A variable rate bonds, and the 2011-1 variable rate bonds were classified as a non-current debt obligation due to the supporting liquidity facilities expiring in July 2022 and June 2022, respectively. The 2011-2 window bonds had no supporting liquidity facility and therefore were classified as a current debt obligation in 2020.

Variable Rate Bonds

The 2008-1 bond bonds were supported by a standby purchase agreement with Barclays Bank PLC ("Barclays") which required Barclays to purchase bonds that were tendered and not remarketed. Under the terms of the Barclays standby bond purchase agreement, the Authority was required to pay Barclays in quarterly installments a facility fee in the amount of 29 basis points (or higher, under certain circumstances) of the commitment amount. In fiscal years 2021 and 2020, the Authority incurred fees in connection with the Barclays agreement in the amount of \$283,981 and \$478,784, respectively. The bonds were refunded in March 2021 and the standby purchase agreement was terminated.

The 2008-A bonds were supported by a standby bond purchase agreement with Barclays which required Barclays to purchase bonds that were tendered and not remarketed. Under the terms of the Barclays standby bond purchase agreement, the Authority was required to pay Barclays in quarterly installments a facility fee in the amount of 29 basis points (or higher, under certain circumstances) of the initial commitment. Fees incurred by the Authority in connection with the Barclays agreement totaled \$31,326 and \$53,021 for the years ended June 30, 2021 and June 30, 2020, respectively. The bonds were refunded in March 2021 and the standby purchase agreement was terminated.

UNIVERSITY OF MASSACHUSETTS BUILDING AUTHORITY
(A Component Unit of the University of Massachusetts)
Notes to Financial Statements
June 30, 2021 and 2020

The 2011-1 bonds were supported by a standby bond purchase agreement with Wells Fargo Bank, N.A. ("Wells") which required Wells to purchase bonds tendered and not remarketed in an amount not to exceed the principal on the bonds plus accrued interest up to 185 days at an annual interest rate not to exceed 12 percent. Under the agreement, the Authority was required to pay Wells in quarterly installments a facility fee in the amount of 32 basis points (or higher, under certain circumstances) of the initial commitment. Fees incurred by the Authority in connection with the Wells agreement totaled \$266,871 and \$421,706 for the years ended June 30, 2021 and 2020, respectively. The bonds were refunded in March 2021 and the standby purchase agreement was terminated.

Window Bonds

In fiscal year 2011, the Authority issued the 2011-2 bond in a variable rate window bond mode. As with the Authority's other variable rate bonds, the window bondholders could tender the bonds at any time. However, unlike the Authority's other variable rate bonds, where the bondholders will receive payment on any tendered bonds 7 days from the tender, window bondholders was not required to receive funds for the tender until after a 30-day remarketing period and an additional 180-day funding window period. Due to this 210 day funding period, the Authority was not required to obtain any type of liquidity support for the 2011-2 bonds. Window bondholders received an interest rate on the window bonds at a fixed spread over the Securities Industry and Financial Markets Association Municipal Swap Index™ ("SIFMA"). The initial spread to the SIFMA index was 9 basis points. The bonds were refunded in March 2021.

Bond Refundings

In fiscal year 2021, the Authority issued \$312.3 million of Refunding Revenue Bonds, Series 2021-1 and \$376.5 million of federally taxable Refunding Revenue Bonds, Series 2020-4 and 2021-2. The refunding bonds, refunded the 2008-1, 2008-A, 2011-1 and the 2011-2 bonds in the amount of \$358.4 million, the 2013-2 and 2014-1 bonds in the amount of \$26.8 million, and the 2013-1, 2013-2, 2014-1, 2014-3 and 2015-1 bonds in the amount of \$200.1 million.

In fiscal year 2020, the Authority issued \$319.35 million of Senior Series 2020-3 bonds, which advance refunded \$22.68 million of Boston bonds issued under the Massachusetts Health and Academic Facilities Authority (MHEFA) Series 2011 and \$4.09 million of the WCCC Series 2011 bonds. The Series 2020-3 bonds also refunded \$88.25 million of the Authority's 2013-1 bonds, \$22.44 million of the Authority's 2013-3 bonds, and \$143.54 million of the Authority's 2014-1 bonds. The Authority escrowed funds sufficient to provide for all future debt service payments on the refunded bonds until the bonds are called. These advanced refunded bonds are considered defeased and, accordingly, the liability for the bonds payable and the assets held to repay the debt are not recorded in the Authority's financial statements.

At June 30, 2021 and 2020, approximately \$619 and \$281 million of bonds outstanding from refunding activities is considered defeased, respectively.

Bond Premium and Issuance Expenses

In fiscal year 2021, the Authority received premiums at issuance totaling \$71.8 million. The Authority amortizes the premiums received as a reduction of interest expense over the life of the respective bond issue. In fiscal year 2020, the Authority received premiums at issuance totaling \$57.1 million.

In connection with the Authority's bond issues, the Authority incurred certain issuance costs associated with the bond offerings. In fiscal year 2021 issuance costs were \$3.99 million and in fiscal year 2020, these costs amounted to \$3.60 million and were expensed in accordance with the provisions of GASB Statement No. 65, *Items Previously Reported as Assets and Liabilities*.

UNIVERSITY OF MASSACHUSETTS BUILDING AUTHORITY
(A Component Unit of the University of Massachusetts)
Notes to Financial Statements
June 30, 2021 and 2020

Interest Rate Swaps

During fiscal year 2021, the Authority refunded all of its variable rate debt and terminated the associated interest rate swaps. In accordance with GASB 53, any previously recorded deferred outflows related to the terminated interest rate swaps have been reclassified as deferred outflows related to debt refundings and are being amortized as a component of interest expense over the life of the old debt or the life of the new debt, whichever is shorter.

The Authority's hedging derivative instruments at June 30, 2020 were as follows (\$ in thousands):

	Derivative Instruments - Liability June 30, 2020	Type of Hedge	Financial Statement Classification for Changes in Liability
Series 2008-1 Swap	\$ (32,068)	Cash Flow	Non-current liability
Series 2008-A Swap	(3,795)	Cash Flow	Non-current liability
Series 2006-1 Swap	<u>(37,118)</u>	Cash Flow	Non-current liability
Total	<u>\$ (72,981)</u>		

There was no significant credit, basis, termination risk nor were there any significant contingencies associated with the interest rate swaps outstanding as of June 30, 2020.

The fair value of the interest rate swaps outstanding as of June 30, 2020 were categorized as Level 2 in accordance with GASB 72.

The credit ratings for the Authority's counterparties at June 30, 2020 are as follows:

	Credit Ratings		
	Moody's	S&P	Fitch
UBS AG	Aa3	A+	AA-
Deutsche Bank AG	A3	BBB+	BBB
Citibank NA	Aa3	A+	A+

6) COMMERCIAL PAPER

The maximum aggregate principal amount of commercial paper which may be outstanding at one time is \$200,000,000. The Series 2013-A2 are secured by a standby liquidity facility agreement that expires on August 12, 2022. As of June 30, 2021, the outstanding commercial paper had a term of 91 days.

UNIVERSITY OF MASSACHUSETTS BUILDING AUTHORITY
(A Component Unit of the University of Massachusetts)
Notes to Financial Statements
June 30, 2021 and 2020

The following is a summary of commercial paper issues for the year ended June 30, 2021 (\$ in thousands):

	Balance June 30, 2020	Issues	Repayments	Balance June 30, 2021
CP series 2013-A2 taxable	\$ -	\$ 31,000	\$ -	\$ 31,000
	\$ -	\$ 31,000	\$ -	\$ 31,000

	Balance June 30, 2019	Issues	Repayments	Balance June 30, 2020
CP series 2013-A tax exempt	\$ 111,947	\$ 500	\$ 112,447	\$ -
CP series 2013-B tax exempt	20,000	10,000	30,000	-
	\$ 131,947	\$ 10,500	\$ 142,447	\$ -

The Authority incurred fees of \$676,185 and \$692,184 for fiscal years 2021 and 2020, respectively, associated with its commercial paper credit facility.

7) PLEDGED REVENUES

The Authority has pledged as security for its revenue bonds payments made by the University to the Authority to pay the debt service on its outstanding revenue bonds. The general purpose of such revenue bonds issued by the Authority is to finance the University's capital projects, and are payable through fiscal year 2051. Such pledges remain in place until the revenue bonds outstanding are defeased or paid. The total amount of pledged revenues and interest rate subsidies received in fiscal year 2021 was \$130.7 million. Total debt service (principal and interest) paid during fiscal year 2021 on outstanding revenue bonds was \$121.7 million, representing 93% of pledged revenues.

8) CONTRIBUTIONS FROM THE UNIVERSITY OF MASSACHUSETTS AND THE COMMONWEALTH OF MASSACHUSETTS

During fiscal year 2021, the Authority received capital contributions from the University in the amount of \$39.4 million to fund the New Education and Research Building at Worcester, the Newman Center purchase, Worcester Dining Commons renovation and various other projects at the Amherst campus, as well as the Mt. Ida project and the SDQD project at Boston. During fiscal year 2020, the Authority received capital contributions from the University in the amount of \$22.4 million to fund the LSL Lab renovation, Worcester Dining Commons renovation, McGuirk Stadium upgrades, Central Campus Core utility project and various other projects at the Amherst campus, as well as Perry Hall and Pasteur Hall projects at the Lowell campus.

During fiscal years 2021 and 2020, the Authority received grants totaling \$42.9 million and \$37.6 million from the Commonwealth, respectively. These grants were from DCAMM to fund projects at the Amherst, Boston, Dartmouth and Lowell campuses.

As per the Authority's policy, these grants are shown in the Statements of Revenues, Expenses and Changes in Net Position as a capital contribution.

UNIVERSITY OF MASSACHUSETTS BUILDING AUTHORITY
(A Component Unit of the University of Massachusetts)
Notes to Financial Statements
June 30, 2021 and 2020

9) GUARANTY OF THE COMMONWEALTH OF MASSACHUSETTS

Section 10 of the Enabling Act authorizes the Commonwealth, acting by and through the Trustees, to enter into contracts with the Authority for state financial assistance in the form of a guaranty by the Commonwealth of the payment of the principal and interest as they become due and payable up to a maximum of \$200,000,000 principal amount of outstanding bonds and notes of the Authority. The full faith and credit of the Commonwealth are pledged for the payment of the guaranty. As is generally the case with other full faith and credit obligations of the Commonwealth, funds with which to honor such guaranty would be provided by appropriation. The amount of bond obligation guaranteed by the Commonwealth was \$0 million and \$108.9 million at June 30, 2021 and June 30, 2020, respectively.

10) PUBLIC PRIVATE PARTNERSHIPS AND LEASES

a) *Public Private Partnerships*

On November 8, 2016, the Authority entered into an agreement whereby the Authority sub-leased land on the Boston campus to Provident Commonwealth Educational Resources, Inc. (PCER), a Massachusetts not-for-profit corporation, for a term of 40 years (2056). The land is ground-leased to the 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 Authority when the lease terminates. Commencing January 1, 2019, the annual rental amount payable to the Authority under the ground lease is \$1.025 million.

The Boston Project was financed with \$130.08 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 Authority, University nor Boston campus 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 the Dining Facility Sublease dated November 8, 2016 between PCER, as sub-lessor and the Authority, as sub-lessee, PCER leased the dining facility, located within the Boston Project, to the Authority and the 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 Authority. This lease only relates to the operations and maintenance of the dining facility. The annual rent payable is \$1.00.

On November 14, 2018, the Authority entered into an agreement whereby the Authority 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 (2064). The land is ground-leased to the Authority by the Commonwealth. PCER II engaged a contractor to construct a 1,210-bed student housing facility on the site (the "Dartmouth Project"). The Dartmouth Project reverts to the Authority when the lease terminates. Commencing on January 1, 2021, the annual rental amount payable to the Authority under the ground lease will be \$625,000, increasing by 3% every five years.

The Dartmouth Project was financed with \$132.19 million of revenue bonds issued on November 14, 2018 (Series 2018 Bonds) by the Massachusetts Development Finance Agency ("MassDevelopment") pursuant to a Loan and Trust Agreement between MassDevelopment and PCER II. The Authority, University nor Dartmouth campus 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 the Dining Facility sublease dated November 13, 2018 between PCER II, as sub-lessor and the Authority, as sub-lessee, PCER II leased the dining facility, located within the Dartmouth Project, to the Authority and the 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 Authority. This lease only relates to the operations and maintenance of the dining facility. The annual rent payable is \$1.00.

UNIVERSITY OF MASSACHUSETTS BUILDING AUTHORITY
(A Component Unit of the University of Massachusetts)
Notes to Financial Statements
June 30, 2021 and 2020

At June 30, 2021 and 2020, the Authority recorded a net receivable of \$1.45 million and \$1.03 million, respectively, related to its Boston and Dartmouth ground leases.

Management evaluated the applicability of relevant GASB guidance (including GASB Statement No. 14, *The Financial Reporting Entity*, GASB Statement No. 39, *Determining Whether Certain Organizations Are Component Units*, Statement No. 60, *Accounting for Financial Reporting for Service Concession Arrangements*, and GASB Statement No. 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 Authority.

b) Capital Leases

On October 27, 2009, the 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, ninety-nine periods.

The project was financed with \$74.38 million of revenue bonds. Rent is equal to the debt service on the outstanding bonds and payable semi-annually through fiscal year 2043.

On October 27, 2009, the Authority also entered into an agreement whereby the Authority sub-leased land, ground-leased to the 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 periods. At the time of signing, the Authority received payment of \$10,000 in full payment of rent due for the initial term of the sublease.

c) Other Leases

The Authority has executed long-term leases with the Commonwealth, acting by and through the Trustees, covering the land on which facilities owned by the 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 Authority notifies the University that it does not wish to renew. Other leases require the Authority to notify the University of its desire to renew. As of June 30, 2021, all leases with the Commonwealth were in good standing and any leases requiring action by the Authority during the year to facilitate their renewals were properly renewed.

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

On April 1, 2014, the 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 ended July 31, 2019. In fiscal 2019, the Authority exercised its option to extend the lease for a period of five years. The lease ends on July 31, 2024. Annual rent payments range from \$297 thousand to \$320 thousand. The Authority subleases the space to the University to be used as classroom space for its Springfield satellite campus.

On July 17, 2014, the 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 \$2.10 million to \$2.55 million. The Authority subleases office space at One Beacon Street to the University.

UNIVERSITY OF MASSACHUSETTS BUILDING AUTHORITY
(A Component Unit of the University of Massachusetts)
Notes to Financial Statements
June 30, 2021 and 2020

Future minimum lease receivables and payments for all leasing activity are as follows (\$ in thousands):

Fiscal Year	Lessor (minimum lease payments to receive)					Lessee (minimum lease payments to pay)		
	Direct Financing					Operating Leases		
	Lease	Operating Leases				Operating Leases		
Ended	EMKI	Boston PPP	Dartmouth PPP	Other	Totals	Mass Mutual	One Beacon	Totals
2022	\$ 5,072	\$ 1,025	\$ 625	\$ 901	\$ 7,623	\$ 321	\$ 1,878	\$ 2,199
2023	5,073	1,025	625	912	7,635	321	2,581	2,902
2024	2,665	1,025	625	872	5,187	321	2,623	2,944
2025	5,002	1,025	625	641	7,293	27	2,611	2,638
2026	5,160	1,025	634	624	7,443	-	2,388	2,388
2027-2031	25,412	5,125	3,228	3,012	36,777	-	11,267	11,267
2032-2036	25,918	5,125	3,325	-	34,368	-	-	-
2037-2041	21,470	5,125	3,425	-	30,020	-	-	-
2042-2046	5,923	5,125	3,528	-	14,576	-	-	-
2047-2051	-	5,125	3,634	-	8,759	-	-	-
2052-2056	-	5,125	3,743	-	8,868	-	-	-
2057-2061	-	342	3,855	-	4,197	-	-	-
2062-2066	-	-	1,848	-	1,848	-	-	-
	101,695	\$ 36,217	\$ 29,720	\$ 6,962	\$ 174,594	\$ 990	\$ 23,348	\$ 24,338
Less amounts representing interest:	(28,256)							
Net Investment in Direct Financing Lease	\$ 73,439							

For the years ended June 30, 2021 and 2020, the Authority recognized \$2.4 million and \$2.5 million, respectively, of interest income related to its EMKI direct financing lease.

For the years ended June 30, 2021 and 2020, the Authority recognized \$2.98 million and \$2.40 million, respectively, of rental income related to its lessor operating leases, which is included in income from contracts for financial assistance, management and services in the accompanying financial statements.

For the years ended June 30, 2021 and 2020, the Authority recognized \$2.70 million and \$2.35 million, respectively, of rental expense related to its lessee operating leases, which is included in facility and operating costs in the accompanying financial statements.

COMMITMENTS AND CONTINGENCIES

On June 28, 2019, the Authority entered into an agreement to lease property located at 200 Mount Vernon Street in Dorchester, Massachusetts to Bayside Property Owner, LLC ("Bayside"), a Delaware limited liability company. The developer plans to develop a mixed-use (office, residential, retail space, and academic/lab) opportunity at the site. Bayside deposited \$7.0 million into an escrow account on July 2, 2019. In June 2020, Bayside deposited an additional \$1.0 million into an escrow account in order to extend the agreement. In December of 2020, Bayside deposited an additional \$ 1.0 million to extend the agreement. In June of 2021 Bayside deposited an additional \$1.0 million to extend the agreement. There is \$10 million in escrow at this time. These funds will be applied to the initial fixed rent payment at closing. Under the terms of the agreement, the developer, subject to certain contingencies, may enter into a 99-year ground lease for an upfront payment of up to \$235 million, with a minimum lease price of \$192 million. The developer can extend the term of the agreement up to five consecutive periods of six months each. Additionally, the Authority has the ability to terminate the agreement at any time subject to the terms of the Agreement to Lease.

UNIVERSITY OF MASSACHUSETTS BUILDING AUTHORITY
(A Component Unit of the University of Massachusetts)
Notes to Financial Statements
June 30, 2021 and 2020

The Authority has outstanding purchase commitments with contractors for the construction of certain facilities as of June 30, 2021 and 2020 of \$162.8 million and \$100.0 million, respectively.

As of June 30, 2021 and 2020, the Authority had a working capital deficiency of \$95.2 million and \$153.2 million, respectively. However, as stated in the various contracts between the Authority and the University, the University is required to provide necessary funding to the Authority to meet its obligations through June 30, 2021 and beyond.

From time to time, the Authority is involved in routine litigation that arises in the ordinary course of business. There are no significant legal proceedings to which the Authority is a party for which management believes the ultimate outcome would have a material adverse effect on the Authority's financial position.

11) RELATED PARTY TRANSACTIONS

Related party transactions not previously disclosed are:

The following table details the amounts due to the various campuses of the University at June 30, which were recorded as part of accounts payable and other liabilities in the statements of net position (\$ in thousands):

Campus	<u>2021</u>	<u>2020</u>
Amherst Campus	\$ 142	\$ 456
Dartmouth Campus	58	194
Lowell Campus	-	317
Worcester Campus	15,380	3,596
Total	<u>\$ 15,580</u>	<u>\$ 4,563</u>

The Authority has issued debt, the proceeds of which were loaned to the Worcester City Campus Corporation ("WCCC") for the purpose of University capital improvements. The current and non-current balance of the outstanding WCCC loan receivable amounted to \$11.9 million and \$199.2 million as of June 30, 2021 and \$11.2 million and \$203.5 million as of June 30, 2020. In fiscal year 2020, the Authority has issued debt, the proceeds of which were loaned to the University for the purpose of University capital improvements. The current and non-current balance of the outstanding University loan receivable amounted to \$0 and \$23.7 million as of June 30, 2021 and 2020.

In May 2016, the Authority entered into an agreement with the University to loan \$3.7 million to the Authority for a term of fourteen years for the purposes of lease improvements. The current and non-current balance of the outstanding loan payable amounted to \$0.4 million and \$3.3 million as of June 30, 2021 and \$0.06 million and \$3.6 million as of June 30, 2020.

12) SUBSEQUENT EVENT

Subsequent to the year ended June 30, 2021 and through December 1, 2021, the Authority borrowed \$36.0 million of taxable and \$30.7 million of tax-exempt commercial paper with the interest rates ranging from .07% to .13% and maturity between January and March 2022, to fund construction projects at the Boston, Dartmouth, and Worcester campuses.

For purposes of determining the effects of subsequent events on these financial statements, management has evaluated events subsequent to June 30, 2021 and through December 10, 2021, the date on which the financial statements were available to be issued.



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

Independent Auditors' Report on Internal Control Over Financial Reporting and on Compliance and Other Matters Based on an Audit of Financial Statements Performed in Accordance With *Government Auditing Standards*

Members of the Board
University of Massachusetts Building Authority:

We have audited, in accordance with the 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, the financial statements of the University of Massachusetts Building Authority (the Authority), a component unit of the University of Massachusetts, which comprise the statement of net position as of June 30, 2021, and the related statements of revenues, expenses and changes in net position, and cash flows for the year then ended, and the related notes to the financial statements, and have issued our report thereon dated December 10, 2021.

Internal Control Over Financial Reporting

In planning and performing our audit of the financial statements, we considered the Authority's internal control over financial reporting (internal control) as a basis for designing audit procedures that are appropriate in the circumstances for the purpose of expressing our opinion on the financial statements, but not for the purpose of expressing an opinion on the effectiveness of the Authority's internal control. Accordingly, we do not express an opinion on the effectiveness of the Authority's internal control.

A deficiency in internal control exists when the design or operation of a control does not allow management or employees, in the normal course of performing their assigned functions, to prevent, or detect and correct, misstatements on a timely basis. A material weakness is a deficiency, or a combination of deficiencies, in internal control, such that there is a reasonable possibility that a material misstatement of the entity's financial statements will not be prevented, or detected and corrected on a timely basis. A significant deficiency is a deficiency, or a combination of deficiencies, in internal control that is less severe than a material weakness, yet important enough to merit attention by those charged with governance.

Our consideration of internal control was for the limited purpose described in the first paragraph of this section and was not designed to identify all deficiencies in internal control that might be material weaknesses or significant deficiencies. Given these limitations, during our audit we did not identify any deficiencies in internal control that we consider to be material weaknesses. However, material weaknesses may exist that have not been identified.

Compliance and Other Matters

As part of obtaining reasonable assurance about whether the Authority's financial statements are free from material misstatement, we performed tests of its compliance with certain provisions of laws, regulations, contracts, and grant agreements, noncompliance with which could have a direct and material effect on the financial statements. However, providing an opinion on compliance with those provisions was not an objective of our audit, and accordingly, we do not express such an opinion. The results of our tests disclosed no instances of noncompliance or other matters that are required to be reported under *Government Auditing Standards*.



Purpose of this Report

The purpose of this report is solely to describe the scope of our testing of internal control and compliance and the results of that testing, and not to provide an opinion on the effectiveness of the Authority's internal control or on compliance. This report is an integral part of an audit performed in accordance with Government Auditing Standards in considering the Authority's internal control and compliance. Accordingly, this communication is not suitable for any other purpose.

KPMG LLP

Boston, Massachusetts
December 10, 2021

[Intentionally Left Blank]

APPENDIX C
FINANCIAL STATEMENTS OF THE UNIVERSITY

[Intentionally Left Blank]

University of Massachusetts

Annual Financial Report 2021





Contents

University Administration.....	2
Letter from the President.....	3
Report of Independent Auditors.....	4
Management’s Discussion and Analysis (unaudited).....	6
Financial Statements.....	20
Statements of Net Position.....	20
Statements of Revenues, Expenses, and Changes in Net Position.....	21
Statements of Cash Flows.....	22
Component Unit Statements of Financial Position.....	24
Component Unit Statement of Activities.....	24
Notes to Financial Statements.....	25
Required Supplementary Information (unaudited).....	73
Schedule of the University’s Proportionate Share of the Net Pension Liability — Massachusetts State Employees’ Retirement System.....	73
Schedule of the University’s Contributions — Massachusetts State Employees’ Retirement System.....	73
Schedule of the University’s Proportionate Share of the Net Other Postemployment Benefits (OPEB) Liability — State Retirees’ Benefit Trust.....	74
Schedule of the University’s Contributions — State Retirees’ Benefit Trust.....	74

Some photos taken prior to COVID-19 masking and social distancing practices.

University Administration

As of November 2021

BOARD OF TRUSTEES

Robert J. Manning (Chairman)
Swampscott, MA

R. Norman Peters, JD (Vice Chair)
Paxton, MA

Mary L. Burns
Lowell, MA

Joshua P. Bates
(UMass Boston Student Trustee,
Non-voting)
Sandwich, MA

Barkha Bhandari
(UMass Amherst Student Trustee,
Non-voting)
Amherst, MA

Zachary S. Dyer
(UMass Chan Medical School Trustee,
Non-voting)
Worcester, MA

Robert Epstein
Boston, MA

Derek S. Houle
(UMass Lowell Student Trustee, Voting)
Bellingham, MA

Stephen R. Karam
Fall River, MA

Richard M. Kelleher
Duxbury, MA

Narcisse M. Kunda
(UMass Dartmouth Student Trustee,
Voting)
Marlborough, MA

Robert Lewis, Jr.
Boston, MA

Michael V. O'Brien
Southborough, MA

Noreen C. Okawara, MD
Lowell, MA

Kerri E. Osterhaus-Houle, MD
Hudson, MA

Imari K. Paris Jeffries, Med, MA
Boston, MA

James A. Peyser
Milton, MA

Julie M. Ramos Gagliardi
Somerset, MA

Elizabeth D. Scheibel, JD
South Hadley, MA

Steven A. Tolman
Boston, MA

Victor Woolridge
Springfield, MA

Charles F. Wu, MBA
Newton, MA

OFFICERS OF THE UNIVERSITY

Martin T. Meehan, JD
President

Kumble R. Subbaswamy, PhD
Chancellor, UMass Amherst

Marcelo Suárez-Orozco, PhD
Chancellor, UMass Boston

Mark A. Fuller, PhD
Chancellor, UMass Dartmouth

Jacqueline F. Moloney, EdD
Chancellor, UMass Lowell

Michael F. Collins, MD
Chancellor, UMass Chan Medical School
and Senior Vice President for Health
Sciences

James R. Julian, JD
Executive Vice President and Chief
Operating Officer

Katherine S. Newman, PhD
System Chancellor for Academic
Programs

Lisa A. Calise
Senior Vice President for Administration
and Finance & Treasurer

Zunilka M. Barrett
Secretary to the Board of Trustees



Letter from the President

Dear Friends,

I am pleased to present the University of Massachusetts annual financial report for fiscal year 2021.

Despite the many daunting and complex challenges of this past year, the University of Massachusetts demonstrated a spirit of innovation and resilience, and advancing our mission of providing high-quality education, research and public service.

The work of recovery has begun and we are back to near-normal operations on all of our campuses with the vast majority of our 75,000 students returning to in-person classes, most employees returning to work, and all participating in the local economies of our host communities. Thanks to UMass faculty, students and staff who are deeply committed to teaching, learning and working, the University celebrated the graduation of nearly 19,000 students last spring.

We leveraged our Enterprise Risk Management program to coordinate our COVID-19 response and mitigation activities across the UMass system, facilitated access to testing and personal protective equipment, and shared near real-time information on pandemic-related updates and requirements on higher education. We also achieved near 100 percent compliance with our student, faculty, and staff vaccination requirements.

Despite the significant impacts of COVID-19 on UMass, and on the higher education sector around the country, major independent ratings agencies S&P Global, Moody's and Fitch all reaffirmed their bond ratings of the University. During FY21, all three ratings agencies cited the University's strong fiscal oversight and management, steady enrollment, positive operating performance, growth in financial resources and our signature role as the state's public research university in their positive assessments.

UMass continued to demonstrate its excellence and impact.

- All four undergraduate campuses were again ranked as National Universities by *U.S. News & World Report*.
- Our research enterprise grew to record-breaking heights, with \$687 million in research activity in our latest research report.
- Our economic contribution to Massachusetts reached \$7.5 billion, including serving as the state's third largest employer.

In addition to a tuition freeze for all in-state undergraduate and graduate students at UMass Amherst, Boston, Dartmouth and Lowell in the 2021–2022 academic year, the University increased its institutionally funded financial aid to a record high of \$352 million in FY21. These achievements were made possible, in part, by system-wide efficiency and effectiveness initiatives that have saved the University \$18.5 million over the last year, and nearly \$100 million over the last decade.

Thanks to skilled financial management, the guidance of our trustees, the outstanding leadership of our chancellors, and the numerous contributions UMass campuses made throughout the past year, I am confident that the revolutionary spirit that has defined the University of Massachusetts for generations is stronger than ever.

UMass has not only survived recent challenges, it has answered the call.

Martin T. Meehan
President

Report of Independent Auditors



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 years ended June 30, 2021 and 2020, and the related notes to the financial statements, which collectively comprise the University's basic financial statements for the years 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 audits. We conducted our audits 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, 2021 and 2020, and the respective changes in financial position



and, where applicable, cash flows thereof for the years then ended in accordance with U.S. generally accepted accounting principles.

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, 2021 and 2020, the changes in its financial position, or where applicable, its cash flows for the years then ended in conformity with U.S. generally accepted accounting principles. Our opinion is not modified with respect to this matter.

Required Supplementary Information

U.S. generally accepted accounting principles require that the management's discussion and analysis and required supplementary information, as listed in the table of contents (collectively referred to as RSI) 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 RSI 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 15, 2021 on our consideration of the University's internal control over financial reporting and on our tests of its compliance with certain provisions of laws, regulations, contracts, and grant agreements and other matters. The purpose of that report is solely to describe the scope of our testing of internal control over financial reporting and compliance and the results of that testing, and not to provide an opinion on the effectiveness of the University's internal control over financial reporting or on compliance. That report is an integral part of an audit performed in accordance with *Government Auditing Standards* in considering the University's internal control over financial reporting and compliance.

KPMG LLP

Boston, Massachusetts
December 15, 2021

Management's Discussion and Analysis (unaudited)

June 30, 2021

Introduction

This Management's Discussion and Analysis (MD&A) 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, 2021 and 2020, 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 research in gene-silencing to research in critical areas such 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, most innovative universities in the world.

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 26th among the nation's top public schools in the 2022 *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 136 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, which is part of UMass Dartmouth and 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 February 2021 Massachusetts first-time bar passage rate was 75%, the fifth highest passage rate of the Massachusetts law schools.

UMass Lowell is ranked 88th among the nation's top public schools within the 2022 U.S. *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 founded in 1962 and situated in Worcester, is the Commonwealth's only public medical school and the University's Nobel-prize winning health sciences education and research campus. In September of 2021, the Medical School received an endowment gift of \$175 million from The Morningside Foundation with annual distributions

from the fund to be used for unrestricted purposes by the Medical School. In recognition of this transformational gift, the Medical School has been named the UMass Chan Medical School (UMass Chan). UMass Chan's three graduate schools were also renamed in recognition of this gift: the T.H. Chan School of Medicine, the Morningside Graduate School of Biomedical Sciences, and the Tan Chingfen Graduate School of Nursing. Consistently ranked by *U.S. News & World Report* in the top 10 percent of medical schools in the U.S. for primary care training, UMass Chan has remained true to its founding mission while also becoming globally recognized in biomedical research. Unique among medical schools, UMass Chan is also home to Commonwealth Medicine, a health care consulting division that partners with states and the federal government in delivering health services to vulnerable populations; and MassBiologics, the only non-profit, FDA-licensed manufacturer of vaccines and biologics in the nation.

UMassOnline, the University of Massachusetts' nationally acclaimed online education consortium, which offered approximately 1,500 online and blended courses and had more than 25,000 students enrolled in over 311,000 course credits in academic year 2020–2021. 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*.

On September 2, 2021, the University announced the transfer of control of Brandman University to UMass to expand educational opportunities for adult learners who continue to experience an increased need for flexible, high-quality and affordable online education alternatives as they recover from the economic dislocation related to the COVID-19 pandemic. This agreement officially launched UMass Global, a nonprofit affiliate of UMass that will deliver expanded online educational opportunities to adult learners in Massachusetts, across the nation and around the globe through a strengthened technology platform and tailored student support services. In addition to providing new educational opportunities, UMass Global will also streamline efforts to build workforce development partnerships with local and national employers, community colleges, other educational partners, non-profits, government agencies, and the U.S. military.



Financial Management

Accountability Framework

The University has strengthened its long-term fiscal outlook by adopting a framework for financial accountability. The framework is based on four key tenets:

- **Oversight:** independent and objective assurance that analyzes data, processes, policies and controls
- **Internal Controls:** standard processes designed to provide reasonable assurance regarding the achievement of objectives
- **Transparency:** reliable, timely information that is accessible and understandable
- **Risk Management:** systematic approach to identifying, assessing and managing risks across the organization.

FIGURE 1 –UMass Financial Accountability Framework



Through the accountability framework, the University has made consistent improvement in its financial management in various areas. Some examples include:

- Developing and evaluating multi-year financial forecasts to guide policy and programmatic decisions;
- Implementing a quarterly close process to support accurate and complete reporting of financial results;
- Developing and evaluating quarterly projections to monitor performance and make resulting operational adjustments;
- Tracking student data in real time to quickly observe trends that may impact the bottom line;
- Implementing and tracking creative, high-impact cost containment strategies across the five campuses, including expanding the University's shared services initiative;
- Creating a reserve policy to mitigate unforeseen events, address deferred maintenance, advance University priorities, and maintain strong credit ratings; and

- Tracking several key financial ratios: operating margin, operating cash flow margin, debt service and financial leverage ratios, to evaluate University performance against peer institutions.

The University regularly tracks several key financial ratios, to evaluate performance in relation to historical trend and peers. The ratios are compiled to understand the impact of revenue and expense assumptions and decisions, to effectively communicate with key stakeholders, set goals and assist in decision making. The University added a new metric in 2020 to reflect our available cash and short-term investments available to support daily operations: operating liquidity.

Operating liquidity includes cash and cash equivalents, money market and other investments, fixed income investments, MMDT, the pooled investment Fund II and the University Short Term Pool (new in FY2021). The metric excludes the pooled investment Fund I, and cash and cash equivalents for blended component units.

The University targets an industry standard for operating liquidity of at least 90 days as a benchmark. Preserving operating liquidity is critical in times of uncertainty. The seasonality of the University's business model creates periods where cash inflows and outflows are mismatched. As a result, maintaining sufficient operating liquidity for at least the 90-day benchmark period is imperative.

Additional details for the various investment vehicles of the University are found in Note 4 of the accompanying financial statements.

COVID-19 Response

The University engaged all four quadrants of the accountability framework in FY2021 and FY2020 to ensure the University could evaluate real-world impacts, forecast potential impacts, and withstand the harsh financial reality the COVID-19 pandemic created. Activities included:

- Leveraging the recently-enhanced University system-wide Enterprise Risk Management program to coordinate COVID-19 response and mitigation activities across the University system, including actively tracking and sharing data, COVID-19 impacts, facilitating access to testing and personal protective equipment, and sharing near real-time information on COVID-19 updates and requirements placed on higher education; (*Risk Management, Transparency*)
- Conducting scenario-based planning to account for the various revenue and expense impacts related to the implementation of COVID-19 response and mitigation plans (*Oversight*);
- Adding a new metric, operating liquidity, to the suite of key financial ratios tracked regularly (*Oversight, Transparency*);

- Developing a cash-flow forecasting model, with flexibility to forecast based on varying scenarios (*Internal Controls, Oversight, Transparency*);
- Restructuring cash management planning, including executing a line of credit in May 2021 (*Internal Controls, Oversight, Transparency*);
- Increasing level of proactive resource demand management, contract re-negotiation and sourcing efforts to limit cost exposures to the campuses (*Risk Management, Oversight*);
- Achieving approximately \$34 million in cost benefits (January 2020 to June 2021) by leveraging campus partnerships for information technology and library services (*Oversight, Transparency*);
- Designing a hybrid return to work pilot program for the UMass President's Office (*Oversight, Transparency*); and
- With guidance from the Advisory Working Group on Financial Planning, developing a new dashboard using real-time information to provide campuses access to key financial information on academic programs and assist them in their planning (*Oversight, Transparency*).

Shared Services Initiatives

At a time of financial challenge for public higher education, the University must continuously push itself to find more efficient ways of doing business. In that spirit, in 2019 President Meehan called for the development and implementation of a shared services model of delivering administration and finance services to the campuses. The resulting plan, developed by a team of subject matter experts that included representatives from each campus, delineated the application of a shared services model for accounts payable and procurement, at an estimated annual savings of \$16.5 million. This effort also laid the foundation for the exploration of future efficiencies.

To implement this plan, the University formally kicked off its Unified Procurement Services Team (UPST) in January 2020, led by a new University Chief Procurement Officer. This team of professionals was tasked with providing high-quality services while driving transaction efficiency. The UPST supports the campuses in cost optimization through proactive commodity sourcing and contracting with innovative suppliers and partners that support the UPST in delivering on its "better, faster, and cheaper" mission. The team manages approximately \$1 billion in third-party spend annually and approximately 30,000 suppliers and partners. The UPST manages this through leveraging optimized technology, data-driven business intelligence, training, and enhanced operational processes.

Since its inception through June 2021, the UPST has achieved \$33.9 million in cost savings. This was achieved through more than 170 initiatives across all five campuses and the UMass President's Office. The resulting system benefits reached



two times the target savings of \$16.5 million and three times return on investment to date of \$10.6 million. The savings achieved to date are equivalent to an 8% increase in tuition and fees.

To continue better, faster, cheaper services, a robust pipeline of process improvement and cost savings projects has been developed. The UPST has identified over 50 new projects to optimize services over the coming 12 to 18 months which are expected to result in further savings, efficiencies, and process improvements for the University. Included in these projects is a system-wide effort to update procurement, travel and business expense policies and administrative standards to optimize and reflect current operations.

Based on the success of the UPST, the University began its second shared service initiative in FY2021 with a focus on payroll services. The University has created a roadmap, identified campus priorities, and drafted a preliminary design of future processes. To deliver on these initiatives the UMPO Employee Services Team (EST) was established in October 2021, and a system-wide payroll director was hired. The EST will be working in FY2022 to improve delivery of system-wide employee services including payroll services, HR application management, and customer service.

Using the Annual Financial Report

The University's financial statements are prepared in accordance with U.S. generally accepted accounting principles as prescribed by the Government Accounting Standards Board (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, 2021 and 2020, as well as certain required supplementary information. 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 in or erosion of an institution's financial health when considered together with non-financial factors such as enrollment levels and the condition of facilities.

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, 2021 and 2020, respectively.

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 include appropriations, capital grants and contracts, gifts, investment income, and non-operating federal grants (such as Pell grants and Higher Education Emergency Relief Fund 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 capital assets is reflected in the financial statements as depreciation expense, which amortizes the cost of a capital asset over its expected useful life. Depreciation expense is considered an operating expense.

Statements of Cash Flows present cash receipts and payments of the University. The purpose of these statements is to present the sources of cash coming into the University, how that cash was expended, and the change in the total cash balance during the year.

Notes to the Financial Statements present additional information to support the financial statements. Their purpose is to clarify and expand on the information in the financial statements.

Required Supplementary Information (RSI) presents additional information that differs from the basic financial statements in that the auditor applies certain limited procedures in reviewing the information. In this report, RSI includes schedules of the University's proportionate share of the Massachusetts State Employees' Retirement System (MSERS) pension liability and other postemployment benefits (OPEB) liability, contributions to the MSERS pension and OPEB plans and related ratios, and this MD&A.

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), the University of Massachusetts Medical School Foundation, and the University of Massachusetts Amherst Foundation. The individual financial statements of the Building Authority can be obtained by contacting the Building Authority directly: www.umassba.net.

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. (UMF), and the University of Massachusetts Dartmouth Foundation, Inc. (UMDF). 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. The individual financial statements of each foundation can be obtained by contacting the foundations directly: www.umassfoundation.org 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 investments held at UMF on behalf of the University at June 30, 2021, 2020 and 2019 were \$1.1 billion, \$923.7 million and \$738.7 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 investments of UMDF at June 30, 2021, 2020 and 2019 were \$76.1 million, \$57.8 million and \$60.3 million, respectively, of which the majority is invested with UMF.

Financial Highlights

In March 2020, the World Health Organization declared a pandemic as a result of the novel coronavirus (COVID-19). As cases began to increase in the country and in Massachusetts, the University suspended in-person education and other campus-based activities and provided refunds to students for a portion of their residence and dining fees during FY2020. The University took significant budget actions across all campuses to address the resulting loss of revenue. These actions included salary freezes, furloughs, and targeted operating and personnel reductions as well as multiple non-personnel strategies including halting or delaying capital projects. Due to the ongoing pandemic, campus operations in FY2021 continued predominantly online and classes were held remotely. Some campus operations resumed in a limited fashion during the second half of FY2021, in accordance with CDC and Massachusetts guidelines.

The University was awarded \$255.6 million

of funding under the Coronavirus Aid, Relief, and Economic Security (CARES) Act, the Coronavirus Response and Relief Supplemental Appropriations Act (CRRSAA) and the American Rescue Plan of 2021 (ARPA), collectively provided under the Higher Education Emergency Relief Fund (HEERF) in three tranches over FY2020 and FY2021. An additional \$3.0 million was awarded under the Governor's Emergency Education Relief Funds for use in FY2021. The total funding is split into awards specifically for students and others specifically for use by the University to cover costs related to significant changes to the delivery of instruction due to the coronavirus, partial recovery of lost revenue, and can also be used to provide additional aid to students. The University distributed \$38.8 million and \$14.7 million in emergency aid to students in FY2021 and FY2020, respectively, via the student awards. Additionally, \$49.6 million and \$13.8 million was utilized to cover costs related to significant changes to the delivery of instruction due to the coronavirus, partial recovery of lost revenue and to provide additional aid to students in FY2021 and FY2020, respectively. The remaining unspent funds are expected to be used and corresponding revenue recognized in FY2022.

Selected financial highlights for the fiscal year ended June 30, 2021 include:

The University's loss before other revenues, expenses, gains, and losses was (\$47.0 million) for FY2021. Postemployment benefit expenses related to 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) contributed significantly to this



loss. Excluding the impact of these GASB standards on the postemployment expenses, the University's income before other revenues, expenses, gains, and losses was a positive \$45.5 million.

From FY2020 to FY2021, the University's operating revenues decreased by \$123.1 million, largely due to the reduction in auxiliary services provided during FY2021. Operating expenses decreased by \$58.9 million primarily driven by reductions in spending due to pandemic restrictions. Non-operating revenues increased \$105.1 million primarily attributed to strong investment performance and funding received under HEERF. As a result, the University's net position increased \$156.3 million from \$2.4 billion in FY 2020 to \$2.6 billion in FY2021.

Net Position

Condensed schedules of net position for the University at June 30, 2021, 2020, and 2019, respectively, are presented in **Figure 2**.

Assets totaled \$7.9 billion, \$7.6 billion, and \$7.4 billion at June 30, 2021, 2020, and 2019, respectively. These balances are primarily driven by capital assets net of accumulated depreciation, which remain stable in the three years presented.

Liabilities totaled \$5.5 billion, \$5.4 billion and \$5.0 billion at June 30, 2021, 2020, and 2019, respectively. The majority of the University's long-term liabilities in all three years are long-term debt and pension and OPEB liabilities.

Net position represents the difference between total assets and total liabilities, and in addition to capital, includes cash, liquid investments, as well as non-cash items and illiquid investments. Total net position was \$2.6 billion, \$2.4 billion and \$2.5 billion at June 30, 2021, 2020 and 2019, respectively. The largest component of net assets for the University remains the net investment in capital assets which held steady at \$2.3-\$2.4 billion for the three years. Total investments of \$1.8 billion, \$1.4 billion and \$1.4 billion at June 30, 2021, 2020 and 2019, respectively, are the next largest component of net assets.

Unrestricted net position was positive in FY2021 due to operating cost reductions, an increase in investment return as described in the Endowment Return section of this MD&A, and increased non-operating revenues from pandemic related federal funding received under HEERF. Both FY2020 and FY2019 had negative unrestricted net position, due to large employee postemployment benefits (pension and OPEB) liabilities totaling \$1.3 billion, and more modest investment returns than FY2021.

FIGURE 2 – Condensed Schedule of Net Position

As of June 30, 2021, 2020, and 2019 (\$ in thousands)

Net Position	2021	2020	2019
Assets			
Current assets	\$ 1,164,660	\$ 1,156,836	\$ 921,582
Noncurrent assets – Capital assets, net	5,243,969	5,206,569	5,164,200
Noncurrent assets – All other noncurrent assets	1,534,138	1,225,544	1,281,662
Total assets	7,942,767	7,588,949	7,367,444
Deferred Outflows of Resources	551,553	531,271	357,541
Liabilities			
Current liabilities	732,064	680,069	799,310
Noncurrent liabilities	4,761,737	4,750,458	4,237,383
Total liabilities	5,493,801	5,430,527	5,036,693
Deferred Inflows of Resources	411,451	256,926	215,910
Net Position			
Net investment in capital assets	2,306,226	2,376,333	2,343,872
Restricted – Nonexpendable	22,378	22,252	28,617
Restricted – Expendable	232,756	223,803	206,023
Unrestricted	27,708	(189,621)	(106,130)
Total net position	\$ 2,589,068	\$ 2,432,767	\$ 2,472,382

During FY2020, the University liquidated investments to ensure continued liquidity in the face of the uncertainty of the COVID19 pandemic. As of June 30, 2021, the University's endowment, held at UMF, grew by \$320.3 million to \$1.1 billion, generating a historic fiscal year return of 37.1 percent.

In FY2021, the University rebalanced its portfolio and returned investments to longer term time horizons. **Figure 3** shows the liquidation and rebalancing of the University's investments from FY2019 to FY2021.

FIGURE 3 – Investment Liquidation and Rebalancing

As of June 30, 2021, 2020, and 2019 (\$ in thousands)

Investment	2021	%	2020	%	2019	%
Short-term Investments	\$ 639,162	35%	\$ 620,771	45%	\$ 489,907	36%
Long-term Investments	1,163,888	65%	748,689	55%	869,663	64%
Total Investments	\$ 1,803,050	100%	\$ 1,369,460	100%	\$ 1,359,570	100%

Revenues, Expenses, and Changes in Net Position

Condensed schedules of revenues, expenses, and changes in net position of the University for the three years ended June 30, 2021, 2020, and 2019, are presented in **Figure 4**.

FIGURE 4 – Condensed Schedules of Revenues, Expenses, and Changes in Net Position

As of June 30, 2021, 2020, and 2019 (\$ in thousands)

Revenue and Expense	2021	2020	2019
Operating Revenues			
Tuition and fees, net of scholarships	\$ 930,613	\$ 917,876	\$ 894,904
Grants and contracts	667,149	581,850	593,086
Auxiliary enterprises	163,812	378,314	441,795
Other operating revenues	541,367	547,990	523,569
Total operating revenues	2,302,941	2,426,030	2,453,354
Operating Expenses	3,378,579	3,437,442	3,301,311
Operating Loss	(1,075,638)	(1,011,412)	(847,957)
Nonoperating Revenues (Expenses)			
Federal appropriations	5,953	6,774	7,004
State appropriations	845,481	810,518	780,221
Interest expense	(105,469)	(109,186)	(116,217)
Nonoperating federal grants	173,592	115,601	84,454
Other nonoperating income	109,046	99,753	140,047
Total nonoperating revenues (expenses)	1,028,603	923,460	895,509
Income (Loss) Before Other Revenues, Expenses, Gains and Losses	(47,035)	(87,952)	47,552
Other Revenues, Expenses, Gains and Losses			
Capital appropriations, grants and other sources	71,120	59,041	38,665
Other additions (deductions)	132,216	(10,704)	(2,719)
Total other revenues, expenses, gains, and losses	203,336	48,337	35,946
Total Increase (Decrease) in Net Position	156,301	(39,615)	83,498
Net Position			
Net position at the beginning of the year	2,432,767	2,472,382	2,388,884
Net position at the end of the year	\$ 2,589,068	\$ 2,432,767	\$ 2,472,382

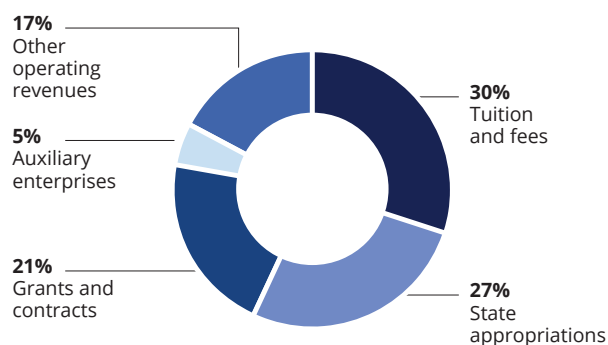
Operating Revenues and Expenses

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 to be operating revenue for management's planning and analysis purposes. The University's operating revenue, including state appropriations, remained essentially flat in FY2019 and FY2020 at \$3.2 billion, and decreased in FY2021 to \$3.1 billion.

As noted in **Figure 5**, over 50% of the University's operating revenues were from tuition and fees and state appropriations. Auxiliary enterprises revenue includes housing and dining revenue. When combined with tuition revenue and grants and contracts revenue, 56% of the University's operating revenue comes from these academic core activities.

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 UMass Chan 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. Grants and contracts revenue includes federal, state and privately sponsored research and other programs.

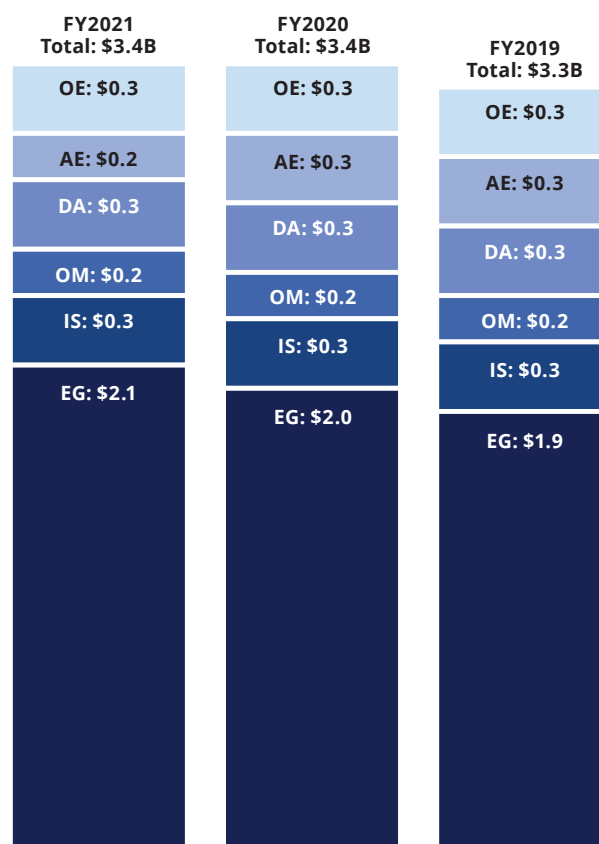
FIGURE 5 – Fiscal Year 2021 Operating Revenues (including State Appropriations)



In FY2021 and FY2020, operating expenses, including depreciation and amortization, totaled \$3.4 billion, as compared to \$3.3 billion in FY2019. Of the FY2021 total, \$2.1 billion or 62% was used to support the academic core activities of the University, including \$552.5 million in research. The education and general portion of the three-year operating expenses shown in **Figure 6** represents expenses in the following functional categories: instruction, research, public service, academic support, student services and scholarships and fellowships. Public service activities expenses, included in education and general, include payments made to the Commonwealth pursuant to requirements of legislation enacted by the Commonwealth.

FIGURE 6 – Three Year Operating Expenses by Function

(\$ in billions)



Key

- EG = Education and general
- IS = Institutional support
- OM = Operation and maintenance of plant
- DA = Depreciation and amortization
- AE = Auxiliary enterprises
- OE = Other expenditures

State Appropriations

In FY2021, state appropriations represented approximately 25% of operating and net 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, 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 **Figure 7**.

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 appropriations. These amounts are not included in state appropriations.

The University's state appropriations including fringe benefits increased in FY2021 by \$35.0 million from FY2020, primarily due to an increase in reimbursements for costs related to the new Paid Family Medical Leave (PFML) law, in addition to increases in collective bargaining determined by the Commonwealth. The University's state appropriations including fringe benefits increased in FY2020 by \$30.3 million from FY2019 primarily due to increased collective bargaining costs determined by the Commonwealth, as well as an increase in the Commonwealth's fringe benefit rate.

Figure 7 details the state appropriations for the fiscal years ended June 30, 2021, 2020, and 2019.



State Capital Appropriations

The University faces a financial challenge to maintain and upgrade its capital assets including its infrastructure, buildings and grounds. To have a successful capital program, the University must rely on a combination of revenue sources to fund its capital investments. In FY2021, FY2020 and FY2019, the capital support provided to the University through appropriations and grants from the Commonwealth was \$62.6 million, \$51.5 million and \$25.5 million, respectively. Beginning in FY2019, the Commonwealth established a 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.

FIGURE 7 – State Appropriations

For the years ended June 30, 2021, 2020, and 2019 (\$ in thousands)

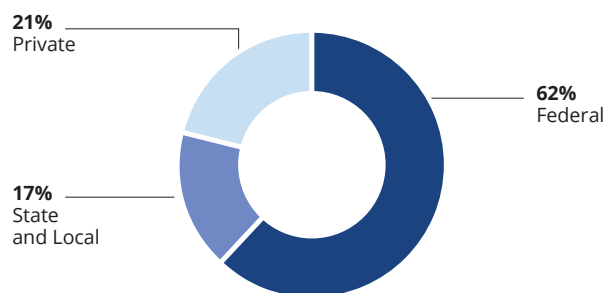
Appropriation	2021	2020	2019
State appropriations	\$ 568,350	\$ 566,941	\$ 542,095
Plus: fringe benefits	277,131	243,577	238,126
Commonwealth support	\$ 845,481	\$ 810,518	\$ 780,221

Grant and Contract Revenue

Among Massachusetts colleges and universities, the University ranks third in research and development expenditures, behind only the Massachusetts Institute of Technology (MIT) and Harvard 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.

Collectively, UMass Amherst and UMass Chan account for approximately three-quarters of the University's total grants and contracts revenue of \$667.1 million, \$581.9 million and \$593.1 million at June 30, 2021, 2020 and 2019. **Figure 8** details the University's grant and contract revenues by source for the year ended June 30, 2021.

FIGURE 8 – Grant and Contract Revenue FY2021



Tuition and Fees

Due to affordability considerations and impacts of the COVID-19 pandemic, in-state undergraduate tuition was frozen for the academic years 2020–2021 and 2021–2022. This results in \$43.4 million in recurring revenue lost due to freezing tuition during the COVID period, \$29.1 million in academic year 2021–2022 and \$14.3 million in academic year 2020–2021. Prior to the COVID pandemic, tuition was increased for academic year 2019–2020 on average 2.5% over the prior year. Affordability continues to be a priority of the University and increases in fees are considered in conjunction with Commonwealth support on an annual basis.

Enrollment

As shown in **Figure 9**, total enrollment in the fall of 2020 was 66,070 FTE (75,431 headcount students), an increase of 0.1% over the previous year's enrollment of 66,010 FTE (75,065 headcount students). Enrollment in the fall of 2018 was 65,346 FTE (74,705 headcount students). The five-year enrollment growth of 3% from 2016–2020 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 of the education provided by the University of Massachusetts.

FIGURE 9 – Total Enrollment

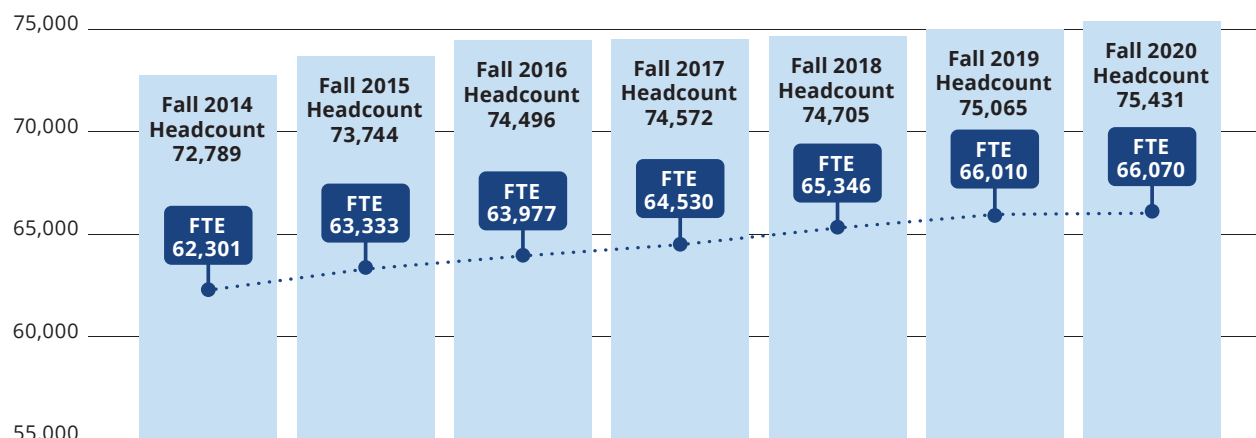
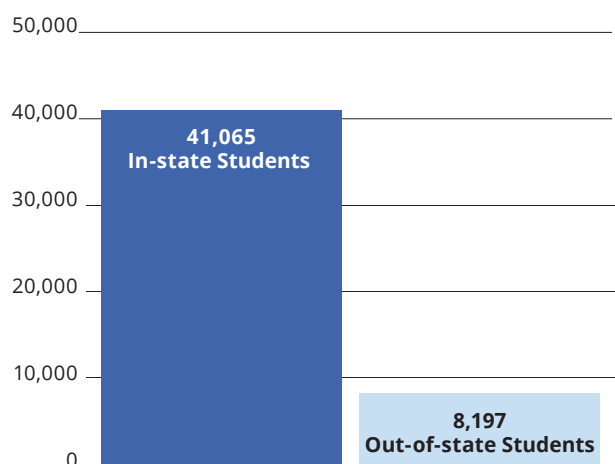


FIGURE 10 – Fall 2020 Undergraduate Enrollment by Type

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% of the University's total undergraduate enrollment in both fall 2020 and fall 2019, as shown in **Figure 10**.

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 campus online offerings that enable students, professionals, and lifelong learners to take courses anywhere, anytime. For FY2021, UMassOnline and the Continuing Education units at the five campuses collaboratively generated tuition revenue of \$145.3 million and supported 311.6 thousand course credits, an increase of 20.6% in revenue and an increase of 1.5% in course enrollments as compared to FY2020. In FY2020, UMassOnline generated tuition revenue of \$120.5 million and supported 306.9 thousand course credits, an increase of 3.8% in revenue compared to \$116.1 million and an increase of 15.1% in credits as compared to 266.6 thousand credits in FY2019.

Endowment Return

As of June 30, 2021, the endowment held at UMF grew by \$320.3 million to \$1.1 billion, generating a historic fiscal year return of 37.1 percent. Over the last decade, the endowment generated an annualized return of 8.2 percent, exceeding UMF's long-term return objective and reflecting the strategic growth of the portfolio's exposure to global equities and strong partnerships with high caliber investment managers. This ten-year return was produced with annual investment results that ranged from a low of -3.7 percent in FY2016 to 37.1

percent in FY2021, underscoring the importance of having a long-term focus.

In FY2020, the UMass endowment totaled \$922.0 million and generated a return of 3.3 percent. In FY2019, the UMass endowment totaled \$908.4 million and generated a return of 6.7 percent.

Long-Term Debt

Long-term debt is the University's largest liability at June 30, 2021, 2020 and 2019. The University had outstanding long-term debt of \$3.3 billion at June 30, 2021, \$3.2 billion at June 30, 2020 and \$3.0 billion at June 30, 2019. 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), Massachusetts Development Financing Authority (MDFA), and WCCC.

During fiscal year 2021, the University issued \$31.0 million in commercial paper to finance the New Education and Research Building at UMass Chan with an interest rate from .16% to .22%.

On October 28, 2020, the University issued \$329.9 million of federally taxable Project Revenue Bonds, Series 2020-4. On March 25, 2021, the University issued \$312.3 million of Project Revenue Bonds, Series 2021-1 and \$46.6 million of federally taxable Project Revenue Bonds, Series 2021-2. The 2021-1 bonds included a premium of \$71.8 million. These issuances allowed the University to terminate its interest rate swap agreements and increase liquidity by restructuring the timing of certain debt service payments.

Bond obligations guaranteed by the Commonwealth on bonds outstanding Series 2008-A and 2011-2 were \$0.0 million and \$108.9 million at June 30, 2021 and 2020, respectively. These bonds were refunded with bond series 2021-1 in March 2021.

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 relies 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 FY2021, all three ratings agencies re-affirmed the University's ratings, citing the University's flagship role in public higher education in Massachusetts, strong fiscal oversight, steady enrollment, positive operating performance, growth in financial resources and solid support from the Commonwealth.

Line of Credit

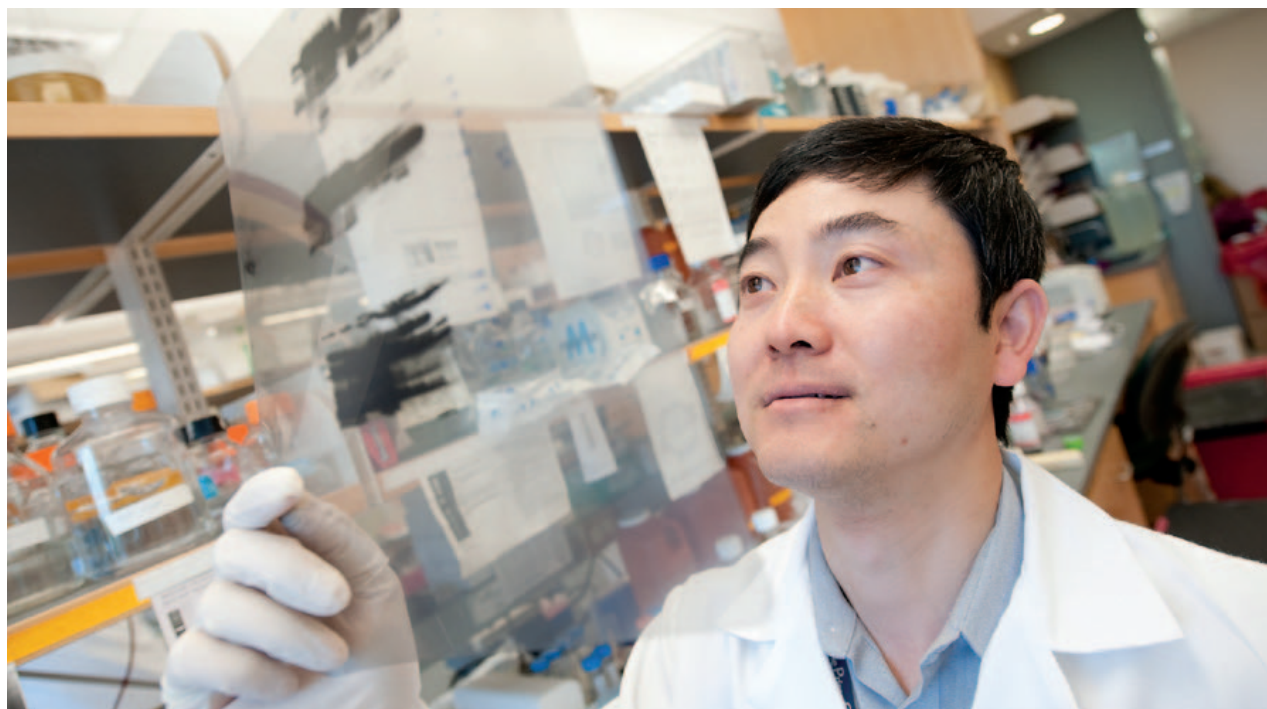
On November 10, 2020, the Governor signed into law a statutory change allowing the University and the Building Authority to borrow up to 8% of the University's total operating budget for the working capital needs of the University. Effective June 1, 2021, the University entered into line of credit agreements with Bank of America and State Street Bank with a maximum loan amount of \$75.0 million each, for a total maximum loan amount of \$150.0 million. The line of credit has a maturity date of May 10, 2022. As of June 30, 2021, the University had not drawn on the line of credit.

Limitations on Additional Indebtedness

The University may, without limit, issue additional indebtedness or request the Building Authority to issue additional indebtedness on behalf of the University so long as such indebtedness is payable from all available funds of the University. As noted in the Board of Trustee policy, each campus' debt service 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. During fiscal 2021, the University retired its remaining Commonwealth guaranteed debt.





Capital Plan

A majority of the capital spending during FY2021 and FY2020 related to continued investments in deferred maintenance. In September 2018, the University's Board approved an updated five-year capital plan for FY2019-FY2023 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 FY2019-FY2023 includes major projects that were previously approved by the Board in prior-year capital plans. The University's capital approval process provides for a multi-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.

Due to the COVID-19 pandemic, the capital plan was reassessed, and \$222 million of projects were put on hold in September 2020. These projects remained on hold in FY 2021.

Factors Impacting Future Periods

There are a number of issues of University-wide importance that directly impact the financial operations of the University. By far, the biggest factor that continued to impact the University's FY2021 result is the COVID-19 pandemic. Continuing into FY2022 the University continues to monitor

the pandemic's impact on enrollment and auxiliary services. The fall semester of FY2022 began with primarily in-person learning, and occupancy for most campuses is at 80% or higher.

Other 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 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's Office by email at generalacct_inquiry@umassp.edu.

Financial Statements

Statements of Net Position

For the years ended June 30, 2021 and 2020 (\$ in thousands). See accompanying notes to the financial statements.

Assets and liabilities	2021	2020
Assets		
Current assets		
Cash and cash equivalents	\$ 74,547	\$ 65,002
Cash held by state treasurer	22,242	21,474
Deposits with bond trustees	47,075	76,551
Accounts receivable, net	333,278	326,879
Short-term investments	639,162	620,771
Other current assets	48,356	46,159
Total current assets	1,164,660	1,156,836
Noncurrent assets		
Cash held by state treasurer	23,734	17,190
Deposits with bond trustees	186,336	282,379
Accounts receivable, net	44,317	50,389
Long-term investments	1,163,888	748,689
Other assets	115,863	126,897
Capital assets, net	5,243,969	5,206,569
Total noncurrent assets	6,778,107	6,432,113
Total assets	7,942,767	7,588,949
Deferred outflows of resources	551,553	531,271
Liabilities		
Current liabilities		
Accounts payable and accrued expenses	422,583	319,829
Unearned revenues and advances	102,126	96,275
Long-term debt, current portion	105,959	203,408
Commercial paper notes	31,000	-
Other current liabilities	70,396	60,557
Total current liabilities	732,064	680,069
Noncurrent liabilities		
Unearned revenues and advances	60,559	59,529
Long-term debt	3,122,716	2,992,770
Derivative instruments, interest rate swaps	-	72,981
Net pension liability	644,879	526,739
Net other postemployment benefits liability	829,808	992,991
Other long-term liabilities	103,775	105,448
Total noncurrent liabilities	4,761,737	4,750,458
Total liabilities	5,493,801	5,430,527
Deferred inflows of resources	411,451	256,926
Net position		
Net investment in capital assets	2,306,226	2,376,333
Restricted – Nonexpendable	22,378	22,252
Restricted – Expendable	232,756	223,803
Unrestricted	27,708	(189,621)
Total net position	\$ 2,589,068	\$ 2,432,767

Statements of Revenues, Expenses, and Changes in Net Position

For the years ended June 30, 2021 and 2020 (\$ in thousands). See accompanying notes to the financial statements.

Revenues and expenses	2021	2020
Operating revenues		
Tuition and fees (net of scholarship allowances of \$345,128 at June 30, 2021 and \$343,031 at June 30, 2020)	\$ 930,613	\$ 917,876
Grants and contracts	667,149	581,850
Sales and services, educational activities	30,253	31,248
Auxiliary enterprises	163,812	378,314
Other operating revenues		
Sales and services, independent operations	50,961	62,829
Sales and services, public service activities	334,567	337,709
Other	125,586	116,204
Total operating revenues	2,302,941	2,426,030
Operating expenses		
Educational and general		
Instruction	934,793	960,548
Research	552,472	485,759
Public service	90,363	84,248
Academic support	199,897	200,928
Student services	141,160	157,842
Institutional support	314,676	303,100
Operation and maintenance of capital assets	226,965	241,880
Depreciation and amortization	300,201	288,667
Scholarships and fellowships	85,500	65,469
Auxiliary enterprises	218,370	336,497
Other expenditures		
Independent operations	53,485	56,256
Public service activities	260,697	256,248
Total operating expenses	3,378,579	3,437,442
Operating loss	(1,075,638)	(1,011,412)
Nonoperating revenues (expenses)		
Federal appropriations	5,953	6,774
State appropriations	845,481	810,518
Gifts	41,262	41,996
Investment income, net	58,383	32,762
Unrealized gain (loss) on investments	(22,977)	(3,414)
Endowment return used for operations	31,965	28,113
Interest expense	(105,469)	(109,186)
Nonoperating federal grants	173,592	115,601
Other nonoperating income	413	296
Net nonoperating revenues	1,028,603	923,460
Loss before other revenues, expenses, gains, and losses	(47,035)	(87,952)
Other revenues, expenses, gains and losses		
Capital appropriations	62,592	51,525
Capital grants, contracts and gifts	8,528	7,516
Endowment return, net of amount used for operations	148,514	(2,917)
Other deductions	(16,298)	(7,787)
Total other revenues, expenses, gains, and losses	203,336	48,337
Total increase (decrease) in net position	156,301	(39,615)
Net position at beginning of year	2,432,767	2,472,382
Net position at end of year	\$ 2,589,068	\$ 2,432,767

Statements of Cash Flows

For the years ended June 30, 2021 and 2020 (\$ in thousands). See accompanying notes to the financial statements.

Cash flow	2021	2020
Cash flows from operating activities		
Tuition and fees	\$ 1,025,916	\$ 1,019,555
Grants and contracts	650,603	615,384
Payments to suppliers	(834,725)	(940,286)
Payments to employees	(1,595,504)	(1,615,385)
Payments for benefits	(465,580)	(496,826)
Payments for scholarships and fellowships	(89,267)	(90,488)
Loans issued to students and employees	(6,433)	(11,979)
Collections of loans to students and employees	15,094	15,904
Auxiliary enterprises	163,585	377,585
Sales and services, educational	30,543	30,911
Sales and services, independent operations	50,961	62,829
Sales and services, public service activities	339,788	352,748
Student related fiduciary activities inflows	8,702	13,122
Student related fiduciary activities outflows	(6,692)	(16,299)
Other receipts, net	126,966	56,239
Net cash used for operating activities	(586,043)	(626,986)
Cash flows from noncapital financing activities		
Federal appropriations	5,953	6,774
State appropriations	845,481	810,518
Grants, contracts and gifts for other than capital purposes	41,377	45,107
Nonoperating federal grants	173,592	115,601
Student organization transactions	818	(619)
Net cash provided by noncapital financing activities	1,067,221	977,381
Cash flows from capital and other financing activities		
Proceeds from debt issuances	721,153	663,061
Proceeds from premiums received	71,803	57,127
Proceeds from capital lease receipts	5,066	-
Bond issuance costs paid	(3,992)	(3,596)
Swap termination payments	(50,938)	-
Capital appropriations	62,592	51,525
Capital grants and contracts	8,413	4,405
Proceeds from sales of capital assets	2,668	-
Purchases of capital assets and construction	(322,341)	(341,247)
Principal paid on debt and leases	(708,067)	(549,788)
Interest paid on debt and leases	(153,367)	(132,468)
Net cash used for capital financing activities	(367,010)	(250,981)
Cash flows from investing activities		
Proceeds from sales and maturities of investments	1,048,212	1,652,557
Interest on investments	54,561	34,383
Purchases of investments	(1,325,603)	(1,641,650)
Net cash (used for) provided by investing activities	(222,830)	45,290
Net (decrease) increase in cash and cash equivalents	(108,662)	144,704
Cash and cash equivalents - beginning of the year	462,596	317,892
Cash and cash equivalents - end of the year	353,934	462,596

Cash flow	2021	2020
Reconciliation of operating loss to net cash used for operating activities		
Operating loss	\$ (1,075,638)	\$ (1,011,412)
Adjustments to reconcile loss to net cash used for operating activities:		
Depreciation and amortization expense	300,201	288,667
Changes in assets and liabilities:		
Accounts receivable, net	(5,393)	(36,117)
Other assets	12,659	9,954
Accounts payable and accrued expenses	85,044	(2,300)
Unearned revenues and advances	6,881	32,806
Other liabilities	8,166	(19,078)
Postemployment benefits liability, net	92,330	122,012
Fiduciary transactions	263	(780)
Changes in deferred outflows related to assets	622	2
Changes in deferred inflows related to future revenues	(11,178)	(10,740)
Net cash used for operating activities	(586,043)	(626,986)
Supplemental disclosure of noncash activities		
Assets acquired and included in accounts payable and other liabilities	49,478	29,669
Loss on disposals of capital assets	(12,083)	(9,467)
Donated assets	652	258



Component Unit Statements of Financial Position

As of June 30, 2021 and 2020 (\$ in thousands). See accompanying notes to the financial statements.

Component units	2021	2020
Assets		
Cash	\$ 733	\$ 807
Bequests receivable	5,407	3,155
Pledges receivable, net	24,292	26,854
Investments of the Foundations and held on behalf of the University	1,905,099	1,544,756
Prepaid expenses and other assets	3,718	3,374
Land, property, plant and equipment, net	15,634	16,057
Total assets	1,954,883	1,595,003
Liabilities and net assets		
Liabilities		
Accounts payable and accrued expenses	821	635
Deferred revenue	2,645	3,975
Obligations to beneficiaries of split-interest agreements	2,581	2,649
Assets held on behalf of others	1,108,178	948,085
Total liabilities	1,114,225	955,344
Net assets		
Without donor restrictions	46,521	38,417
With donor restrictions	794,137	601,242
Total net assets	840,658	639,659
Total liabilities and net assets	\$ 1,954,883	\$ 1,595,003

Component Unit Statement of Activities

For the years ended June 30, 2021 (with summarized financial information for the year ended June 30, 2020) (\$ in thousands).

Component units	Without donor restriction	With donor restriction	Total 2021	Total 2020
Support and revenue				
Gifts, bequests and grants	\$ 1,573	\$ 18,237	\$ 19,810	\$ 29,733
Other contributions	2,143	2,866	5,009	202,870
Total investment income, including gains – net of fees	179,082	195,508	374,590	16,864
Investment management fee	12,309	-	12,309	10,963
Other income	-	-	-	50
Net assets released from restrictions	24,919	(24,919)	-	-
Total support and revenue	220,026	191,692	411,718	260,480
Expenses				
Distributions to University	35,265	-	35,265	35,682
Program services	5,786	-	5,786	5,415
Fundraising support	7,094	-	7,094	8,005
Administrative and general	2,139	-	2,139	2,292
Total expenses	50,284	-	50,284	51,394
Excess of support and revenue over expenses	169,742	191,692	361,434	209,086
Less: Fiscal 2021 Activity related to assets held on behalf of University	(156,127)	-	(156,127)	(184,906)
Less: Fiscal 2021 Activity related to assets held on behalf of Edward M. Kennedy Institute	(3,965)	-	(3,965)	673
Transfers (from) to other funds	(1,203)	1,203	-	-
Change in value of split interest agreements	(343)	-	(343)	(550)
Change in net assets	8,104	192,895	200,999	24,303
Net assets, beginning of year	38,417	601,242	639,659	615,356
Net assets, end of year	\$ 46,521	\$ 794,137	\$ 840,658	\$ 639,659

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 of Trustees (Board of Trustees) 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 of Trustees.

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, Chan Medical School (formerly the Medical School), and the President's Office of the University, Worcester City Campus Corporation (WCCC), the University of Massachusetts Amherst Foundation (UMass Amherst Foundation), the University of Massachusetts Medical School Foundation (UMMSF) 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. The UMass Medical School Foundation was established in 1991 to support fundraising and philanthropic activities of UMass Chan. 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 University of Massachusetts Lowell Applied Research Corporation (UMLARC), a legally separate 501(c)(3) non-profit corporation, was formed in the Commonwealth of Massachusetts on June 24, 2020. The purpose of UMLARC is to promote efficient and effective applied research and development by entering into grants, contracts, and other contractual mechanisms for services, in conjunction with the University of Massachusetts Lowell and its research partners. UMLARC will also provide analytic and technology solutions to government and non-government entities to extend the impact of the University's technology enterprise. There is no financial activity for the UMLARC included within the financial statements as of June 30, 2021 or 2020. Because the memorandum of understanding between UMLARC and UMass Lowell is not yet complete, the determination of discrete or blended component unit is pending.

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.

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 in part by funds received from 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 enterprises and other operating revenues. Other operating revenues include sales and services provided by UMass Chan 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 UMass Chan 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, CARES Act revenue, 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 applies restricted net assets first when an expense or outlay is incurred for purposes for which both restricted and unrestricted net assets are available.

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. Endowment pledges are not recorded until paid because the inherent time restriction has not been met until the funds are able to be invested in perpetuity.

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 the 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. 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.

Massachusetts Municipal Depository Trust

The University is authorized to invest in the Massachusetts Municipal Depository Trust (MMDT), a pooled money market-like fund, established under Massachusetts 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 University 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 accounts receivable 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 gifts 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 other long-term investments. 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 spending rate approved for the years ended June 30, 2021 and 2020 was 4%.

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 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.

Table 1 presents the range of useful lives for the University's depreciable assets:

TABLE 1 – Depreciable Assets

Depreciable asset category	Useful life
Land improvements	20 years
Buildings	12–50 years
Infrastructure	50 years
Building improvements	3–20 years
Equipment, furniture and IT infrastructure	3–15 years
Software	5 years

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 in 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, 2021 and 2020 (\$ in thousands) are presented in **Tables 2A** and **2B**:

TABLE 2A – Deferred Outflows of Resources

For the years ended June 30, 2021 and 2020 (\$ in thousands)

Deferred outflow	2021	2020
Change in fair value of interest rate swap agreements	\$ -	\$ 52,978
Debt refunding	125,201	79,648
Certain asset retirement obligations	1,158	1,781
Pension liability related	185,335	158,057
Other postemployment benefits liability related	239,859	238,807
Total deferred outflows of resources	\$ 551,553	\$ 531,271

TABLE 2B – Deferred Inflows of Resources

For the years ended June 30, 2021 and 2020 (\$ in thousands)

Deferred inflow	2021	2020
Sale of future revenues	\$ 54,921	\$ 66,099
Pension liability related	18,297	39,778
Other postemployment benefits liability related	338,233	151,049
Total deferred inflows of resources	\$ 411,451	\$ 256,926

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.

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 colleges and universities to make new loans under the Program ended on September 30, 2017, and final distributions were permitted through June 30, 2019. The University's Statements of Net Position include both the notes receivable from students and the related refundable loan liability to the Federal government.

Bond Issuance Costs

The University incurs certain costs associated with bond issuances. For the years ended June 30, 2021 and 2020, bond issuance costs amounted to \$4.0 million and \$3.6 million, respectively, and were expensed in accordance with the provisions of GASB Statement No. 65, *Items Previously Reported as Assets and Liabilities*.

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 expense.

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 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, 2021 and 2020 was \$141.4 million and \$136.2 million, respectively, and is a component of grants and contracts revenue on the Statements of Revenues, Expenses, and Changes in Net Position.

As a result of the COVID-19 pandemic, the University was awarded \$255.6 million of funding under the Coronavirus Aid, Relief, and Economic Security (CARES) Act, the Coronavirus Response and Relief Supplemental Appropriations Act (CRRSAA) and the American Rescue Plan of 2021 (ARPA), collectively provided under the Higher Education Emergency Relief Fund (HEERF). An additional \$3.0 million was awarded under the Governor's Emergency Education Relief Funds. Under Section 18004(a)(1) of the Coronavirus Aid, Relief, and Economic Security (CARES) Act and Section 314(a)(1) of the Coronavirus Response and Relief Supplemental Appropriations Act (CRRSAA), the University provided emergency financial aid grants to students of \$27.1 million and \$14.7 million for the years ended June 30, 2021 and 2020, respectively. These funds were recognized as revenue under non-operating federal grants. An additional, \$54.9 million and \$13.9 million for the years ended June 30, 2021 and 2020, respectively, was used to recover a portion of lost revenue and additional financial aid to students. These funds were also recorded under non-operating federal grant revenue. The remaining unused awarded amounts will be recorded in fiscal 2022 as qualifying expenses for students and the University are incurred

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

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, UMMSF 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, UMMSF 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, 2021 and 2020, respectively.

Newly Implemented Accounting Standards

Effective for the fiscal year ended June 30, 2020, the University adopted GASB Statement No. 84, *Fiduciary Activities*, ("GASB 84"). This statement establishes criteria for identifying fiduciary activities and requires that fiduciary activities be reported in a Statement of Fiduciary Net Position and a Statement of Changes in Fiduciary Position. GASB 84 permits business-type activities, such as the University, to report activities that would otherwise be considered fiduciary activities in the University's Statement of Net Position and Statement of Cash Flows as operating activities if upon receipt, the funds are normally expected to be held for three months or less. Given the majority of activities are custodial amounts held for three months or less, the University did not report these activities within a Statement of Fiduciary Net Position or Statement of Changes in Fiduciary Position. These fiduciary activities were reflected in the operating activities portion of the Statement of Cash Flows from noncapital financing activities at June 30, 2021 and 2020, respectively.

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 \$46.0 and \$38.7 million at June 30, 2021 and June 30, 2020. 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 Commonwealth 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.

Deposits with bond trustees at June 30, 2021 and 2020 are summarized in **Table 3**:

TABLE 3 – Deposits with Bond Trustees

As of June 30, 2021 and 2020 (\$ in thousands)

Deposits	2021	2020
Cash	\$ 23,904	\$ 18,410
MMDT	206,695	330,712
Permitted money market accounts	2,812	4,491
Repurchase agreements and other investments	-	5,317
Total deposits with bond trustees	\$ 233,411	\$ 358,930

At June 30, 2021, amounts restricted by bond trust agreements for capital projects and other purposes were \$217.4 million and \$16.0 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, 2021 and 2020, the bank balances of uninsured deposits totaled \$7.7 million and \$5.5 million, respectively.

Interest Rate Risk — Interest rate risk is the extent that changes in interest rates of debt investments will adversely affect the fair value of an investment. These investments include certain short-term cash equivalents, various long-term items and restricted assets by maturity in years. The University minimizes the risk of the fair value of securities falling due to changes in interest rates by ensuring securities have effective maturities of less than a year. MMDT and permitted money market accounts have effective maturities of less than one year, thereby limiting the interest rate risk.

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 years ended June 30, 2021 and 2020, respectively, are summarized in **Table 4**:

TABLE 4 – Investment Portfolio

As of June 30, 2021 and 2020 (\$ in thousands)

Investment type	2021	2020
Short-term investments	639,162	620,771
Long-term investments	1,163,888	748,689
Total	\$ 1,803,050	\$ 1,369,460

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 its trust funds. 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, 2021 and 2020, respectively are summarized in **Table 5**:

TABLE 5 – Investments

As of June 30, 2021 and 2020 (\$ in thousands)

Fund	University 2021	University 2020	Foundations 2021	Foundations 2020
Cash and cash equivalents	\$ 65,009	\$ 40,009	\$ 35,055	\$ 36,318
Money market and other investments	332,568	128,225	6,211	4,082
MMDT	117,000	117,000	-	-
Fixed income investments	192,738	144,045	1,579	1,558
Pooled investments-Fund I	-	-	853,411	576,092
Commercial ventures and intellectual property	5,950	4,532	-	40
Annuity life income funds	9,980	11,972	3,470	2,989
Total non-agency funds	\$ 723,245	\$ 445,783	\$ 899,726	\$ 621,079
Fund	Foundation Agency Funds 2021	Foundation Agency Funds 2020	Foundation Agency Funds 2021	Foundation Agency Funds 2020
Pooled investments-Fund I	920,212	608,763	920,212	608,763
Pooled investments-Fund II	9,419	314,914	9,419	314,914
Short term pool	150,174	-	150,174	-
Total Foundation agency funds	\$ 1,079,805	\$ 923,677	\$ 1,079,805	\$ 923,677
Total Investments	\$ 1,803,050	\$ 1,369,460	\$ 1,979,531	\$ 1,544,756

Fund I — Represents the endowment funds and University operating cash held at the UMF. The endowment funds include both donor-restricted endowments and quasi-endowments. The \$920.2 million of Pooled investments – Fund I, that are noted as Foundation agency funds, represent the quasi-endowments and operating cash balances invested in Fund 1 for longer term investment purposes. The investment horizon for this portfolio is 5 to 10 years.

Fund II — This fund represents a portion of the operating cash balances of the University that were transferred to UMF for investment purposes only. This portfolio was previously used by the University as an intermediate term investment vehicle. In anticipation of future cash needs, particularly in light of COVID-19 uncertainties, the majority of the assets of this pool were converted to cash equivalents in the 4th quarter of fiscal year 2020. In FY2021, \$150.0 million was transferred into the newly established University Short-Term Pool. In addition, assets of \$172.0 million were transferred into the Pooled Endowment Fund (Fund 1).

University Short-Term Pool — This newly established fund represents a portion of the operating cash balances of the University that have been transferred to UMF for investment purposes only. This portfolio has a high degree of liquidity. The asset allocation is 25% U.S. equities and 75% short-term corporate bonds. The University Treasurer has the authority to request the return of funds at any time in order to meet the operating needs of the University.

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 \$113.0 million and \$86.5 million, at June 30, 2021 and 2020, respectively.

The University held non-money market investments with a fair market value of \$1.0 billion and \$729.9 million at June 30, 2021 and 2020, 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, 2021 and 2020, there is no concentration of investments from one issuer equal to 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.





Rated debt investments, excluding U.S. Treasury funds, at fair value by credit quality of the University's investment portfolio as of June 30, 2021 are presented in **Table 6**:

TABLE 6 – S&P Quality Ratings, FY2021

As of June 30, 2021 (\$ in thousands)

Debt securities	AAA	AA	A	BBB	BB	B	Unrated	Total
Government agency bonds	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 869	\$ 869
Asset backed securities	16,130	351	2,211	1,921	-	-	1,220	21,833
Commercial mortgage-backed securities	14,768	-	-	767	-	-	2,999	18,534
Government issued commercial mortgage-backed securities	-	-	-	-	-	-	-	-
Government mortgage-backed securities	-	-	-	-	-	-	11,033	11,033
Non-government backed collateralized mortgage obligations	3,124	365	-	-	-	-	168	3,657
Corporate bonds	-	1,507	28,490	53,912	615	-	42	84,566
Municipal and provincial bonds	-	1,424	1,114	379	-	-	-	2,917
Index linked government bonds	-	-	-	-	-	-	977	977
Bond funds, including exchange traded funds	-	25	34	1,781	752	-	112,538	115,130
Total debt securities	\$34,022	\$ 3,672	\$31,849	\$58,760	\$ 1,367	\$ -	\$129,846	\$259,516

Rated debt investments, excluding U.S. Treasury funds, at fair value by credit quality of the University's investment portfolio as of June 30, 2020 are presented in **Table 7**:

TABLE 7 – S&P Quality Ratings, FY2020

As of June 30, 2020 (\$ in thousands)

Debt securities	AAA	AA	A	BBB	BB	B	Unrated	Total
Government agency bonds	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 773	\$ 773
Asset backed securities	15,860	-	459	1,689	-	-	1,605	19,613
Commercial mortgage-backed securities	11,596	-	-	530	-	-	2,078	14,204
Government issued commercial mortgage-backed securities	-	-	-	-	-	-	624	624
Government mortgage-backed securities	-	-	-	-	-	-	5,902	5,902
Non-government backed collateralized mortgage obligations	1,576	-	-	-	-	-	350	1,926
Corporate bonds	-	3,468	29,112	47,113	1,115	511	42	81,361
Municipal and provincial bonds	-	1,190	236	347	-	-	-	1,773
Index linked government bonds	-	-	-	-	-	-	1,523	1,523
Bond funds, including exchange traded funds	270	270	1,063	1,387	380	-	-	3,370
Total debt securities	\$29,302	\$ 4,928	\$30,870	\$51,066	\$ 1,495	\$ 511	\$ 12,897	\$131,069



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 fair value of the rated debt investments component of the University's investment portfolio by investment maturity as of June 30, 2021 is presented in **Table 8**:

TABLE 8 – Investment Maturity, FY2021

As of June 30, 2021 (\$ in thousands)

Debt securities	Less than 1 year	1 to 5 years	6 to 10 years	More than 10 years	Total
U.S. Treasury securities	\$ -	\$ 77,241	\$ 7,314	\$ -	\$ 84,555
Government agency bonds	-	302	567	-	869
Asset backed securities	4,448	14,568	2,817	-	21,833
Commercial mortgage-backed securities	5,304	12,272	958	-	18,534
Government issued commercial mortgage-backed securities	-	-	-	-	-
Government mortgage-backed securities	169	8,824	1,236	804	11,033
Non-government backed CMOs	932	2,725	-	-	3,657
Corporate bonds	10,269	64,333	9,566	398	84,566
Municipal and provincial bonds	1,137	1,780	-	-	2,917
Index linked government bonds	-	977	-	-	977
Bond funds, including exchange traded funds	-	113,676	1,429	25	115,130
Total debt securities	\$ 22,259	\$ 296,698	\$ 23,887	\$ 1,227	\$ 344,071

The fair value of the rated debt investments component of the University's investment portfolio by investment maturity as of June 30, 2020 is presented in **Table 9**:

TABLE 9 – Investment Maturity, FY2020

As of June 30, 2020 (\$ in thousands)

Debt securities	Less than 1 year	1 to 5 years	6 to 10 years	More than 10 years	Total
U.S. Treasury securities	\$ -	\$ 40,211	\$ 4,842	\$ -	\$ 45,053
Government agency bonds	-	248	525	-	773
Asset backed securities	5,427	12,202	1,984	-	19,613
Commercial mortgage-backed securities	3,758	10,336	110	-	14,204
Government issued commercial mortgage-backed securities	-	-	624	-	624
Government mortgage-backed securities	2,223	3,679	-	-	5,902
Non-government backed CMOs	350	1,576	-	-	1,926
Corporate bonds	13,120	62,946	4,875	420	81,361
Municipal and provincial bonds	1,730	43	-	-	1,773
Index linked government bonds	-	1,209	314	-	1,523
Bond funds, including exchange traded funds	59	1,861	1,421	29	3,370
Total debt securities	\$ 26,667	\$ 134,311	\$ 14,695	\$ 449	\$ 176,122

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, 2021 and 2020, the University had no plans or intentions to sell such investments at amounts different from NAV.



The fair value of the University's investments by type as of June 30, 2021 is presented in **Table 10**:

TABLE 10 – Fair Value Hierarchy of Investments, FY2021

As of June 30, 2021 (\$ in thousands)

Investment	Investments Measured at NAV	Investments classified in the fair value hierarchy Level 1	Investments classified in the fair value hierarchy Level 2	Investments classified in the fair value hierarchy Level 3	Total
Money market funds	\$ -	\$ 621,839	\$ -	\$ -	\$ 621,839
Debt securities					
U.S. Treasury securities	-	84,555	-	-	84,555
Government agency bonds	-	-	869	-	869
Asset backed securities	-	-	21,833	-	21,833
Commercial mortgage-backed securities	-	-	18,534	-	18,534
Government issued commercial mortgage-backed securities	-	-	-	-	-
Government mortgage-backed securities	-	-	11,033	-	11,033
Non-government backed CMOs	-	-	3,657	-	3,657
US Corporate bonds	-	-	84,524	42	84,566
Non US Corporate Bonds	-	-	-	-	-
Municipal and provincial bonds	-	-	2,917	-	2,917
Index linked government Bonds	-	-	977	-	977
Bond funds, including exchange traded funds	-	115,130	-	-	115,130
Total debt securities	-	199,685	144,344	42	344,071
Equity securities					
Domestic equities	-	117,864	-	1,635	119,499
International equities	-	27,914	-	-	27,914
Total equity securities	-	145,778	-	1,635	147,413
Alternative investments					
Multi-strategy hedge funds					
Equity	219,855	-	-	-	219,855
Long/short	144,898	-	-	-	144,898
Fixed income	31,261	-	-	-	31,261
Absolute return	15,115	-	-	-	15,115
Real assets	7,405	-	-	-	7,405
Private equity and venture capital	63,243	-	-	-	63,243
Private debt	16,017	-	-	-	16,017
Private real estate	7,355	-	-	-	7,355
Total alternative investments	505,149	-	-	-	505,149
Total investments at fair value	505,149	967,302	144,344	1,677	1,618,472
Cash and cash equivalents	-	-	-	-	67,578
MMDT	-	-	-	-	117,000
Total investments at cost	-	-	-	-	184,578
Total investments	\$ 505,149	\$ 967,302	\$ 144,344	\$ 1,677	\$ 1,803,050

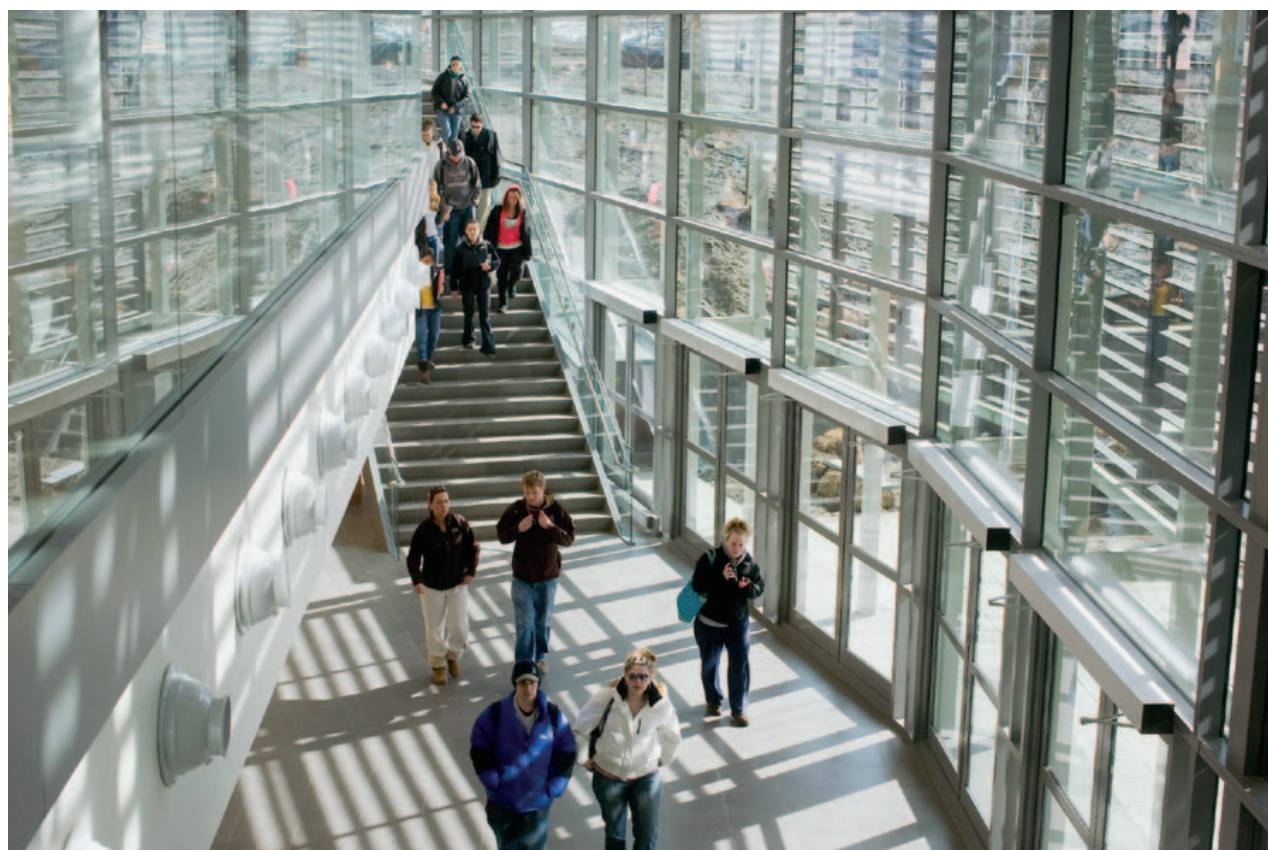
Unfunded commitments, redemption terms, restrictions, and notice period for investments that have been valued using NAV as a practical expedient as of June 30, 2021 are presented in **Table 11**:

TABLE 11 – Alternative Investments FY2021

As of June 30, 2021 (\$ in thousands)

Alternative investment	NAV	Unfunded commitments	Redemption terms	Notice period	Redemption restrictions
Multi-strategy hedge funds					
Equity	\$ 219,855	-	Daily to annual	1-90 days	Lock-up provisions range from none to 2 years.
Long/short	144,898	-	Quarterly to annual	45-90 days	Lock-up provisions range from none to 2 years.
Fixed income	31,261	-	Quarterly to semi-annual	60-90 days	No lock-up restrictions
Absolute return	15,115	-	Quarterly to annual	45-65 days	No lock-up restrictions
Real assets	7,405	-	Annual	90 days	No lock-up restrictions
Private equity and venture capital	63,243	12,460	Closed end funds	*	Not redeemable
Private debt	16,017	10,125	Closed end funds	*	Not redeemable
Private real estate	7,355	1,475	Closed end funds	*	Not redeemable
Total	\$ 505,149	\$ 24,060			

* The University has made commitments to various private equity and venture debt 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 fair value of the University's investments by type as of June 30, 2020 is summarized in **Table 12**:

TABLE 12 – Fair Value Hierarchy of Investments, FY2020

As of June 30, 2020 (\$ in thousands)

Investment	Investment Measured at NAV	Investments classified in the fair value hierarchy Level 1	Investments classified in the fair value hierarchy Level 2	Investments classified in the fair value hierarchy Level 3	Total
Money market funds	\$ -	\$ 452,044	\$ -	\$ -	\$ 452,044
Debt securities					
U.S. Treasury securities	-	45,053	-	-	45,053
Government agency bonds	-	-	773	-	773
Asset backed securities	-	-	19,613	-	19,613
Commercial mortgage-backed securities	-	-	14,204	-	14,204
Government issued commercial mortgage-backed securities	-	-	624	-	624
Government mortgage-backed securities	-	-	5,902	-	5,902
Non-government backed CMOs	-	-	1,602	324	1,926
US Corporate bonds	-	-	81,115	42	81,157
Non US Corporate Bonds	-	-	204	-	204
Municipal and provincial bonds	-	-	1,773	-	1,773
Index linked government Bonds	-	-	1,523	-	1,523
Bond funds, including exchange traded funds	-	3,370	-	-	3,370
Total debt securities	-	48,423	127,333	366	176,122
Equity securities					
Domestic equities	-	68,117	-	1,585	69,702
International equities	-	30,648	-	-	30,648
Total equity securities	-	98,765	-	1,585	100,350
Alternative investments					
Multi-strategy hedge funds					
Equity	181,521	-	-	-	181,521
Long/short	136,270	-	-	-	136,270
income	32,332	-	-	-	32,332
Absolute return	36,026	-	-	-	36,026
Real assets	12,881	-	-	-	12,881
Private equity and venture capital	32,420	-	-	-	32,420
Private debt	11,148	-	-	-	11,148
Private real estate	8,847	-	-	-	8,847
Total alternative investments	451,445	-	-	-	451,445
Other securities	-	-	-	-	-
Total investments at fair value	451,445	599,232	127,333	1,951	1,179,961
Cash and cash equivalents	-	-	-	-	72,499
MMDT	-	-	-	-	117,000
Total investments at cost	-	-	-	-	189,499
Total investments	\$ 451,445	\$ 599,232	\$ 127,333	\$ 1,951	\$ 1,369,460

Unfunded commitments, redemption terms, restrictions, and notice period for investments that have been valued using NAV as a practical expedient as of June 30, 2020 are presented in **Table 13**:

TABLE 13 – Alternative Investments FY2020

As of June 30, 2020 (\$ in thousands)

Alternative investment	NAV	Unfunded commitments	Redemption terms	Notice period	Redemption restrictions
Multi-strategy hedge funds					
Equity	\$ 181,521	\$ -	Daily to annual	1-90 days	Lock-up provisions range from none to 2 years.
Long/short	136,270	-	Quarterly to annual	45-90 days	Lock-up provisions range from none to 3 years.
Fixed income	32,332	-	Quarterly to semi-annual	60-90 days	Lock-up provisions range from none to 1 year.
Absolute return	36,026	-	Quarterly to annual	45-65 days	No lock-up restrictions
Real assets	12,881	-	Annual	90 days	No lock-up restrictions
Private equity and venture capital	32,420	12,933	Closed end funds	*	Not redeemable
Private debt	11,148	13,597	Closed end funds	*	Not redeemable
Private real estate	8,847	1,513	Closed end funds	*	Not redeemable
Total	\$451,445	\$ 28,043			

* The University has made commitments to various private equity and venture debt 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, 2021 and 2020 are presented in **Table 14**:

TABLE 14 – Accounts Receivable, Net

As of June 30, 2021 and 2020 (\$ in thousands)

Accounts receivable	2021	2020
Student tuition and fees	\$ 60,329	\$ 64,299
Student loans	36,014	43,001
Pledges	30,718	38,694
Grants and contracts	116,980	93,772
CWM program	65,269	62,399
UMass Memorial	17,028	68,070
Other	85,770	43,150
Total	412,108	413,385
Less: allowance for doubtful accounts and discount to present value for pledges	(34,513)	(36,117)
Accounts receivable, net	\$ 377,595	\$ 377,268

The receivable from UMass Memorial, which is uncollateralized, represents a potential concentration of credit risk for the University. This receivable represents 4.5% and 18.0% of total accounts receivable for the University at June 30, 2021 and 2020, respectively.

6. UMass Memorial Medical Center

The University has granted UMass Memorial the right to occupy portions of UMass Chan 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, 2021 and 2020, the reimbursements received for services provided to UMass Memorial were \$161.6 million and \$119.0 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 \$100.3 million and \$65.1 million for the years ended June 30, 2021 and 2020, respectively. As of June 30, 2021 and 2020, the University has recorded a receivable in the amount of \$17.0 million and \$68.1 million, respectively from UMass Memorial which includes \$10.0 million and \$38.6 million, respectively, in payroll and related fringe charges. The University has recorded a payable of \$6.4 million and \$4.8 million at June 30, 2021 and 2020, respectively, primarily for cross-funded payroll.

7. Capital Assets

Table 15 presents the University's capital assets activity for the years ended June 30, 2021 and 2020:

TABLE 15 – Capital Assets Activity

For the years ended June 30 (\$ in thousands)

Asset	As of 2019	Additions	Retirements/ adjustments	As of 2020	Additions	Retirements/ adjustments	As of 2021
Land	\$ 166,024	\$ -	\$ -	\$ 166,024	\$ 4,015	\$ (52)	\$ 169,987
Buildings and improvements	7,106,326	257,356	(6,578)	7,357,104	376,699	(54,255)	7,679,548
Software	114,292	5,709	-	120,001	6,284	(217)	126,068
Equipment and furniture	717,043	37,102	(41,632)	712,513	43,560	(13,676)	742,397
Library books	46,965	-	(7,347)	39,618	-	(6,995)	32,623
Total	8,150,650	300,167	(55,557)	8,395,260	430,558	(75,195)	8,750,623
Accumulated depreciation	(3,304,737)	(288,667)	45,643	(3,547,761)	(300,945)	63,114	(3,785,592)
Total	4,845,913	11,500	(9,914)	4,847,499	(129,613)	(12,081)	4,965,031
Construction in progress	318,287	213,480	(172,697)	359,070	287,957	(368,089)	278,938
Total capital assets, net	\$5,164,200	\$ 224,980	\$ (182,611)	\$5,206,569	\$ 417,570	\$ (380,170)	\$5,243,969

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, 2021 and 2020, the University capitalized net interest costs of \$7.6 million and \$5.9 million, respectively.

8. Public Private Partnerships and Leases

Public Private Partnerships (PPPs)

On November 8, 2016, the Building Authority entered into an agreement whereby the Building Authority 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 is \$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 the Boston campus 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.

On November 14, 2018, the Building Authority entered into an agreement whereby the Building Authority sub-leased land on the 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 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 on January 1, 2021, the annual rental amount payable to the Building Authority under the ground lease will be \$625.0 thousand, increasing by 3% every five years.

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 the Dartmouth campus 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.

At June 30, 2021 and 2020, the Building Authority recorded a net receivable of \$1.5 million and 1.0 million, respectively, related to its Boston and Dartmouth ground leases.

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 or the University.

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, 99-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 year 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, 99-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, 2021 and 2020, all leases with the Commonwealth were in good standing and any leases requiring action by the Building Authority during the year to facilitate their renewals 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 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 \$30.6 million and \$34.9 million for the years ended June 30, 2021 and 2020, 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, 2021 and 2020, the amount reported as rental income was \$24.8 million and \$24.7 million, respectively.

Tables 16A and 16B present a schedule of the University's future minimum payments under non-cancelable leases for the next five years and in subsequent five-year periods as of June 30, 2021:

TABLE 16A – Lessor: Minimum Lease Payments to Receive

As of June 30, 2021 (\$ in thousands)

Fiscal year end	Direct financing lease	PPP Operating leases	Other operating leases	Total
2022	\$ 5,072	\$ 1,650	\$ 11,984	\$ 18,706
2023	5,073	1,650	9,207	\$ 15,930
2024	2,665	1,650	8,589	\$ 12,904
2025	5,002	1,650	8,380	\$ 15,032
2026	5,160	1,659	7,137	\$ 13,956
2027–2031	25,412	8,353	30,756	\$ 64,521
2032–2036	25,918	8,450	27,090	\$ 61,458
2037–2041	21,470	8,550	452	\$ 30,472
2042–2046	5,923	8,653	-	\$ 14,576
2047–2051	-	8,759	-	\$ 8,759
2052–2056	-	8,868	-	\$ 8,868
2057–2061	-	4,197	-	\$ 4,197
2062–2066	-	1,848	-	\$ 1,848
Total	\$ 101,695	\$ 65,937	\$ 103,595	\$ 271,227
Less amounts representing interest		(28,256)		
Net investment in direct financing lease	\$ 73,439			

TABLE 16B – Lessee: Minimum Lease Payments to Pay

As of June 30, 2021 (\$ in thousands)

Fiscal year end	Minimum to pay
2022	\$ 19,378
2023	18,318
2024	16,719
2025	15,780
2026	15,689
2027–2031	76,367
2032–2036	26,520
2037–2041	-
2042–2046	-
2047–2051	-
2052–2056	-
2057–2061	-
2062–2066	-
Total	\$ 188,771



9. Long-Term Debt

The outstanding long-term debt as of June 30, 2021, and the related activity during the fiscal year is presented in **Table 17**:

TABLE 17 – Long-term Debt, FY2021

As of June 30 (\$ in thousands)

Debt	Original borrowing	Maturity date	Interest rate	As of 2020	Additions	Reductions	As of 2021
Building Authority							
Series 2008-A	\$ 26,580	2038	Variable	\$ 16,050	\$ -	\$ (16,050)	\$ -
Series 2008-1	232,545	2038	Variable	145,515	-	(145,515)	-
Series 2009-2	271,855	2039	6.4–6.6%	16,945	-	-	16,945
Series 2009-3	28,570	2039	5.8–6.2%	23,825	-	(690)	23,135
Series 2010-1	118,985	2020	5.0%	15,900	-	(15,900)	-
Series 2010-2	430,320	2040	3.8–5.5%	430,320	-	-	430,320
Series 2010-3	3,005	2040	5.8%	2,555	-	(65)	2,490
Series 2011-1	135,040	2034	Variable	122,010	-	(122,010)	-
Series 2011-2	101,700	2034	Variable	92,800	-	(92,800)	-
Series 2013-1	212,585	2043	2.0–5.0%	95,170	-	(81,435)	13,735
Series 2013-2	71,970	2043	0.4–4.3%	58,200	-	(26,190)	32,010
Series 2013-3	24,640	2043	4.0–5.0%	1,380	-	(435)	945
Series 2014-1	293,890	2044	3.0–5.0%	147,675	-	(80,850)	66,825
Series 2014-3	67,635	2029	2.0–5.0%	50,680	-	(22,045)	28,635
Series 2014-4	157,855	2025	0.2–3.4%	30,540	-	(16,675)	13,865
Series 2015-1	298,795	2045	4.0–5.0%	298,795	-	(31,915)	266,880
Series 2015-2	191,825	2036	3.0–5.0%	179,805	-	(22,040)	157,765
Series 2017-1	165,130	2047	4.0–5.3%	165,130	-	-	165,130
Series 2017-2	19,510	2027	1.6–3.4%	16,595	-	(1,495)	15,100
Series 2017-3	187,680	2038	3.0–5.0%	160,015	-	(4,385)	155,630
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
Series 2020-1	200,840	2050	5.0%	200,840	-	-	200,840
Series 2020-2	129,830	2050	1.8–3.5%	129,830	-	-	129,830
Series 2020-3	319,345	2044	1.7–3.5%	319,345	-	(1,550)	317,795
Series 2020-4	329,930	2043	0.4%–3.0%	-	329,930	-	329,930
Series 2021-1	312,330	2037	5.0%	-	312,330	(10,060)	302,270
Series 2021-2	46,585	2036	0.2%	-	46,585	-	46,585
Unamortized bond premium				205,039	71,803	(34,412)	242,430
Total Building Authority				3,171,334	760,648	(726,517)	3,205,465
MHEFA/MDFA							
Series A	20,000	2030	Variable	20,000	-	-	20,000
Unamortized bond premium				-	-	-	-
Total MHEFA/MDFA				20,000	-	-	20,000
WCCC MHEFA/MDFA							
Series 2005-D	99,325	2029	5.0–5.3%	475	-	(50)	425
Unamortized bond premium				25	-	(5)	20
Total WCCC MHEFA/MDFA				500	-	(55)	445
MDFA							
Clean renewable energy bonds	1,625	2027	3.5%	669	-	(97)	572
Total bonds payable				3,192,503	760,648	(726,669)	3,226,482
Notes and commercial paper				1,486	31,000	(1,486)	31,000
Capital lease obligations				2,189	1,308	(1,304)	2,193
Total long-term debt				\$3,196,178	\$ 792,956	\$ (729,459)	\$3,259,675

Table 18 represents the outstanding long-term debt as of June 30, 2020, and the related activity during the fiscal year:

TABLE 18 – Long-term Debt, FY2020

For the year ended June 30 (\$ in thousands)

Debt	Original borrowing	Maturity date	Interest rate	As of 2019	Additions	Reductions	As of 2020
Building Authority							
Series 2008-A	\$ 26,580	2038	Variable	\$ 17,120	\$ -	\$ (1,070)	\$ 16,050
Series 2008-1	232,545	2038	Variable	154,480	-	(8,965)	145,515
Series 2009-2	271,855	2039	6.4–6.6%	16,945	-	-	16,945
Series 2009-3	28,570	2039	5.8–6.2%	24,480	-	(655)	23,825
Series 2010-1	118,985	2020	5.0%	31,055	-	(15,155)	15,900
Series 2010-2	430,320	2040	3.8–5.5%	430,320	-	-	430,320
Series 2010-3	3,005	2040	5.8%	2,615	-	(60)	2,555
Series 2011-1	135,040	2034	Variable	123,540	-	(1,530)	122,010
Series 2011-2	101,700	2034	Variable	93,955	-	(1,155)	92,800
Series 2013-1	212,585	2043	2.0–5.0%	188,675	-	(93,505)	95,170
Series 2013-2	71,970	2043	0.4–4.3%	60,530	-	(2,330)	58,200
Series 2013-3	24,640	2043	4.0–5.0%	24,240	-	(22,860)	1,380
Series 2014-1	293,890	2044	3.0–5.0%	291,890	-	(144,215)	147,675
Series 2014-2	14,085	2019	0.4–2.1%	2,905	-	(2,905)	-
Series 2014-3	67,635	2029	2.0–5.0%	54,555	-	(3,875)	50,680
Series 2014-4	157,855	2025	0.2–3.4%	61,600	-	(31,060)	30,540
Series 2015-1	298,795	2045	4.0–5.0%	298,795	-	-	298,795
Series 2015-2	191,825	2036	3.0–5.0%	186,075	-	(6,270)	179,805
Series 2017-1	165,130	2047	4.0–5.3%	165,130	-	-	165,130
Series 2017-2	19,510	2027	1.6–3.4%	18,065	-	(1,470)	16,595
Series 2017-3	187,680	2038	3.0–5.0%	178,945	-	(18,930)	160,015
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
Series 2020-1	200,840	2050	5.0%	-	200,840	-	200,840
Series 2020-2	129,830	2050	1.8–3.5%	-	129,830	-	129,830
Series 2020-3	319,345	2044	1.7–3.5%	-	319,345	-	319,345
Unamortized bond premium				184,172	57,147	(36,280)	205,039
Total Building Authority				2,856,462	707,162	(392,290)	3,171,334
MHEFA/MDFA							
Series A	20,000	2030	Variable	20,000	-	-	20,000
Series 2011	29,970	2034	2.5–4.0%	23,795	-	(23,795)	-
Unamortized bond premium				792	-	(792)	-
Total MHEFA/MDFA				44,587	-	(24,587)	20,000
WCCC MHEFA/MDFA							
Series 2005-D	99,325	2029	5.0–5.3%	495	-	(20)	475
Series 2011	10,495	2023	2.0–5.0%	4,995	-	(4,995)	-
Unamortized bond premium				428	-	(403)	25
Total WCCC MHEFA/MDFA				5,918	-	(5,418)	500
MDFA							
Clean renewable energy bonds	1,625	2027	3.5%	765	-	(96)	669
Total bonds payable				2,907,732	707,162	(422,391)	3,192,503
Notes and commercial paper				132,810	11,950	(143,274)	1,486
Capital lease obligations				1,836	1,095	(742)	2,189
Total long-term debt				\$3,042,378	\$ 720,207	\$ (566,407)	\$ 3,196,178

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 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, 2021, on long-term debt for the next five fiscal years and in subsequent five-year periods are presented in **Table 19**:

TABLE 19 – Principal and Interest on Long-term Debt

(\$ in thousands)

Fiscal year	Bonds – principal	Bonds – interest	Bonds – interest subsidy*	Direct placement bonds - principal	Direct placement bonds - interest	Total
2022	\$ 98,990	\$ 124,770	\$ (7,439)	\$ -	\$ 763	\$ 217,084
2023	112,180	120,711	(7,224)	-	763	226,430
2024	115,800	116,261	(6,993)	1,655	754	227,477
2025	113,505	111,809	(6,729)	1,690	718	220,993
2026	109,531	107,063	(6,445)	1,725	684	212,558
2027–2031	616,106	457,771	(27,651)	8,410	3,640	1,058,276
2032–2036	603,615	319,769	(18,200)	9,045	2,982	917,211
2037–2041	635,355	178,164	(6,394)	10,480	1,539	819,144
2042–2046	407,290	64,476	-	4,645	162	476,573
2047–2051	134,010	12,805	-	-	-	146,815
Total	\$ 2,946,382	\$ 1,613,599	\$ (87,075)	\$ 37,650	\$ 12,005	\$ 4,522,561

* 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%. For Fiscal Year 2022 through 2042, the estimated subsidy reflected in the table above is 33.0%.

Variable Rate Bonds

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 had 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. Fees incurred under the agreements related to the bonds totaled \$315.3 thousand and \$531.8 thousand for the years ended June 30, 2021 and 2020, respectively. The bonds were refunded in March 2021 and the standby purchase agreements were terminated.

The University had a 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. Fees incurred under the agreements related to the bonds totaled \$266.8 thousand and \$421.7 thousand for the years ended June 30, 2021 and 2020, respectively. The bonds were refunded in March 2021 and the standby purchase agreement was terminated.

Window Bonds

In fiscal year 2011, the University issued its 2011-2 bonds in a variable rate window bond mode. As with the Building Authority's other variable rate bonds, the window bondholders can tender the bonds at any time. However, unlike the University's other variable rate bonds, where the bondholders will receive payment on any tendered bonds 7 days from the tender, window bondholders are not required to receive funds for the tender until after a 30-day remarketing period and an additional 180-day funding window period. Due to this 210-day funding period, the University is not required to obtain any type of liquidity support for the 2011-2 bonds. Window bondholders receive an interest rate on the window bonds at a fixed spread over the Securities Industry and Financial Markets Association Municipal Swap Index™ ("SIFMA"). The initial spread to the SIFMA index is 9 basis points. The bonds were refunded in March 2021.

Bond Refundings

In FY2021, the University issued \$312.3 million of Refunding Revenue Bonds, Series 2021-1 and \$376.5 million of federally taxable Refunding Revenue Bonds, Series 2020-4 and 2021-2. The refunding bonds, refunded the 2008-1, 2008-A, 2011-1 and the 2011-2 bonds in the amount of \$358.4 million, the 2013-2 and 2014-1 bonds in the amount of \$26.8 million, and the 2013-1, 2013-2, 2014-1, 2014-3 and 2015-1 bonds in the amount of \$200.1 million.

In FY2020, the University issued \$319.3 million of Senior Series 2020-3 bonds, which advance refunded \$22.7 million of Boston bonds issued under the Massachusetts Health and Academic Facilities Authority (MHEFA) Series 2011 and \$4.1 million of the WCCC Series 2011 bonds. The Series 2020-3 bonds also refunded \$88.3 million of the University's 2013-1 bonds, \$22.4 million of the University's 2013-3 bonds, and \$143.5 million of the University's 2014-1 bonds. These advanced refunded bonds are considered defeased and, accordingly, the liability for the bonds payable and the assets held to repay the debt are not recorded on the University's financial statements.

During fiscal year ending June 30, 2021 and 2020, approximately \$619.0 and \$281.0 million of bonds outstanding from refunding activities is considered defeased, respectively.



Bond Premium

In FY2021, the University received premiums at issuance totaling \$71.8 million. The University amortizes the premiums received as a reduction of interest expense over the life of the respective bond issue. In FY2020, the University received premiums at issuance totaling \$57.1 million.

Interest Rate Swaps

During FY2021, the University refunded all of its hedged variable rate debt and terminated the associated interest rate swaps. In accordance with GASB Statement No. 53, *Accounting and Financial Reporting for Derivative Instruments*, any previously recorded deferred outflows related to the terminated interest rate swaps have been reclassified as deferred outflows related to debt refundings and are being amortized as a component of interest expense over the life of the old debt or the life of the new debt, whichever is shorter.

The University's hedging derivative instruments at June 30, 2020 are presented in **Table 20**:

TABLE 20 – Hedging Derivative Instruments

As of June 30, 2020 (\$ in thousands)

Series	Derivative instruments - liability June 30, 2020	Type of hedge	Financial statement classification for changes in liability
Series 2008-1 Swap	(32,068)	Cash Flow	Non-current liability
Series 2008-A Swap	(3,795)	Cash Flow	Non-current liability
Series 2006-1 Swap	(37,118)	Cash Flow	Non-current liability
Total	\$ (72,981)		

Commercial Paper

The maximum aggregate principal amount of commercial paper the University may have outstanding at one time is \$200.0 million. The University's Series 2013-A2 are secured by standby liquidity facility agreement that expires in August 12, 2022. As of June 30, 2021 the outstanding commercial paper had a term of 91 days. During FY2021 and FY2020, the University issued \$31.0 million and \$10.5 million of commercial paper, respectively. As of June 30, 2021 and 2020, the University had an outstanding commercial paper balance of \$31.0 million and \$0.0 million, respectively. The University incurred total fees of \$0.7 million in FY2021 and FY2020, respectively, associated with the use of commercial paper.

Line of Credit

During FY2021, the University entered into line of credit agreements with Bank of America and State Street Bank with a maximum loan amount of \$75.0 million each, for a total maximum loan amount of \$150.0 million. The line of credit has a maturity date of May 10, 2022. As of June 30, 2021, the University had not drawn on the line of credit.

10. Other Liabilities

Table 21 shows current and long-term portions of other liabilities as recorded in the Statements of Net Position:

TABLE 21 – Current Portion and Total Other Liabilities

As of June 30 (\$ in thousands)

Liabilities	As of June 30, 2020	Current portion as of June 30, 2020	As of June 30, 2021	Current portion as of June 30, 2021
Compensated absences*	\$ 113,892	\$ 88,722	\$ 121,440	\$ 97,562
Workers' compensation*	13,256	2,550	18,538	2,541
Unearned revenues	135,816	91,037	142,951	96,685
Advances and deposits	19,988	5,238	19,734	5,441
Other Liabilities	170,827	60,557	136,675	70,396

* 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, 2021 and 2020, the Commonwealth paid \$364.9 million and \$383.5 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 \$119.3 million and \$142.1 million during the years ended June 30, 2021 and 2020, 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, as presented in **Table 22**:

TABLE 22 – Membership Contributions

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 \$141.7 million and \$134.8 million for the years ended June 30, 2021 and 2020, respectively. Annual covered payroll was 78.3% and 78.0% of annual total payroll for the University for the years ended June 30, 2021 and 2020, 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, 2021 was determined based on a measurement date of June 30, 2020 from an actuarial valuation as of January 1, 2020 rolled forward to June 30, 2020. The net pension liability measured as of June 30, 2020 was determined based on a measurement date of June 30, 2019 from an actuarial valuation as of January 1, 2019 rolled forward to June 30, 2019. 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, 2021 and 2020, the University reported a liability of \$644.9 million and \$526.7 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, 2020 and 2019 was 3.76% and 3.60%, respectively.

For the fiscal years ended June 30, 2021 and 2020, the University recognized pension expense of \$100.9 million and \$93.2 million, respectively.

The University reported its proportionate share of MSERS's deferred outflows of resources and deferred inflows of resources related to pensions from the following sources as of June 30, 2021 and 2020, presented in **Tables 23A** and **23B**:

TABLE 23A – University's Proportionate Share of MSERS, FY2021

As of June 30, 2021 (\$ in thousands)

Pension resource	Deferred outflows of resources	Deferred inflows of resources
Changes of assumptions	\$ 36,564	\$ -
Changes in proportion due to internal allocation	60,820	12,552
Employer contributions after measurement date	31,495	-
Differences between expected and actual experience	20,519	4,173
Net difference between projected and actual investment earnings on pension plan investments	35,450	-
Changes in proportion from Commonwealth	487	1,572
Total	\$ 185,335	\$ 18,297

TABLE 23B – University's Proportionate Share of MSERS, FY2020

As of June 30, 2020 (\$ in thousands)

Pension resource	Deferred outflows of resources	Deferred inflows of resources
Changes of assumptions	\$ 39,043	\$ -
Changes in proportion due to internal allocation	59,974	25,043
Employer contributions after measurement date	40,617	-
Differences between expected and actual experience	17,493	6,851
Net difference between projected and actual investment earnings on pension plan investments	-	7,857
Changes in proportion from Commonwealth	930	27
Total	\$ 158,057	\$ 39,778

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 2022. The remaining difference between the University's balances of deferred outflows and inflows of resources related to pension liability will be recognized in pension expense as presented in **Table 24**:

TABLE 24 – Amortization of Pension Expense in Future Years

(\$ in thousands)

Year ended June 30	Pension
2022	\$ 26,867
2023	35,015
2024	36,106
2025	26,993
2026	10,562
Total	\$ 135,543

Actuarial Assumptions

Significant actuarial assumptions used at each respective measurement date are presented in **Table 25**:

TABLE 25 – Actuarial Assumptions

Assumption	June 30, 2020	June 30, 2019
Investment rate of return	7.15%	7.25%
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 **
Mortality rates: Post-retirement	RP-2014 Blue Collar Healthy Annuitant Scale MP-2016 **	RP-2014 Blue Collar Healthy Annuitant Scale MP-2016 **
Disability	RP-2014 Blue Collar Healthy Annuitant Scale MP-2016 **	RP-2014 Blue Collar Healthy Annuitant Scale MP-2016 **

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

** Set forward one year for females.

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, 2020 and 2019 are summarized in **Tables 26A** and **26B**:

TABLE 26A – Target Asset Allocation and Expected Real Rate of Return, FY2020

For the year ended June 30, 2020 (\$ in thousands)

Asset class	Target allocation	Long-term expected real rate of return
Global equity	39.00%	4.80%
Core fixed income	15.00%	0.70%
Private equity	13.00%	8.20%
Portfolio completion strategies	11.00%	3.20%
Real estate	10.00%	3.50%
Value added fixed income	8.00%	4.20%
Timber / natural resources	4.00%	4.10%
Total	100.00%	

TABLE 26B – Target Asset Allocation and Expected Real Rate of Return, FY2019

For the year ended June 30, 2019 (\$ in thousands)

Asset class	Target allocation	Long-term expected real rate of return
Global equity	39.00%	4.90%
Core fixed income	15.00%	1.30%
Private equity	13.00%	8.20%
Portfolio completion strategies	11.00%	3.90%
Real estate	10.00%	3.60%
Value added fixed income	8.00%	4.70%
Timber / natural resources	4.00%	4.10%
Total	100.00%	

Discount Rate

The discount rate used to measure the total pension liability was 7.15% and 7.25% at June 30, 2020 and 2019, 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

Table 27 illustrates the impact of a 1% change in the discount rate for the net pension liability at June 30, 2021 and 2020 (\$ in thousands):

TABLE 27 – Discount Rate Sensitivity

Discount Rate Sensitivity	1% Decrease	Current discount rate	1% Increase
June 30, 2021	\$ 849,667	\$ 644,879	\$ 476,558
June 30, 2020	701,230	526,739	377,816

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, 2021 and 2020, there were 2,057 and 2,129 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 \$8.5 million and \$8.0 million in 2021 and 2020, respectively. University employees contributed \$19.6 million and \$19.3 million in 2021 and 2020, respectively.

The MSERS and ORP retirement contributions of employees who become members of MSERS or ORP after January 1, 2011 are subject to a state compensation limit. Effective January 1, 2011, the University established a defined contribution plan, the University of Massachusetts 401(a) Retirement Gap Plan (Gap Plan). Employees with MSERS or ORP membership dates after January 1, 2011 are eligible to participate in for the Gap Plan. Eligible employees begin participation in the Gap Plan when their regular compensation exceeds the state compensation limit in effect for the plan year, at which point their contributions to MSERS or ORP are required to stop for the remainder of the plan year. Employee contributions to the Gap Plan are mandatory and at the same rate as MSERS and ORP; the University contributes 5%. As of June 30, 2021 and 2020, the plan assets of the Gap Plan were \$9.4 million and \$6.2 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, 2021 and 2020, the retirees' share of premium costs is between 10% - 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, 2021 was determined based on a measurement date of June 30, 2020 from an actuarial valuation as of January 1, 2020 rolled forward to June 30, 2020. The total OPEB liability as of June 30, 2020 was determined based on a measurement date of June 30, 2019 from an actuarial valuation as of January 1, 2019 rolled forward to June 30, 2019. 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, 2021 and 2020, the University reported a liability of \$829.8 million and \$993.0 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, actuarially determined. The University's proportion of the OPEB plan at measurement dates of June 30, 2020 and 2019 was 4.01% and 5.43%, respectively.

For the fiscal years ended June 30, 2021 and 2020, the University recognized OPEB expense of \$40.5 million and \$96.9 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, 2021, as presented in **Tables 28A** and **28B**:

TABLE 28A – University's Proportionate Share of OPEB, FY2021

As of June 30, 2021 (\$ in thousands)

OPEB Resources	Deferred outflows of resources	Deferred inflows of resources
Changes of assumptions	\$ 68,336	\$ 80,198
Changes in proportion due to internal allocation	128,426	234,735
Employer contributions after measurement date	16,539	-
Differences between expected and actual experience	22,901	20,482
Net difference between projected and actual investment earnings on OPEB plan investments	2,399	-
Changes in proportion from Commonwealth	1,258	2,818
Total	\$ 239,859	\$ 338,233

TABLE 28B – University's Proportionate Share of OPEB, FY2020

As of June 30, 2020 (\$ in thousands)

OPEB Resources	Deferred outflows of resources	Deferred inflows of resources
Changes of assumptions	\$ 764	\$ 149,320
Changes in proportion due to internal allocation	174,758	-
Employer contributions after measurement date	21,040	-
Differences between expected and actual experience	39,824	1,272
Net difference between projected and actual investment earnings on OPEB plan investments	-	457
Changes in proportion from Commonwealth	2,421	-
Total	\$ 238,807	\$ 151,049

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 2022. The remaining difference between the University's balances of deferred outflows and inflows of resources related to OPEB will be recognized in OPEB expense as presented in **Table 29**:

TABLE 29 – Amortization of OPEB Expense in Future Years

(\$ in thousands)

Year ended June 30	OPEB
2022	\$ (34,914)
2023	(31,040)
2024	(17,893)
2025	(17,078)
2026	(13,988)
Total	\$ (114,913)



Actuarial Assumptions

Significant actuarial assumptions used at the 2020 measurement date are as follows:

2020 Long-term rate of return on investment: 7.15%

Annual healthcare cost trend rates:

Developed based on the most recent published GAO-Getzen trend rate model, version 2020_b.

Short-term: Based on review of the plan's historical trend rates during fiscal years 2019 and 2020, along with industry surveys, separately for non-Medicare and Medicare benefits. Surveys were used to predict short-term future per capita cost increases.

Long-term: Based on the most recent published SAO-Getzen model for trend rates beginning in 2024 and thereafter, based on the plan's long-term inflation assumption and reasonable macro-economic assumptions for the growth of health care expenditures during this period relative to the general economy. See **Table 30** for annual healthcare cost trend rates.

TABLE 30 – Annual Healthcare Cost Trend Rates

Year	Medicare benefits	Non-Medicare benefits
2020	4.90%	6.70%
2021	4.80%	6.60%
2022	4.70%	6.50%
2023	4.60%	6.40%
2024	4.70%	6.20%
2030	5.18%	5.18%
2040	5.18%	5.18%
2050	5.18%	5.18%
2060	4.84%	4.84%
2070	4.38%	4.38%
2075+	4.04%	4.04%

Getzen long run growth factors:

- Inflation: 2.50%
- Real GDP Growth: 1.50%
- Excess Medical Growth: 1.10%

Mortality rates:

RP-2014 Blue Collar Employees projected with Scale MP-2016 with females set forward one year

Participation rates:

- 100% of employees currently electing healthcare coverage are assumed to elect coverage at retirement.
- 35% of employees currently opting out of active health coverage are assumed to elect to enroll in retiree coverages.
- 85% of current and future vested terminated participants will elect health care benefits at age 55 or later.
- Retirees who currently elect to waive their coverage are assumed to remain uncovered in the future.
- 100% of spouses are assumed to elect to continue coverage after retiree's death.
- Current non-Medicare eligible retirees and spouses (if covered) under age 65 who are in a POS/PPO plan are assumed to move to an Indemnity plan if they are Medicare eligible at 65. All others are assumed to remain in their currently elected product type.
- Future retirees are assumed to enroll in the existing plan in the same proportion as the current retiree mix, as shown in **Table 31**. These proportions are established separately for non-Medicare and Medicare coverage for each product type.

TABLE 31 – Future Enrollment Proportions

Plan	Retirement age under 65	Retirement age over 65
Indemnity	28.0%	96.0%
POS/PPO	60.0%	0.0%
HMO	12.0%	4.0%

Significant actuarial assumptions used at the 2019 measurement date are as follows:

2019 Long-term rate of return on investment: 7.25%

Annual healthcare cost trend rates:

Medical: 7.5% decreasing by 0.5% each year to 5.5% in 2023 and 2024 and then decreasing 0.5% each year to an ultimate rate of 4.5% in 2026

Employer group waiver program: 5% per year until 2025, then decrease to 4.5% in 2026

Administrative costs:

4.5%

Mortality rates:

RP-2014 Blue Collar Employees projected with Scale MP-2016 with females set forward one year

Participation rates:

- 100% of all retirees who currently have health care coverage will continue the same coverage, except the following:
 - 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
- Current retirees and spouses - Medicare coverage upon attainment of age 65
- Future retirees - Medicare coverage upon attainment of age 65
- 85% of current and future contingent eligible participants will elect health care benefits at 55 or later
- Actives, upon retirement, take coverage, and are assumed to have the following coverage show in **Table 32:**

TABLE 32 – Future Participation Rates

Plan	Retirement age under 65	Retirement age over 65
Indemnity	25.0%	85.0%
POS/PPO	60.0%	0.0%
HMO	15.0%	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, 2020 and 2019 are summarized in **Tables 33A** and **33B**:

TABLE 33A – Target Asset Allocation as of June 30, 2020

(\$ in thousands)

Asset class	Target allocation	Long-term expected real rate of return
Global equity	39.00%	4.80%
Core fixed income	15.00%	0.70%
Private equity	13.00%	8.20%
Portfolio completion strategies	11.00%	3.20%
Real estate	10.00%	3.50%
Value added fixed income	8.00%	4.20%
Timber / natural resources	4.00%	4.10%
Total target allocation	100.00%	

TABLE 33B – Target Asset Allocation as of June 30, 2019

(\$ in thousands)

Asset class	Target allocation	Long-term Expected Real Rate Of Return
Global equity	39.00%	4.90%
Core fixed income	15.00%	1.30%
Private equity	13.00%	8.20%
Portfolio completion strategies	11.00%	3.90%
Real estate	10.00%	3.60%
Value added fixed income	8.00%	4.70%
Timber / natural resources	4.00%	4.10%
Total target allocation	100.00%	

Discount Rate

The discount rates used to measure the total OPEB liability as of June 30, 2020 and 2019 were 2.28% and 3.63%, respectively. These rates were based on a blend of the Bond Buyer Index rates of 2.21% and 3.51%, respectively, as of the measurement dates June 30, 2020 and 2019 and the long term rate of return on Plan investments of 7.15% and 7.25%, 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 2028. 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, 2020 and 2019.

Sensitivity Analysis of Discount

Table 34 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:

TABLE 34 – Sensitivity Analysis of Discount

As of June 30, 2021 and 2020 (\$ in thousands)

Fiscal year ended	1% Decrease	Current discount rate	1% Increase
June 30, 2021	\$ 934,562	\$ 829,808	\$ 697,550
June 30, 2020	1,185,311	992,991	840,934

Sensitivity Analysis of Healthcare Cost Trend Rate

Table 35 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:

TABLE 35 – Sensitivity Analysis of Healthcare Cost Trend Rate

As of June 30, 2021 and 2020 (\$ in thousands)

Fiscal year ended	1% Decrease	Current discount rate	1% Increase
June 30, 2021	\$ 673,996	\$ 829,808	\$ 1,036,817
June 30, 2020	818,350	992,991	1,223,411



14. Operating Expenses and Interest

Table 36 summarizes the University's operating and interest expenses by natural and functional classification for the year ended June 30, 2021:

TABLE 36 – Operating Expenses and Interest, FY2021

For the year ended June 30, 2021 (\$ in thousands)

Expense / Interest	Compensation and benefits	Supplies and services	Scholarships and fellowships	Depreciation and amortization	Interest	Total
Educational and general						
Instruction	\$ 837,583	\$ 97,210	\$ -	\$ -	\$ -	\$ 934,793
Research	325,462	227,010	-	-	-	552,472
Public service	70,992	19,371	-	-	-	90,363
Academic support	147,941	51,956	-	-	-	199,897
Student services	118,152	23,008	-	-	-	141,160
Institutional support	199,746	114,930	-	-	-	314,676
Operation and maintenance of plant	115,842	111,123	-	-	-	226,965
Depreciation and amortization	-	-	-	300,201	-	300,201
Scholarships and fellowships	-	-	85,500	-	-	85,500
Auxiliary enterprises	120,690	97,680	-	-	-	218,370
Other expenditures						
Independent operations	24,101	29,384	-	-	-	53,485
Public service activities	95,425	165,272	-	-	-	260,697
Total operating expenses	\$ 2,055,934	\$ 936,944	\$ 85,500	\$ 300,201	\$ -	\$ 3,378,579
Interest expense	-	-	-	-	105,469	105,469
Total operating expenses and interest	\$ 2,055,934	\$ 936,944	\$ 85,500	\$ 300,201	\$105,469	\$3,484,048



Table 37 summarizes the University's operating expenses and interest by natural and functional classification for the year ended June 30, 2020:

TABLE 37 – Operating Expenses and Interest, FY2020

For the year ended June 30, 2020 (\$ in thousands)

Expense / Interest	Compensation and benefits	Supplies and services	Scholarships and fellowships	Depreciation and amortization	Interest	Total
Educational and general:						
Instruction	\$ 839,809	\$ 120,739	\$ -	\$ -	\$ -	\$ 960,548
Research	297,775	187,984	-	-	-	485,759
Public service	72,386	11,862	-	-	-	84,248
Academic support	148,926	52,002	-	-	-	200,928
Student services	124,158	33,684	-	-	-	157,842
Institutional support	199,420	103,680	-	-	-	303,100
Operation and maintenance of plant	127,786	114,094	-	-	-	241,880
Depreciation and amortization	-	-	-	288,667	-	288,667
Scholarships and fellowships	-	-	65,469	-	-	65,469
Auxiliary enterprises	166,297	170,200	-	-	-	336,497
Other expenditures						
Independent operations	25,955	30,301	-	-	-	56,256
Public service activities	87,482	168,766	-	-	-	256,248
Total operating expenses	\$ 2,089,994	\$ 993,312	\$ 65,469	\$ 288,667	\$ -	\$ 3,437,442
Interest expense	-	-	-	-	109,186	109,186
Total operating expenses and interest	\$ 2,089,994	\$ 993,312	\$ 65,469	\$ 288,667	\$ 109,186	\$ 3,546,628

15. Unrestricted Net Position

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

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

Table 38 summarizes the University's unrestricted net position as of June 30, 2021 and 2020:

TABLE 38 – Unrestricted Net Position

As of June 30, 2021 and 2020 (\$ in thousands)

Unrestricted resource	2021	2020
Unexpended plant and facilities	\$ 226,882	\$ 222,367
Auxiliary enterprises	106,074	67,456
Education and general	396,715	370,913
Quasi-endowment	475,167	355,374
Stabilization	144,684	124,889
Other unrestricted	84,209	(16,927)
Subtotal	1,433,731	1,124,072
Unfunded portion of pension liabilities	(477,841)	(408,460)
Unfunded portion of postretirement benefits other than pension liabilities	(928,182)	(905,233)
Total unrestricted net position	\$ 27,708	\$ (189,621)

16. Commitments and Contingencies

The University has outstanding purchase commitments under construction contracts and real estate agreements of \$185.6 million and \$111.9 million at June 30, 2021 and 2020, 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, 2021 and 2020 of \$41.2 million and \$42.1 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 workers' 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 \$18.5 million and \$13.3 million as of June 30, 2021 and 2020, 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.

On June 28, 2019, the Authority entered into an agreement to lease property located at 200 Mount Vernon Street in Dorchester, Massachusetts to Bayside Property Owner, LLC ("Bayside"), a Delaware limited liability company. The developer plans to build a mixed-use urban innovation campus at the site. Bayside deposited \$7.0 million into an escrow account on July 2, 2019. In June 2020, Bayside deposited an additional \$1.0 million into an escrow account in order to extend the agreement. In December of 2020, Bayside deposited an additional \$1.0 million to extend the agreement. In June of 2021 Bayside deposited an additional \$1.0 million to extend the agreement. There is \$10.0 million in escrow at this time. These funds will be applied to the initial fixed rent payment at closing. Under the terms of the agreement, the developer, subject to certain contingencies, may enter into a 99-year ground lease for an upfront payment of up to \$235.0 million, with a minimum lease price of \$192.0 million. The developer can extend the term of the agreement up to five consecutive periods of six months each. Additionally, the University has the ability to terminate the agreement at any time subject to the terms of the Agreement to Lease.

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 **Tables 39A, 39B** and **39C** as of June 30, 2021:

TABLE 39A – Condensed Information from the Statements of Net Position, FY2021

As of June 30, 2021 (\$ in thousands)

Condensed information from the Statements of Net Position	Building Authority	Eliminations	WCCC	Eliminations
Capital assets, net	\$ 3,798,946	\$ -	\$ 372,320	\$ -
Other assets	629,090	(70,564)	155,353	(2,544)
Deferred outflows	119,261	-	8,764	-
Total assets and deferred outflows	4,547,297	(70,564)	536,437	(2,544)
Debt, including commercial paper	3,205,465	-	329,798	-
Other liabilities	146,021	(7,331)	24,981	(2,544)
Total liabilities	3,351,486	(7,331)	354,779	(2,544)
Total net position	\$ 1,195,811	\$ (63,233)	\$ 181,658	\$ -

TABLE 39B – Condensed Information from the Statements of Revenues, Expenses, and Changes in Net Position, FY2021

For the year ended June 30, 2021 (\$ in thousands)

Condensed information from the Statements of Revenues, Expenses, and Changes in Net Position	Building Authority	Eliminations	WCCC	Eliminations
Other revenues	\$ 222,786	\$ (96,164)	\$ 80,241	\$ (53,591)
Total revenues	222,786	(96,164)	80,241	(53,591)
Operation and maintenance of capital assets	6,964	(13,266)	25,834	(23,782)
Depreciation	156,373	-	19,769	-
Interest expense	108,800	(83,909)	6,636	-
Other expenses	7,318	(57)	19,619	(29,809)
Total expenses	279,455	(97,232)	71,858	(53,591)
Increase in net position	\$ (56,669)	\$ 1,068	\$ 8,383	\$ -

TABLE 39C – Condensed Information from the Statements of Cash Flows, FY2021

For the year ended June 30, 2021 (\$ in thousands)

Condensed information from the Statements of Cash Flows	Building Authority	Eliminations	WCCC	Eliminations
Net cash provided by operating activities	\$ 117,965	\$ 1,068	\$ 4,976	\$ -
Net cash provided by (used in) investing activities	7,080	-	(51,428)	-
Net cash provided by (used in) financing activities	(248,344)	-	47,861	-
Change in cash and cash equivalents	\$ (123,299)	\$ 1,068	\$ 1,409	\$ -

Condensed information for the University's blended component units, the Building Authority and WCCC, is presented in **Tables 40A, 40B** and **40C** as of June 30, 2020:

TABLE 40A – Condensed Information from the Statements of Net Position, FY2020

As of June 30, 2020 (\$ in thousands)

Condensed Information from the Statements of Net Position	Building Authority	Eliminations	WCCC	Eliminations
Capital assets, net	\$ 3,721,176	\$ -	\$ 332,596	\$ -
Other assets	752,153	(68,481)	184,611	(2,595)
Deferred outflows	125,965	-	6,660	-
Total assets and deferred outflows	4,599,294	(68,481)	523,867	(2,595)
Debt, including commercial paper	3,171,334	-	331,422	-
Other liabilities	175,480	(4,180)	19,170	(2,595)
Total liabilities	3,346,814	(4,180)	350,592	(2,595)
Total net position	\$ 1,252,480	\$ (64,301)	\$ 173,275	\$ -

TABLE 40B – Condensed Information from the Statements of Revenues, Expenses, and Changes in Net Position, FY2020

For the year ended June 30, 2020 (\$ in thousands)

Condensed Information from the Statements of Revenues, Expenses, and Changes in Net Position	Building Authority	Eliminations	WCCC	Eliminations
Other revenues	\$ 295,892	\$ (126,525)	\$ 78,493	\$ (50,800)
Total revenues	295,892	(126,525)	78,493	(50,800)
Operation and maintenance of capital assets	9,470	(11,404)	27,689	(24,108)
Depreciation	150,808	-	20,350	-
Interest expense	110,990	(86,372)	8,003	-
Other expenses	6,609	(3,100)	16,217	(26,692)
Total expenses	277,877	(100,876)	72,259	(50,800)
Increase in net position	\$ 18,015	\$ (25,649)	\$ 6,234	\$ -

TABLE 40C – Condensed Information from the Statements of Cash Flows, FY2020

For the year ended June 30, 2020 (\$ in thousands)

Condensed Information from the Statements of Cash Flows	Building Authority	Eliminations	WCCC	Eliminations
Net cash provided by operating activities	\$ 200,498	\$ (25,649)	\$ 28,714	\$ -
Net cash provided by (used in) investing activities	3,126	-	(17,418)	-
Net cash used in financing activities	(81,047)	-	(9,613)	-
Change in cash and cash equivalents	\$ 122,577	\$ (25,649)	\$ 1,683	\$ -

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

18. Discretely Presented Component Units

As described in Note 1, UMF and UMDF are discretely presented component units. These Foundations are presented in the aggregate on page 24 of these financial statements. Following is supplemental information on UMF's non-agency investments, which is not included in its entirety elsewhere in these financial statements.

This note excludes agency funds held with the Foundation that are not the University's in the amount of \$28.4 million and \$24.4 million as of June 30, 2021 and 2020. UMF's investment portfolio represents approximately 97.4% 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

UMF's disclosure regarding investments in debt and equity securities is captured in Note 4. Additional disclosure related to UMF's non-agency investments is as noted below.

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, 2021 and 2020, 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.

Table 41 presents the unrated debt investments at fair value by credit quality of UMF's non-agency investment portfolio as of June 30, 2021:

TABLE 41 – Debt Investments by Credit Quality, FY2021

As of June 30, 2021 (\$ in thousands)

Debt securities	2021	S&P rating
U.S. Treasury securities	\$ 47,550	AAA
Total debt securities	\$ 47,550	

Table 42 presents the unrated debt investments at fair value by credit quality of UMF's non-agency investment portfolio as of June 30, 2020:

TABLE 42 – Debt Investments by Credit Quality, FY2020

As of June 30, 2020 (\$ in thousands)

Debt securities	2020	S&P rating
U.S. Treasury securities	\$ 32,198	AAA
Total debt securities	\$ 32,198	

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.

Table 43 presents the fair value by investment maturity of the unrated debt investments of UMF's non-agency investment portfolio as of June 30, 2021:

TABLE 43 – Debt Investments by Maturity, FY2021

As of June 30, 2021 (\$ in thousands)

Debt securities	2021	Investment maturity
U.S. Treasury securities	\$ 47,550	1 to 5 years
Total debt securities	\$ 47,550	

Table 44 presents the fair value by investment maturity of the unrated debt investments of UMF's non-agency investment portfolio as of June 30, 2020:

TABLE 44 – Debt Investments by Maturity, FY2020

As of June 30, 2020 (\$ in thousands)

Debt securities	2020	Investment maturity
U.S. Treasury securities	\$ 32,198	1 to 5 years
Total debt securities	\$ 32,198	



Fair Value Measurement — UMF's fair value measurement disclosure is captured in Note 4. Additional disclosure related to UMF's non-agency investments is as noted in **Table 45**.

This table summarizes the fair value of UMF's non-agency investments by type as of June 30, 2021.:

TABLE 45 – Fair Value Hierarchy of Non-Agency Investments, FY2021

As of June 30, 2021 (\$ in thousands)

Non-agency investments	Measured at NAV	Investments classified in the fair value hierarchy Level 1	Investments classified in the fair value hierarchy Level 2	Investments classified in the fair value hierarchy Level 3	Total
Money market funds	\$ -	\$ 45,536	\$ -	\$ -	\$ 45,536
Debt securities					
U.S. Treasury securities	-	47,550	-	-	47,550
Total debt securities	-	47,550	-	-	47,550
Equity securities					
Domestic equities	-	85,997	-	554	86,551
International equities	-	30,690	-	-	30,690
Total equity securities	-	116,687	-	554	117,241
Alternative investments					
Multi-strategy hedge funds:					
Equity	255,591	-	-	-	255,591
Long/short	167,262	-	-	-	167,262
Fixed income	35,282	-	-	-	35,282
Absolute return	17,588	-	-	-	17,588
Real assets	8,061	-	-	-	8,061
Private equity	71,503	-	-	-	71,503
Private debt	17,644	-	-	-	17,644
Private real estate	8,558	-	-	-	8,558
Annuity & life income pooled funds	3,470	-	-	-	3,470
Total alternative investments	584,959	-	-	-	584,959
Total investments	\$ 584,959	\$ 209,773	\$ -	\$ 554	\$ 795,286

Table 46 summarizes the fair value of UMF's non-agency investments by type as of June 30, 2020 (\$ in thousands).

TABLE 46 – Fair Value Hierarchy of Non-Agency Investments, FY2020

As of June 30, 2020 (\$ in thousands)

Non-agency investments	Measured at NAV	Investments classified in the fair value hierarchy Level 1	Investments classified in the fair value hierarchy Level 2	Investments classified in the fair value hierarchy Level 3	Total
Money market funds	\$ -	\$ 63,877	\$ -	\$ -	\$ 63,877
Debt securities					
U.S. Treasury securities	-	32,198	-	-	32,198
Total debt securities	-	32,198	-	-	32,198
Equity securities					
Domestic equities	-	75,023	-	-	75,023
International equities	-	34,513	-	-	34,513
Total equity securities	-	109,536	-	-	109,536
Alternative investments					
Multi-strategy hedge funds					
Equity	147,388	-	-	-	147,388
Long/short	119,095	-	-	-	119,095
Fixed income	28,061	-	-	-	28,061
Absolute return	25,550	-	-	-	25,550
Real assets	7,679	-	-	-	7,679
Private equity	36,775	-	-	-	36,775
Private debt	11,347	-	-	-	11,347
Private real estate	10,578	-	-	-	10,578
Annuity & life income pooled funds	2,989	-	-	-	2,989
Total alternative investments	389,462	-	-	-	389,462
Total investments	\$ 389,462	\$ 205,611	\$ -	\$ -	\$ 595,073



Table 47 presents unfunded commitments, redemption frequency and notice period for non-agency investments that have been valued using NAV as a practical expedient as of June 30, 2021.

TABLE 47 – Alternative Non-Agency Investments, FY2021

As of June 30, 2021 (\$ in thousands)

Alternative investments	NAV	Unfunded commitments	Redemption terms	Notice period	Redemption restrictions
Multi-strategy hedge funds					
Equity	\$ 255,591	\$ -	Daily to quarterly	1-90 days	Lock-up provisions range from none to 2 years.
Long/short	167,262	-	Quarterly to annual	45-90 days	Lock-up provisions range from none to 2 years.
Fixed income	35,282	-	Quarterly to semi-annual	*	No lock-up restrictions
Absolute return	17,588	-	Quarterly to annual	45-65 days	No lock-up restrictions
Real assets	8,061	-	Annual	90 days	No lock-up restrictions
Private equity and venture capital	71,503	14,498	Closed end funds	**	Not redeemable
Private debt	17,644	11,657	Closed end funds	**	Not redeemable
Private real estate	8,558	1,716	Closed end funds	**	Not redeemable
Annuity & life income pooled funds	3,470	-	Daily		No lock-up restrictions
Total	\$ 584,959	\$ 27,871			

* Includes fund(s) that restrict redemptions such that redemptions are at the sole discretion of the Fund. Redemption terms require 60 to 90 days notice.

** UMF has made commitments to various private equity and venture debt 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

Table 48 presents unfunded commitments, redemption frequency and notice period for non-agency investments that have been valued using NAV as a practical expedient as of June 30, 2020.

TABLE 48 – Alternative Non-Agency Investments, FY2020

As of June 30, 2020 (\$ in thousands)

Alternative investments	NAV	Unfunded commitments	Redemption terms	Notice period	Redemption restrictions
Multi-strategy hedge funds					
Equity	\$ 147,388	\$ -	Daily to quarterly	1-90 days	Lock-up provisions range from none to 2 years.
Long/short	119,095	-	Quarterly to annual	45-90 days	Lock-up provisions range from none to 3 years.
Fixed income	28,061	-	Quarterly	*	Lock-up provisions range from none to 1 year.
Absolute return	25,550	-	Quarterly to annual	45-65 days	No lock-up restrictions
Real assets	7,679	-	Annual	90 days	No lock-up restrictions
Private equity and venture capital	36,775	15,464	Closed end funds	**	Not redeemable
Private debt	11,347	16,131	Closed end funds	**	Not redeemable
Private real estate	10,578	1,808	Closed end funds	**	Not redeemable
Annuity & life income pooled funds	2,989	-	Daily		No lock-up restrictions
Total	\$ 389,462	\$ 33,403			

* Includes fund(s) that restrict redemptions such that redemptions are at the sole discretion of the Fund. Redemption terms require 60 to 90 days notice.

** UMF has made commitments to various private equity and venture debt 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

19. Subsequent Events

On September 2, 2021 the University announced the transfer of control of Brandman University to UMass. This launched UMass Global, a nonprofit affiliate of UMass that will deliver expanded online education opportunities to adult learners. For purposes of financial reporting, beginning in FY2022, UMass Global will be presented as a blended component unit.

On September 7, 2021 the University received an unrestricted donation of \$175.0 million from Morningside Foundation established by the family of T.H. Chan. As a result, the University Medical School was renamed UMass Chan Medical School. References to the Medical School in this document reflect the new name.

For purposes of determining the effects of subsequent events on these financial statements, management has evaluated events subsequent to June 30, 2021 and through December 15, 2021, the date on which the financial statements were available to be issued.



Required Supplementary Information (unaudited)

For the last ten years* (\$ in thousands)

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

Schedule of the University's Proportionate Share of the Net Pension Liability — Massachusetts State Employees' Retirement System

Based on the measurement date, June 30

Liability	2020	2019	2018	2017	2016	2015	2014
University's proportion of the net pension liability	3.76%	3.60%	3.09%	3.28%	3.12%	3.59%	3.49%
University's proportionate share of the net pension liability	\$ 644,879	\$ 526,739	\$ 409,319	\$ 420,234	\$ 429,871	\$ 408,418	\$ 237,134
University's covered-employee payroll	\$1,264,971	\$1,247,098	\$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	50.98%	42.24%	32.94%	35.96%	37.18%	35.83%	22.35%
Plan fiduciary net position as a percentage of total pension liability	62.48%	66.28%	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

Contributions	2021	2020	2019	2018	2017	2016	2015
Contractually required contribution	\$ 31,495	\$ 40,617	\$ 35,843	\$ 28,292	\$ 25,618	\$ 22,386	\$ 22,386
Contributions in relation to the contractually required contribution	(31,495)	(40,617)	(35,843)	(28,292)	(25,618)	(22,386)	(22,386)
Contribution deficiency (excess)	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
University's covered-employee payroll	\$1,216,914	\$1,264,971	\$1,247,098	\$1,242,525	\$1,168,661	\$1,156,082	\$1,139,719
Contributions as a percentage of covered-employee payroll	2.59%	3.21%	2.87%	2.28%	2.19%	1.94%	1.96%

Schedule of the University's Proportionate Share of the Net Other Postemployment Benefits (OPEB) Liability — State Retirees' Benefit Trust

Based on the measurement date, June 30

Liabilities	2020	2019	2018	2017
University's proportion of the net OPEB	4.01%	5.43%	4.82%	4.67%
University's proportionate share of the net OPEB	\$ 829,808	\$ 992,991	\$ 895,669	\$ 817,357
University's covered-employee payroll	\$ 1,264,971	\$ 1,247,098	\$ 1,242,525	\$ 1,168,661
University's proportionate share of the net OPEB as a percentage of its covered-employee payroll	65.60%	79.62%	72.08%	69.94%
Plan fiduciary net position as a percentage of total OPEB liability	6.40%	6.96%	6.01%	4.80%

Schedule of the University's Contributions — State Retirees' Benefit Trust

For the fiscal year ended June 30

Contributions	2021	2020	2019	2018
Contractually required contribution	\$ 16,538	\$ 21,040	\$ 26,137	\$ 21,421
Contributions in relation to the contractually required contribution	(16,538)	(21,040)	(26,137)	(21,421)
Contribution deficiency (excess)	\$ -	\$ -	\$ -	\$ -
University's covered-employee payroll	\$ 1,216,914	\$ 1,264,971	\$ 1,247,098	\$ 1,242,525
Contributions as a percentage of covered-employee payroll	1.36%	1.66%	2.10%	1.72%

This page is intentionally left blank

This page is intentionally left blank





University of Massachusetts
Amherst • Boston • Dartmouth • Lowell • Medical • Law • Online

Controller's Office University of Massachusetts President's Office 333 South Street, Suite 450, Shrewsbury, MA

APPENDIX D
SUMMARY OF LEGAL DOCUMENTS

[Intentionally Left Blank]

SUMMARY OF CERTAIN PROVISIONS OF THE PROJECT TRUST AGREEMENT

The pledge and assignment made by the Authority in the Project Trust Agreement secures only bonds issued under the Project Trust Agreement and not bonds issued under any other trust agreement.

The following is a summary of certain provisions of the Project Trust Agreement. Such summary does not purport to be complete, and reference is made to the Project Trust Agreement for a complete statement of its provisions.

Definitions

Capitalized words or terms used in this Summary of Certain Provisions of the Project Trust Agreement and not defined shall have the meaning given to the applicable word or term elsewhere in this Official Statement.

“Account” shall mean any account created pursuant to the Agreement.

“Accreted Amount” shall mean, as of the date of computation and with respect to any Capital Appreciation Bond, the original principal amount of such Capital Appreciation Bond upon the initial issuance of the Series of Bonds of which such Bond is a part plus the interest accrued on such Bond compounded as provided in the applicable Series Resolution.

“Agreement,” “Trust Agreement” or *“Project Trust Agreement”* shall mean the Trust Agreement dated as of November 1, 2000 between the Authority and State Street Bank and Trust Company, as Trustee (which was succeeded as Trustee by U.S. Bank National Association and which has been succeeded as Trustee by U.S. Bank Trust Company, National Association), and each agreement supplemental thereto.

“Annual Series Requirement” as applied to a Series of Guaranteed Bonds shall mean one-twelfth of the largest amount of Principal and Interest Payments due on account of the Outstanding Guaranteed Bonds of such Series of Bonds in any calendar year after the calendar year in which such Series of Guaranteed Bonds was issued.

“Appropriations” shall mean amounts made available for expenditure by the University Trustees pursuant to appropriations or other spending authorizations in the Commonwealth’s annual operating budgets, including without limitation supplementary and deficiency budgets and any tuition retention authorization, and amounts otherwise available for expenditure by the University Trustees.

“Architect” as applied to a Project shall mean the person or firm, if any, employed by the Authority as architect for such Project.

“Authorized Officer” shall mean the Chairman, Vice Chairman, Secretary-Treasurer, Assistant Secretary-Treasurer or Executive Director of the Authority or any other person so designated by resolution of the Authority.

“Bond” or *“Bonds”* shall mean any bond or bonds or all bonds, as the case may be, issued under the Agreement and authorized by a Series Resolution.

“*Business Day*” shall mean any day other than a Saturday, Sunday or day on which the New York Stock Exchange or banking institutions are authorized or required by law or executive order to be closed for commercial banking purposes in New York or Massachusetts, or in any city in which is located the designated corporate trust office of the Trustee.

“*Capital Appreciation Bond*” shall mean any Bond so identified in the Series Resolution applicable thereto and on which interest is compounded and is payable only at maturity or upon earlier redemption of such Bond.

“*Code*” shall mean the Internal Revenue Code of 1986, as amended. References to provisions of the Code include applicable successor provisions of the Code or applicable successor provisions of any recodification of the internal revenue laws of the United States.

“*Commonwealth*” shall mean The Commonwealth of Massachusetts.

“*Commonwealth Guaranty*” shall mean the guaranty by the Commonwealth pursuant to the Enabling Act of the payment of principal of and interest on Bonds so guaranteed. “*Commonwealth Guaranty*” shall not include a Credit Facility.

“*Contract*” shall mean the Second Amended and Restated Master Contract for Financial Assistance, Management and Services dated as of May 1, 2019 by and among the Authority, the University and the Commonwealth, as such Contract may be supplemented from time to time to make additional Projects and Authority bonds or notes subject to the terms thereof.

“*Cost of the Project*” as applied to a Project shall mean and include, without intending hereby to limit or restrict any definition of such term under the Enabling Act (as in effect on the date of the Agreement and as it may be amended from time to time), the cost, whenever incurred, of carrying out the Project and placing it in operation, including, but not limited to, the cost of construction of new buildings or structures and the cost of acquiring, adding to, altering, enlarging, leasing, reconstructing, remodeling and doing other work in or upon or respecting existing buildings and structures, if any, included in the Project, the cost of providing and installing in or in respect of any such building or structure furniture, furnishings, machinery, equipment, facilities, approaches, driveways, walkways, parking areas, planting and landscaping, the cost of leasing or otherwise acquiring land, other property, rights, easements and interests acquired for or in respect to any of the foregoing, the cost of demolishing or removing any buildings or structures on land so acquired or interests in which are so acquired and the cost of site preparation; the cost of architectural and engineering services, plans, specifications, surveys, estimates of cost and of revenues; other expenses necessary or incident to determining the feasibility or practicability of the Project; administrative expense, legal expense and such other expenses, including, but not limited to, the fees and expenses (including reasonable attorneys' fees and expenses) of the Trustee, fees and expenses of financial advisers and other experts, printing and advertising costs and the like, taxes and other governmental charges lawfully levied or assessed, the cost of preliminary architectural and engineering services, plans, specifications, surveys, estimates of cost and revenues, other expenses necessary or incident to determine the feasibility or practicability of other projects for which written requests shall have been made by authority of the University Trustees and premiums for policies of insurance, fidelity bonds and the like covering property and risks of and related to the Project, as may be necessary or incident

to the aforesaid, to the financing or refinancing thereof and to the issuance therefor of notes or Bonds or both under the provisions of the Enabling Act and interest for such period as the Authority may deem advisable but ending not later than eighteen months after the University Trustees shall have accepted the project for occupancy on money borrowed to pay all or part of the Cost of the Project.

“*Counsel*” shall mean an attorney or firm of attorneys admitted to practice law in the highest court of any state in the United States of America or in the District of Columbia.

“*Counsel's Opinion*” shall mean an opinion signed by an attorney or firm of attorneys (who may be general or special counsel to the Authority or bond counsel to the Authority) selected by the Authority and satisfactory to the Trustee.

“*Credit Facility*” shall mean any instrument, including without limitation a letter of credit, guaranty, standby loan commitment, insurance policy or surety bond, or any combination thereof, under which the Authority or the Trustee is entitled to receive moneys for the payment of one or more of principal of, Redemption Price of and interest on any Bond, fees and expenses of the Trustee, amounts payable from any reserve fund established pursuant to the Agreement, amounts for the replenishment of any reserve fund established pursuant to the Agreement, the purchase price of Bonds tendered pursuant to the applicable Series Resolution and any other amounts which the Authority or the Trustee is entitled to receive under such instrument. “Credit Facility” shall not include the Commonwealth Guaranty or Derivatives.

“*Current Expenses*” as applied to a Project shall mean and include (a) the fees and expenses (including reasonable attorneys’ fees and expenses) of the Trustee under the Agreement and of any escrow or like agent appointed by the Authority with respect to the payment of bonds or Bonds issued to finance the Project or to refund any bonds or Bonds issued for such purpose or for the purpose of refunding other refunding bonds or Bonds related to such Project, exclusive of such fees and expenses as are included in the Cost of the Project; (b) the rent, not included in the Cost of the Project, payable by the Authority under any lease of property included in the Project, as such lease may be amended or extended; (c) premiums (or accruals on account thereof), not included in the Cost of the Project, for policies of insurance maintained in force by the Authority with respect to the Project (or a proportionate part of such premiums in the event that a single policy or policies of insurance shall cover property or risks pertaining to more than one Project (or shall include one or more Other Projects) of the Authority); and (d) that portion of the general operating and administrative expenses of the Authority as the Authority shall deem properly allocable to the Project, which general operating and administrative expenses shall include, without limiting the generality of the foregoing, any amount required to be rebated by the Authority (or by any other entity with respect to moneys held by the Authority) to the United States of America by the Code or other applicable law and not provided by other moneys of the Authority available therefor, legal and other professional expenses of the Authority, expenses incurred under Section 207 of the Agreement and reasonable payments to governmental or other benefit or retirement funds for the benefit of its employees, provided, however, that the total amount which may be so allocated in any year shall not exceed such limitation, if any, as may be imposed by the Contract pertaining to the Project; but such term shall not include (x) Maintenance, Repair and Operating Expenses; (y) any reserves for extraordinary maintenance or repair of the Project or any allowance for depreciation, or (z) any deposits or transfers to the

credit of the special funds created by the Agreement and designated “Debt Service Fund,” “Rate Stabilization Fund,” “Section 10 Reserve Fund” and “Property Fund” or to the credit of any reserve fund created pursuant to the Agreement by a Series Resolution.

“*Current Interest Bond*” shall mean any Bond other than a Capital Appreciation Bond.

“*Debt Service Reserve Fund*” shall mean any fund established by a Series Resolution to provide a reserve for the payment of one or more of principal of, Sinking Fund Installments, premium and interest on a Series of Bonds and the purchase price of Bonds of such Series tendered pursuant to the applicable Series Resolution that is not a Section 10 Reserve Fund.

“*Debt Service Reserve Requirement*” shall mean, with respect to a Debt Service Reserve Fund, the Debt Service Reserve Requirement established for such Debt Service Reserve Fund by the Series Resolution creating such Debt Service Reserve Fund.

“*Derivative*” shall mean contracts that derive their value from the value, or changes in value, of another financial instrument or index and shall include without limitation (a) interest rate swaps, swaptions, forward swaps, interest rate caps, interest rate floors, options, puts, calls and other contracts to hedge payment, rate spread or similar exposure, (b) forwards and (c) contracts to exchange cash flows or a series of payments. “Derivative” shall not include a Credit Facility.

“*Enabling Act*” shall mean Chapter 773 of the Acts of 1960 of the Commonwealth, as amended.

“*Engineer*” as applied to a Project shall mean the person or firm, if any, employed by the Authority as engineer for such Project.

“*Expendable Fund Balance*” (see Unrestricted Net Assets).

“*Facilities Trust Agreement*” shall mean the Trust Agreement dated as of December 1, 2000 between the Authority and State Street Bank and Trust Company (which has been succeeded as Trustee by U.S. Bank National Association).

“*Favorable Opinion of Bond Counsel*” shall mean, with respect to any action relating to the Bonds the occurrence of which requires such an opinion, a written legal opinion of bond counsel to the Authority addressed to the Authority, the Trustee, the Insurer and the Remarketing Agent to the effect that such action is permitted under the applicable Series Resolution and the Trust Agreement and will not jeopardize the exclusion of interest on the Bonds from gross income for federal income tax purposes or the exemption from taxation of the Bonds, their transfer and the income therefrom, including any profit made on the sale thereof, provided by the Enabling Act.

“*Fiscal Year*” shall mean the twelve-month period beginning on each July 1, or any other twelve-month period designated by the Authority from time to time as its fiscal year.

“*Fitch*” shall mean Fitch Ratings, Inc., a corporation organized and existing under the laws of the State of Delaware, its successors and assigns, and, if such corporation shall be dissolved or liquidated or shall no longer perform the functions of a securities rating agency, “*Fitch*” shall be deemed to refer to any other nationally recognized securities rating agency designated by the Authority by notice to the Trustee, with the consent of the Insurer.

“*Fixed Rate Bond*” shall mean a Bond bearing interest at a rate fixed to the stated maturity of such Bond, including any such Bond the interest rate on which has been converted to a rate fixed to the maturity thereof from a rate that is subject to adjustment from time to time.

“*Fund*” shall mean any Fund created pursuant to the Agreement.

“*Guaranteed Bonds*” shall mean Bonds that are guaranteed by the Commonwealth Guaranty.

“*interest*” unless otherwise indicated, shall mean with respect to any Bond (a) the interest on any Current Interest Bond and (b) the interest on any Capital Appreciation Bond, which interest is expressed as the difference between the applicable Accreted Amount on any applicable date and the principal amount of such Capital Appreciation Bond on the date of initial issuance of the Series of Bonds of which such Capital Appreciation Bond is a part.

“*interest rate,*” “*rate of interest,*” “*bear interest at the rate*” or other like expressions shall mean the rate of interest on any Current Interest Bond and the rate (expressed as a yield to maturity) at which interest accrues on any Capital Appreciation Bond.

“*Investment Obligations*” shall mean and include any of the following: (a) direct obligations of, or obligations the payment of the principal of and interest on which are unconditionally guaranteed by, the United States of America; (b) obligations of the Federal National Mortgage Association, the Government National Mortgage Association, the Federal Financing Bank, the Federal Intermediate Credit Banks, Federal Banks for Cooperatives, Federal Land Banks, Federal Home Loan Banks, Farmers Home Administration and Federal Home Loan Mortgage Corporation, or of any other agency or corporation which has been or is hereafter created pursuant to an act of the Congress of the United States as an agency or instrumentality thereof; (c) interest-bearing time deposits or certificates of deposit of banking institutions or trust companies (including the Trustee) organized under the laws of any state of the United States or any national banking association, provided that such deposits or certificates shall be continuously and fully (i) insured by the Federal Deposit Insurance Corporation or any successor thereof, or (ii) secured by obligations described in clauses (a) and (b) having a market value, exclusive of accrued interest, at least equal to the aggregate amount of such deposits or certificates; (d) any of the securities described in clauses (a) and (b) which are subject to repurchase agreements with any bank or trust company organized under the laws of any state of the United States or any national banking association; (e) any other investment in which funds of the Authority are permitted from time to time to be invested by the Enabling Act; (f) the Massachusetts Municipal Depository Trust; and (g) any subcategories of any of the investments described in clauses (a), (b), (c), (d), (e) or (f) above that may be required by the issuer of a Credit Facility.

“Maintenance, Repair and Operating Expenses” as applied to a Project or Other Project shall mean and include any reasonable and necessary expenses for services, facilities, supplies, materials and utilities necessary for or incident to the maintenance, repair and operation of the Project or Other Project and the facilities and services provided thereby, billing and collecting fees, rents, rates and other charges for the use of the Project or Other Project or any room or accommodation therein or facility or service provided thereby and keeping books of account with respect to such maintenance, repair and operation. The term may also, if the Contract with respect to a Project or Other Project shall provide for application of Revenues therefrom to pay for the following costs, include the costs incurred in maintaining those activities which, and associations and organizations which, or the activities of which, are a part of the activities at the University and are subject to regulation by the University Trustees and which take place, use or are performed in a building or structure included in such Project or Other Project or are a part of a general program of the University including such activities, associations or organizations which take place, use or are performed in such building or structure. The term shall also include reserves for the foregoing expenses and costs if and to the extent that the Contract in effect with respect to a Project, if any, or a resolution of the Authority with respect to a Project or Other Project provides for such reserves. The term shall not include Current Expenses.

“MDFFA Financing Agreements” means those certain financing agreements entered into between the University and the Massachusetts Health and Educational Facilities Authority and its successor, the Massachusetts Development Finance Agency (“HEFA”) in connection with the issuance of bonds by HEFA for the benefit of the University or portions thereof.

“Moody’s” shall mean Moody’s Investors Service, Inc., a corporation organized and existing under the laws of the State of Delaware, its successors and assigns and, if such corporation shall be dissolved or liquidated or shall no longer perform the functions of a securities rating agency, *“Moody’s”* shall be deemed to refer to any other nationally recognized securities rating agency designated by the Authority by notice to the Trustee, with the consent of the Insurer.

“Multi-Series Debt Service Reserve Fund” shall have the same meaning as the term Debt Service Reserve Fund, except that a Multi-Series Debt Service Reserve Fund shall secure more than one Series of Bonds (and any one or more of such Series so secured may be issued at different times or under different Series Resolutions from one or more other such Series so secured).

“Multi-Series Debt Service Reserve Requirement” shall mean, with respect to a Multi-Series Debt Service Reserve Fund, the Multi-Series Debt Service Reserve Requirement established for such Multi-Series Debt Service Reserve Fund by the Series Resolution creating such Multi-Series Debt Service Reserve Fund.

“Non-Guaranteed Bonds” shall mean Bonds that are not guaranteed by the Commonwealth Guaranty.

“Other Project” shall have the same meaning as the word “Project” except that Other Project shall apply to a project with respect to which a Series of Bonds shall not have been issued under the Agreement.

“Outstanding,” when used with reference to Bonds, shall mean, as of any date, Bonds theretofore or thereupon being authenticated and delivered under the Agreement except: (a) any Bonds cancelled by the Trustee or surrendered to the Trustee for cancellation at or prior to such date; (b) Bonds (or portions of Bonds) for the payment or redemption of which moneys, equal to the principal amount or Redemption Price thereof, as the case may be, with interest to the date of maturity or redemption date, shall be held in trust under the Agreement and set aside for such payment or redemption (whether at or prior to the maturity or redemption date), provided that if such Bonds (or portions of Bonds) are to be redeemed, notice of such redemption shall have been given in accordance with the Agreement or provision satisfactory to the Trustee shall have been made for the giving of such notice; (c) Bonds in lieu of or in substitution for which other Bonds shall have been authenticated and delivered pursuant to the Agreement; and (d) Bonds deemed to have been paid as provided in the Agreement.

“Person” shall include associations, corporations and other entities, including public bodies, as well as natural persons.

“Pledged Funds” shall mean one or both of (a) Trust Funds of the University pledged to secure (i) all or a portion of one or more Series of Bonds and (ii) the payment of other amounts specified in the Contract or other document by which such pledge is made as secured by such Trust Funds, and (b) Appropriations pledged to secure (i) all or a portion of one or more Series of Bonds and (ii) the payment of other amounts specified in the Contract or other document by which such pledge is made as secured by such Appropriations.

“principal” and *“principal amount,”* unless otherwise indicated, shall mean with respect to any Bond (a) the principal amount of any Current Interest Bond and (b) the principal amount on the date of initial issuance of the applicable Series of any Capital Appreciation Bond (and after such date of initial issuance the word “principal” and the term “principal amount” shall mean with respect to a Capital Appreciation Bond the portion of the applicable Accreted Amount not constituting interest). Without limiting the generality of the foregoing, when the word “principal” or the term “principal amount” is followed by a reference to the Accreted Amount, the word “principal” or the term “principal amount” shall mean the principal amount of any Current Interest Bond.

“principal” and the term *“principal amount”* shall mean, with respect to any obligation other than a Bond, any amount constituting principal, however expressed, of such obligation.

“Principal and Interest Payments” as applied to a Series of Bonds for a particular time period or as of a particular date shall mean the principal amount of and interest on the Bonds of such Series Outstanding which is due to be paid during such period or on such date, such amount to be determined in accordance with the following when applicable: if the Authority shall by the resolution authorizing the issue of a Series of Bonds authorize the issue of all or any of such Bonds as Term Bonds, such principal amount of Bonds as will be paid or prepaid from a Sinking Fund Installment shall be treated as if it matured on the date such Sinking Fund Installment is required to be made and not on the maturity date of such Bonds.

“Principal Office” or *“principal office”* shall mean, when used with respect to the Trustee, the principal corporate trust office of the Trustee in Boston, Massachusetts, or, if the

Trustee shall no longer perform its duties under the Trust Agreement at such office, the corporate trust office where at the applicable time the Trustee performs its duties under the Trust Agreement.

“Project” or *“Projects”* shall mean the construction of new buildings or structures and the acquisition, addition to, alteration, enlargement, reconstruction, remodeling and other work in or upon or respecting existing buildings or structures, the provision and installation therein or in respect thereof of furnishings, furniture, machinery, equipment, facilities, approaches, driveways, walkways, parking areas, planting and landscaping, the acquisition of land, other property, rights, easements and interests acquired for or in respect to any thereof, the demolition or removal of any buildings or structures, including buildings or structures owned by the Commonwealth, on land so acquired or interests in which are so acquired and site preparation, with respect to which a Series of Bonds shall be issued under the Agreement. The word shall also mean whenever appropriate such land, buildings or structures and such appurtenances.

“purchaser” shall mean the person or persons, one or more, named as the purchaser or purchasers of a Series of Bonds in the Series Resolution and any successors to its or their business. If a named or successor purchaser shall discontinue its business without a successor, the word thereafter shall mean the remaining purchaser or purchasers, whether named or successor.

“Record Date” shall mean, for each Series of Bonds, such date or dates as may be set forth as a Record Date in the applicable Series Resolution.

“Redemption Price” shall mean, (a) with respect to any Current Interest Bond, the principal amount thereof, plus the applicable premium, if any, payable upon redemption thereof pursuant to this Agreement and the applicable Series Resolution, and (b) with respect to any Capital Appreciation Bond, the Accreted Amount thereof on the redemption date, plus the applicable premium, if any, payable upon redemption thereof pursuant to the Agreement and the applicable Series Resolution.

“Registered Owner” shall mean the person shown from time to time as registered owner of a Bond in the books kept by the Trustee as Bond Registrar.

“Revenues” as applied to a Project shall mean (a) all moneys received or receivable by the Authority in payment of fees, rents, rates and other charges for the use and occupancy of, and for the services and facilities provided by, the Project including, without limitation, the moneys which the University Trustees are required to remit to the Authority or the Trustee under a Contract, and all other income derived by the Authority from the operation, ownership or control thereof. The word Revenues shall also include any other revenues or Secondary Revenues pledged as security for the Bonds. The word Revenues shall not include (a) Pledged Funds, (b) any amount paid or payable under the Commonwealth Guaranty or (c) any amount paid or payable under a Credit Facility or a Derivative.

“Secondary Revenues” shall mean all revenues received by the Authority from Other Projects or other property financed by bonds issued by the Authority under the Enabling Act under a trust agreement other than the Agreement which revenues are pledged under such trust

agreement, upon and after the payment in full of all bonds, including refunding bonds, issued under such trust agreement and of all other sums, if any, then payable to the trustee under the provisions of the trust agreement securing such bonds, or upon deposit by the Authority with such trustee of funds or securities sufficient and in trust to pay, or to provide for the payment when due, of such amounts.

“*Section 10 Reserve Fund*” shall mean the Section 10 Reserve Fund established by the Agreement.

“*Section 19C Payments*” shall mean any amount required by Section 19C of the Enabling Act to be paid by the Authority to the Treasurer and Receiver-General of the Commonwealth from Revenues.

“*Senior Bonds*” shall mean all Bonds of each Series that is a Senior Series.

“*Senior Series*” shall mean any Series designated as a Senior Series in the applicable Series Resolution.

“*Series*” shall mean the Bonds designated as a Series in a Series Resolution.

“*Sinking Fund Installment*” shall mean with respect to Bonds of any particular Series and maturity and any payment date on such Bonds, the principal amount thereof required to be redeemed prior to maturity on such payment date pursuant to the provisions of the applicable Series Resolution.

“*S&P*” shall mean Standard & Poor’s Global Ratings, its successors and assigns, and, if such corporation shall be dissolved or liquidated or shall no longer perform the functions of a securities rating agency, “*S&P*” shall be deemed to refer to any other nationally recognized securities rating agency designated by the Authority by notice to the Trustee.

“*Special Record Date*” shall have the meaning set forth in the Agreement.

“*Specific Revenue Projects*” shall mean such projects as designated by the Authority in the Contract for which specific fees will be set by the Authority.

“*Spendable Cash and Investments*” shall mean, effective May 1, 2019, the sum of University cash and investments less debt service reserve funds, plus University of Massachusetts Foundation, Inc. cash and investments plus pledges receivable reported in permanently restricted net assets, less University permanently restricted net assets, less University of Massachusetts Foundation, Inc. permanently restricted net assets; provided that in the event of future modifications to the University’s financial statements that provide for a different presentation of such information, the University may further modify the definition of Spendable Cash and Investments.

“*Subordinate Series*” shall mean any Series designated as a Subordinate Series in the applicable Series Resolution.

“Term Bonds” shall mean Bonds subject to redemption prior to maturity by application of Sinking Fund Installments.

“Trustee” shall mean the Trustee appointed under the Agreement and its successor or successors.

“Trust Funds” shall mean any funds held by the University Trustees as trust funds under the provision of Section 11 of Chapter 75 of the Massachusetts General Laws and any funds administered by the University Trustees as gifts, grants or trusts under the provisions of clause (e) of the fifth paragraph of Section 1A of Chapter 75 of the Massachusetts General Laws.

“University” shall mean the University of Massachusetts continuing under Chapter 75 of the Massachusetts General Laws.

“University Trustees” shall mean the board of trustees established by and existing under Section 1A of Chapter 75 of the Massachusetts General Laws for the University or, if such board of trustees shall hereafter be abolished, the board, body, commission or other entity succeeding to the principal functions thereof or to which the powers given by said Chapter 75 with respect to the University shall be given by law.

“Unrestricted Net Assets” (previously known as *Expendable Fund Balance*) shall mean the accumulation of excess unrestricted revenues over expenditures with respect to the University for all prior years and for each current year from the unrestricted current fund, the quasi endowment fund, the unexpended unrestricted plant fund and the unrestricted renewal and replacement plant fund (as of May 1, 2019, the term Unrestricted Net Assets shall mean *“Spendable Cash and Investments”*).

“Variable Rate Bond” shall mean a Bond the interest rate on which is subject to adjustment from time to time and shall include but not be limited to a so-called “multi-modal” Bond, i.e. a Bond that provides that the intervals at which the interest rate on such Bond is adjusted may be changed from time to time.

[Remainder of this page intentionally left blank]

PLEDGE AND ASSIGNMENT OF THE AUTHORITY PURSUANT TO THE AGREEMENT

Pursuant to the Agreement, the Authority assigns and pledges to the Trustee and grants to the Trustee a security interest in:

(a) all rights of the Authority, including such rights under any Contract, to receive all Revenues pledged under the Agreement;

(b) all moneys paid or payable for deposit in or on deposit in any Fund, Account or subaccount created under the Agreement, all investments received or receivable for deposit in or on deposit in any Fund, Account or subaccount created under the Agreement and all interest or other income on such investments paid or payable for deposit in or on deposit in any Fund, Account or subaccount created under the Agreement and all rights of the Authority to receive any such moneys, investments and interest or other income (except that moneys and securities on deposit in the Rebate Fund created under the Agreement and all interest or other income received thereon are held for the benefit of the United States of America and not for the benefit of the Registered Owners and do not secure the Bonds), subject to the application of amounts held in such Funds, Accounts and Subaccounts for the purposes and in the manner set forth in the Agreement;

(c) subject to clause (a) and clause (b) under “Particular Covenants - Payment of Lawful Charges” below, (i) the Revenues from each Project and (ii) the Revenues, including without limitation Secondary Revenues, derived from Other Projects and from such other property of the Authority, if any, as the Authority may hereafter designate by resolution; provided, however, that the assignment and pledge made by the Agreement of and the security interest granted by the Agreement in such Revenues from each Project and such Revenues, including Secondary Revenues, derived from Other Projects does not include any part thereof to be used for Current Expenses or reserves therefor, Maintenance, Repair and Operating Expenses or reserves therefor or Section 19C Payments or reserves therefor; and provided further that the assignment and pledge of and security interest in any such Secondary Revenues shall be, first, for (A) the reimbursement to the Commonwealth of any amounts theretofore paid by the Commonwealth on account of principal of or interest on any Guaranteed Bonds or other bonds of the Authority guaranteed by the Commonwealth under Section 10 of the Enabling Act and (B), if and only if the Commonwealth has made no such payments or has been reimbursed therefor, to the payment of the principal, interest and premium, if any, at maturity or upon redemption or purchase, for (1) all Bonds issued under the Agreement, or (2) all bonds of the Authority issued other than under the Agreement or (3) all such Bonds and bonds of the Authority, as the Authority may determine, at the time any Revenues from an Other Project become Secondary Revenues, by resolution approved by the University Trustees with a view to achieving reasonable uniformity in charges for like rooms, accommodations and services at the University, to the extent provided in the Agreement; and

(d) (i) all Pledged Funds paid or payable and all rights of the Authority to receive such Pledged Funds, (ii) all amounts paid or payable under the Commonwealth Guaranty with respect to Guaranteed Bonds and all rights of the Authority to receive such amounts, (iii) all amounts paid or payable under any Credit Facility and all rights of the Authority to receive such amounts and (iv) all amounts paid or payable under any Derivative and all rights of the Authority to receive such amounts.

The assignment and pledge made by the Agreement and the security interest granted by the Agreement shall be for the equal and proportionate benefit and security of all the present and future Registered Owners of the Bonds issued and to be issued under the Agreement, without preference, priority or distinction as to lien or otherwise, except as otherwise provided in the Agreement, of any one Bond over any other Bond, and that the Revenues, including any Secondary Revenues, pledged as security for the Bonds shall immediately be subject to the lien of such pledge for the benefit of the Trustee and the Registered Owners of the Outstanding Bonds as provided in the Agreement without any physical delivery thereof to the Trustee or any further act.

BONDS PERMITTED TO BE ISSUED UNDER THE AGREEMENT; VARIOUS
PROVISIONS OF BONDS

(a) Any bonds the Authority is authorized by the Enabling Act to issue may be issued under the Agreement. The Bonds of each Series may be Fixed Rate Bonds or Variable Rate Bonds, as set forth in the applicable Series Resolution.

(b) As provided in the applicable Series Resolution:

(i) Bonds may be issued as Guaranteed Bonds or Non-Guaranteed Bonds, but Guaranteed Bonds and Non-Guaranteed Bonds shall not be issued as part of the same Series;

(ii) some or all of the Bonds of a Series may be secured by one or more Credit Facilities, and any such Credit Facility may be replaced;

(iii) Bonds may be issued as Current Interest Bonds or Capital Appreciation Bonds, and a Series of Bonds may combine both Current Interest Bonds and Capital Appreciation Bonds;

(iv) a Series of Bonds may be (A) a Senior Series, which Senior Series shall not be subordinate to any other Series and shall be issued on a parity with each other, if any Senior Series previously, contemporaneously or subsequently issued, or (B) a Subordinate Series;

(v) a Subordinate Series shall be subordinate to all Senior Series, may be of any level of subordination to other Subordinate Series previously, contemporaneously or subsequently issued and shall be on a parity with each other, if any, Subordinate Series of the same level previously, contemporaneously or subsequently issued; a Subordinate Series shall bear as part of its designation (in the form provided in the Agreement) whichever of the following is applicable: (A) "Subordinate Series Level 2," which Subordinate Series shall be (1) subordinate to each other, if any, Senior Series previously, contemporaneously or subsequently issued, (2) on a parity with each, if any, Subordinate Series Level 2 previously, contemporaneously or subsequently issued and (3) superior to each other, if any, Subordinate Series of a lower level previously, contemporaneously or subsequently issued, (B) "Subordinate Series Level 3," which Subordinate Series shall be (1) subordinate to each other, if any, Senior Series and Subordinate Series Level 2

previously, contemporaneously or subsequently issued, (2) on a parity with each other, if any, Subordinate Series Level 3 previously, contemporaneously or subsequently issued and (3) superior to each other, if any, Subordinate Series of a lower level previously, contemporaneously or subsequently issued or (C) “Subordinate Series Level 4” or “Subordinate Series Level 5” and so on in ascending numerical order depending on the level or subordination of such Subordinate Series, and each such Subordinate Series shall be subordinate to, on a parity with and superior to other Series depending on its level of subordination in accordance with the pattern described in (A) and (B) above;

(vi) a Subordinate Series may be any level of subordination, and a Subordinate Series of a given level may be issued after or before one or more Series of higher levels of subordination or one or more Senior Series are issued (and it is not necessary that any such Series of any higher level of subordination or any Senior Series shall ever be issued), but any such Subordinate Series shall not be subordinate to any Series but each Senior Series and each Subordinate Series of a higher level of subordination previously, contemporaneously or subsequently issued, (e.g., a Subordinate Series Level 4 may be issued after or before the issuance of a Senior Series or any or all of a Subordinate Series Level 2, Level 3 or Level 5, but a Subordinate Series Level 4 shall not be subordinated to any Series except Senior Series and Subordinate Series Level 2 and Subordinate Series Level 3);

(vii) the interest on a Series of Bonds may be excludable from or includable in gross income for federal income tax purposes;

(viii) a Series of Bonds may be secured by a Debt Service Reserve Fund or a Multi-Series Debt Service Reserve Fund, and all Guaranteed Bonds shall be secured by the Section 10 Reserve Fund as provided in the Agreement or by whatever reserve fund may be required by the Enabling Act as in existence at the time of the issuance of the applicable Series of Guaranteed Bonds; provided, that if at the time a Series of Guaranteed Bonds is issued under the Agreement the Enabling Act does not require any reserve fund for such Series, such Series shall not be required to be (but may be) secured by a reserve fund;

(ix) a Series of Bonds may be secured by Pledged Funds;

(x) the Authority may enter into one or more Derivatives with respect to a Series of Bonds in connection with the initial issuance thereof; provided, however, that the Authority may also enter into Derivatives with respect to a Series of Bonds after the initial issuance thereof if bond counsel to the Authority delivers an opinion to the effect that such action is permitted by the Enabling Act, would not adversely affect the interest of any Registered Owner and would not adversely affect the exclusion of the interest on the Bonds from gross income for federal income tax purposes; and

(xi) more than one Series of Bonds may be issued under a single Series Resolution,

(c) With respect to the Series of Bonds on a parity with each other:

If on any date one or more of principal, Sinking Fund Installments and interest are due on such Series of Bonds moneys in the applicable subaccount in the Interest Account, the Principal Account or the Sinking Fund Account are insufficient to pay any such amount in full, taking account of any amounts deposited in any such subaccount from the Property Fund or the Optional Redemption Account as permitted by the Agreement, but without regard to any amount drawn from any Debt Service Reserve Fund, Multi-Series Debt Service Reserve Fund or Section 10 Reserve Fund to pay all or a portion of such deficiency or any amount drawn under a Credit Facility to pay all or a portion of such deficiency, moneys in any such subaccount in which a deficiency exists shall be applied to the applicable amount due from such subaccount pro rata, without regard to any amounts to be applied to such deficiency with respect to one or more such Series from any Debt Service Reserve Fund, Multi-Series Debt Service Reserve Fund, Section 10 Reserve Fund or Credit Facility; provided, however, that (a) any deficiency in any such subaccount resulting from any amount due under a Derivative not being paid in full when due shall be allocated only to the payment due on the Series of Bonds to which such Derivative pertains and shall not cause a deficiency in the payment due on any other Series of Bonds, (b) any moneys that would have been applied in accordance with such pro rata application to any Bonds secured by a direct pay Credit Facility that in fact pays all principal of, Sinking Fund Installments and interest then due on such Bonds shall be applied to reimburse the issuer of such direct pay Credit Facility for (but not in excess of) the amount paid thereunder and (c) any moneys that would have been applied in accordance with such pro rata application to Bonds with respect to which all or a portion of the principal, Sinking Fund Installments or interest due on such Bonds was paid pursuant to a Derivative shall be applied pro rata to the payment of (i) any amount due from or on account of the Authority pursuant to such Derivative for any such payment of principal, Sinking Fund Installment or interest and (ii) the principal, Sinking Fund Installments or interest on such Bonds not paid pursuant to such Derivative.

(d) Each Guaranteed Bond shall have the Commonwealth Guaranty endorsed thereon in the form set forth in the applicable Series Resolution and duly executed by the manual or facsimile signature of an officer of the University Trustees and shall be entitled to the benefit of the pledge by the Commonwealth of its full faith and credit for its guaranty of the payment of the principal of and interest on such Bonds as the same become due and payable.

(e) As to any Bond, the Registered Owner thereof shall be deemed and regarded as the absolute owner thereof for all purposes and, except as otherwise provided by law, no one of the Authority, the Trustee or the Bond registrar shall be affected by any notice to the contrary. Payment of or on account of the principal or Redemption Price of and interest on any Bond shall be made only to or upon the order of the Registered Owner, registered assigns or the legal representative of the Registered Owner. All such payments shall be valid and effectual to satisfy and discharge the liability upon such Bond including the interest thereon to the extent of the sum or sums so paid.

(f) All Bonds paid, redeemed or purchased, either at or before maturity, shall be delivered to the Trustee when such payment, redemption or purchase is made, and such Bonds shall thereupon be cancelled. All Bonds cancelled under any of the provisions of the Agreement shall be held by the Trustee until the Agreement shall be discharged; provided, however, that Bonds so cancelled may at any time be destroyed by the Trustee, if the Trustee shall execute a

certificate of destruction in duplicate describing the Bonds so destroyed, and one executed certificate shall be filed with the Executive Director of the Authority and the other executed certificate shall be retained by the Trustee.

REDEMPTION OF BONDS

Redemption of Bonds of any Series

If and to the extent that the Authority shall so provide in a Series Resolution, the Bonds of any Series authorized thereunder may be made redeemable, by application of Sinking Fund Installments or otherwise, at the option of the Authority, prior to their respective maturities either in whole or in part, on any date or dates as may be fixed in such Series Resolution, from any moneys that may be made available for such purpose, at the Redemption Price or Redemption Prices fixed by the Authority in such Series Resolution, together with the interest accrued thereon to the date fixed for redemption.

No optional redemption of less than all of the Outstanding Bonds may be made unless all interest accrued on all Outstanding Bonds to the redemption date shall have been paid or set aside for payment.

If the moneys made available from time to time for the purpose of redeeming Bonds (other than by Sinking Fund Installments) are not sufficient to redeem all of the Outstanding Bonds at the Redemption Prices then in effect, they shall be applied to Bonds of such Series, maturity and tenor as the Authority, in its discretion, may select, unless otherwise provided in any Series Resolution. If less than all the Bonds of a particular Series, maturity and tenor are to be redeemed, the particular Bonds and portions of Bonds of such Series, maturity and tenor to be redeemed shall be selected at random by the Trustee in such manner as the Trustee in its discretion may determine; provided, however, that any Bond may be redeemed in a principal amount equal to the minimum denomination in which it may be issued under the applicable Series Resolution or any integral multiple thereof and that, in selecting Bonds for redemption, the Trustee shall treat each Bond as representing that number of Bonds which is obtained by dividing the principal amount of each Bond by such minimum denomination.

Redemption Notice

The Trustee shall give notice of the redemption of any Bonds, specifying the date of redemption, the portions of the principal amounts thereof to be redeemed, the Redemption Price and any other matters specified in the applicable Series Resolution, by mailing, postage prepaid, not more than such number of days nor less than such number of days prior to the redemption date as shall be set forth in the applicable Series Resolution, copies thereof to the Registered Owners of any Bonds, or portions thereof, to be redeemed and to such other persons and at such times as may be set forth in the applicable Series Resolution; provided, however, that failure of any Registered Owner to receive such notice so mailed to such Registered Owner or any defect therein shall not affect the validity of proceedings for the redemption of any Bonds, and failure to mail such notice to any Registered Owner entitled thereto shall not affect the validity of the proceedings for the redemption of any Bonds as to which no such failure occurred. In case any Bond is to be redeemed in part only, the notice of redemption which relates to such Bond shall

state also that on or after the redemption date, upon surrender of such Bond, a Bond or Bonds in aggregate principal amount equal to the unredeemed portion of such Bond will be issued described below under “Partial Redemptions.”

Effect of Calling for Redemption

Notice having been given in the manner and under the conditions described above under “Redemption Notice,” the Bonds or portions of Bonds so called for redemption shall, on the redemption date designated in such notice, become and be due and payable at the Redemption Price of such Bonds or portions of Bonds on such date. On the date so designated for redemption, notice having been given and moneys for payment of the Redemption Price of and interest accrued to the date of redemption on the Bonds so called for redemption being available therefor, interest on such Bonds shall cease to accrue, such Bonds or portions of Bonds shall cease to be entitled to any lien, benefit or security under the Agreement and the Registered Owners of such Bonds or portions of Bonds shall have no rights in respect thereof except to receive payment of the Redemption Price thereof upon presentation and surrender of the same and interest accrued thereon to the date of redemption and, to the extent described above in “Redemption Notice,” to receive Bonds for any unredeemed portions of Bonds.

Partial Redemptions

In case part but not all of an Outstanding Bond shall be selected for redemption, the Registered Owner thereof or the attorney or legal representative of such Registered Owner shall present and surrender such Bond to the Trustee for payment of the Redemption Price of the principal amount thereof so called for redemption, and the Authority shall execute (and, if any such Bond is a Guaranteed Bond cause the guaranty of the Commonwealth to be endorsed on) and the Trustee shall authenticate and deliver to or upon the order of such Registered Owner or the attorney or legal representative of such Registered Owner, without charge therefor, for the unredeemed portion of the principal amount of the Bond so surrendered, a Bond or Bonds aggregating in principal amount said unredeemed portion.

ESTABLISHMENT AND APPLICATION OF FUNDS AND ACCOUNTS

Funds and Accounts

The Agreement establishes the following Funds, Accounts and subaccounts to be held by the Trustee:

- (1) Note Payment Fund
- (2) Construction Fund
- (3) Preliminary Expense Fund
- (4) Revenue Fund
- (5) Debt Service Fund:

Interest Account (and within the Interest Account a single subaccount with respect to all Senior Bonds, and if and when the first Subordinate Series of a given level is issued, a single subaccount with respect to all Bonds of any Subordinate Series of such level)

Principal Account (and within the Principal Account a single subaccount with respect to all Senior Bonds, and if and when the first Subordinate Series of a given level is issued, a single subaccount with respect to all Bonds of any Subordinate Series of such level)

Sinking Fund Account (and within the Sinking Fund Account a single subaccount with respect to all Senior Bonds, and if and when the first Subordinate Series of a given level is issued, a single subaccount with respect to all Bonds of any Subordinate Series of such level)

Optional Redemption Account

(6) Section 10 Reserve Fund

(7) Property Fund:

General Account

Insurance Proceeds Account

Capital Improvements Reserve Account (and within the Capital Improvements Reserve Account a separate subaccount for each Project or each group of Projects with respect to which the Authority by certificate of an Authorized Officer directs from time to time that a separate subaccount be established within the Capital Improvements Reserve Account)

Multi-Purpose Reserve Account

(8) Rate Stabilization Fund

(9) Rebate Fund

Other Funds, Accounts and subaccounts (including without limitation Accounts within the Funds established under the Agreement as set forth in the preceding paragraph and subaccounts within the Accounts established under the Agreement as set forth in the preceding paragraph) may from time to time be established under the Agreement as directed by a Series Resolution or other resolution of the Authority, and moneys shall be deposited in and disbursed from such Funds, Accounts and Subaccounts as provided in such Series Resolution or other resolution.

Without limiting the generality of the previous paragraph, a Series Resolution under which is issued one or more Series of Bonds subject to tender for purchase may establish an Account (a “Purchase Account”) for each such Series into which moneys (which moneys may but need not include moneys in the Revenue Fund) shall be deposited as provided in such Series Resolution to be applied to the payment of the purchase price of Bonds of the applicable Series tendered as provided in the Series Resolution.

If a Series Resolution so provides, moneys (which moneys may but need not include Revenues) may be deposited in a Purchase Account prior to being deposited in the Revenue Fund or, if already on deposit in the Revenue Fund, prior to being deposited in the Debt Service Fund or in other Funds and Accounts as described below in “Revenue Fund.” Moneys in a Purchase Account representing amounts received under a Credit Facility or under a Derivative or the proceeds of the remarketing of Bonds tendered for purchase as provided in the applicable Series Resolution shall be applied to pay the purchase price only of Bonds of the Series to which the applicable Purchase Account pertains. Other moneys in a Purchase Account shall be applied as follows: if, on any date on which such moneys in a Purchase Account are to be applied to pay the purchase price of Bonds of the Series to which such Purchase Account obtains, any one or more other Purchase Accounts pertaining to Bonds of the same level (e.g., Senior Series, Subordinate Series Level 2) does not contain sufficient moneys to pay the purchase price due on such date of Bonds to which such one or more other Purchase Accounts pertain, such moneys in all Purchase Accounts pertaining to Bonds of the same level shall be applied pro rata to the payment of the purchase price of such Bonds due on such date. In addition, if and to the extent permitted by the applicable Series Resolution, moneys in any Purchase Account may be applied to reimburse the issuer of a Credit Facility for amounts received by the Trustee pursuant to such Credit Facility to be applied to the payment of the purchase price upon tender as provided in the applicable Series Resolution of Bonds for which such Purchase Account was established or to pay any amount due from or on account of the Authority under a Derivative for payments made pursuant to such Derivative for the payment of the purchase price upon tender as provided in the applicable Series Resolution of Bonds for which such Purchase Account was established.

Note Payment Fund

For each Series of Bonds the proceeds of which are to be applied in whole or in part to the payment of notes of the Authority, deposits to the credit of the Note Payment Fund shall be made as required by the provisions of the applicable Series Resolution. Monies so deposited in the Note Payment Fund shall be held by the Trustee in trust and shall be applied to the payment of the notes referred to in the Series Resolution and, pending such application, shall be subject to a lien and charge in favor of the holders of the Bonds Outstanding under the Agreement until paid out or transferred as provided in the Agreement. Upon payment in full of such notes, the Trustee shall withdraw any excess monies then on deposit in the Note Payment Fund and deposit or disburse the same as provided in the applicable Series Resolution.

Construction Fund

For each Series of Bonds the proceeds of which are to be applied in whole or in part to the Cost of a Project (or for moneys held under any other trust agreement entered into by the Authority to be applied to the Cost of a Project) there may be established within the Construction

Fund a separate Account for each such Project (or for two or more or all of such Projects) to the credit of which such deposits shall be made as are required by the provisions of the applicable Series Resolution or other resolution of the Authority or as designated in a certificate of an Authorized Officer. Any moneys received, other than as Revenues, from any other source, including but not limited to all grants and loans received from the federal government or any agency thereof for or in aid of the planning, construction or financing of any such Project and all contributions of money, property, labor or other things of value available under the terms of any such grant or contribution, for the carrying out of such Project may also be deposited to the credit of the appropriate Account within the Construction Fund (or a subaccount therein) or otherwise be held in trust and be disbursed and applied, all as the Authority may determine.

The moneys in each such Account within the Construction Fund shall be held by the Trustee in trust and shall be applied to the payment of the Cost of the Project and, pending such application, shall be subject to a lien and charge in favor of the Registered Owners of the Outstanding Bonds of the Series the proceeds of which are on deposit in such Account until paid out or transferred as provided in the Agreement. The Agreement contains various requirements for disbursement of moneys from Accounts or subaccounts within the Construction Fund, including without limitation requisitions containing certifications with respect to the use of such moneys in accordance with applicable requirements of the Code.

The Trustee shall upon receipt of written instructions from an Authorized Officer (which instructions and any prior modification thereof may be modified from time to time by further written instructions of an Authorized Officer delivered to the Trustee) and without requisition from the Authority or other further authority than is contained herein, on such date or dates as may be specified in the most recent such instructions delivered by such Authorized Officer, withdraw from any Account within the Construction Fund such amounts as may therein be specified to be withdrawn on the applicable date for payment of interest on the Bonds then Outstanding and shall deposit such amount to the credit of the applicable subaccount in the Interest Account.

Preliminary Expense Fund

For each Series of Bonds from the proceeds of which an amount is specified in the Series Resolution authorizing such Series of Bonds to be applied to the cost of architectural and engineering services, plans, specifications, surveys, estimates of cost and of revenues and other expenses necessary or incident to determine the feasibility or practicability of projects for which written requests shall have been made by authority of the University Trustees, the amount so specified shall be deposited to the credit of the Preliminary Expense Fund. The moneys in the Preliminary Expense Fund shall be held by the Trustee in trust and, pending the application thereof, shall be subject to a lien and charge in favor of the Registered Owners of the Bonds from the proceeds of which such deposits were made until paid out or transferred as provided in the Agreement.

Upon receipt of a certificate of an Authorized Officer directing that all or a portion of the moneys in the Preliminary Expense Fund be transferred to any Account or Accounts with the Construction Fund, accompanied by an opinion of bond counsel to the Authority to the effect that such transfer is permitted by the Enabling Act and will not adversely affect the exclusion of

interest on the Bonds from gross income for federal income tax purposes, the Trustee shall withdraw moneys then on deposit to the credit of the Preliminary Expense Fund in the amounts specified in such certificate and deposit the same to the credit of the appropriate Account or Accounts within the Construction Fund in the amount or amounts specified in such certificate.

Upon receipt of a certificate of an Authorized Officer stating that all or a portion of the moneys in the Preliminary Expense Fund are not needed either for the purposes specified in the first paragraph under "Preliminary Expense Fund" or for transfer to any Account or Accounts within the Construction Fund and directing the withdrawal of such moneys from the Preliminary Expense Fund for the payment or deposit for or other application to the purposes specified in such certificate, and upon receipt of an opinion of bond counsel to the Authority to the effect that the application of the moneys to be withdrawn to the purposes set forth in such certificate is permitted by the Enabling Act and will not adversely affect the exclusion of interest on the Bonds from gross income for federal income tax purposes, the Trustee shall withdraw from then the Preliminary Expense Fund the amount specified in such certificate and pay, deposit or apply the same as specified in such certificate.

Completion of a Project

When the construction of a Project the Cost of which shall have been paid in part or in whole from the proceeds of Bonds shall have been completed, or when for any other reason amounts on deposit in a particular Account within the Construction Fund are no longer needed to pay for the Cost of one or more Projects for which it was established, written notice thereof shall be promptly given to the Trustee by a certificate of an Authorized Officer. Any such notice with respect to the completion of a Project shall state the date of completion of the Project, the cost of the Project and the amount, if any, to be reserved for the payment of any remaining part of the Cost of the Project and the Cost of other Projects to be paid from such Account, and shall be accompanied by a Counsel's Opinion to the effect that there are no uncanceled mechanics', laborers', contractors' or materialmen's liens on any property pertaining to the Project in existence or on file in any public office where the same should be filed in order to be valid liens against any part of such property, and that, in the opinion of the signer, the time within which such liens can be created or filed has expired.

Upon receipt of such notice and, if applicable, such Counsel's Opinion, the balance in the applicable Account within the Construction Fund, not reserved by the Authority for the payment of any remaining part of the Cost of the Project or Projects, shall be withdrawn by the Trustee and applied or deposited as follows: (a) at the Authority's request, as set forth in such certificate, deposited in the amount set forth in such certificate to the credit of any other Account or Accounts existing within the Construction Fund for one or more Projects (including such an Account established simultaneously with the giving of such notice) which the applicable Series of Bonds was issued to finance, if the Authority shall by a certificate of an Authorized Officer certify that the amounts then on deposit in such other Account or Accounts are not sufficient to pay in full the projected costs of the applicable Project or Projects and if such certificate is accompanied by an opinion of bond counsel to the Authority to the effect that such deposit of such moneys is permitted by the Enabling Act and will not adversely affect the exclusion of the interest on the Bonds from gross income for federal income tax purposes; (b) deposited or applied in the amounts and for the purposes as otherwise set forth in such certificate, provided

that such certificate is accompanied by an opinion of bond counsel to the Authority to the effect that the deposit or application of such moneys as provided in such certificate is permitted by the Enabling Act and will not adversely affect the exclusion of the interest on the Bonds from gross income for federal income tax purposes and (c) so much thereof as is not deposited pursuant to (a) or (b) shall be deposited to the credit of the Optional Redemption Account.

Revenue Fund

All Revenues received by the Trustee shall be deposited in the Revenue Fund immediately upon receipt by the Trustee; provided, however, that Revenues designated in writing by an Authorized Officer to be applied to Current Expenses, Maintenance, Repair and Operating Expenses or Section 19C Payments may be deposited in any account of the Authority designated in writing by such Authorized Officer. The moneys in the Revenue Fund shall be held by the Trustee in trust and applied as provided below and, pending such application, so much thereof as is not held for Current Expenses or reserves therefor, Maintenance, Repair and Operating Expenses or reserves therefor or Section 19C Payments or reserves therefor shall be subject to a lien and charge in favor of the Registered Owners of the Bonds issued and Outstanding under the Agreement.

Payments from the Revenue Fund shall be made at any time for Current Expenses, Maintenance, Repair and Operating Expenses or Section 19C Payments pursuant to requisitions as provided in the Agreement.

On the fifteenth day of each month (or if such fifteenth day is not a business day, on the next succeeding business day), and again on the last business day of each month preceding an Interest Payment Date, and on each other date provided in any Series Resolution, the Trustee shall withdraw from the Revenue Fund all moneys held for the credit of the Revenue Fund on the day of such withdrawal in excess of the amount required on the date of such withdrawal as a reserve for Current Expenses, Maintenance, Repair and Operating Expenses and Section 19C Payments. The amount so required as a reserve for Current Expenses, Maintenance, Repair and Operating Expenses and Section 19C Payments shall be as directed by the Authority but not more than the excess of (a) the amount stated in the then current Annual Schedule for such Current Expenses, Maintenance, Repair and Operating Expenses and Section 19C Payments filed by the Authority with the Trustee as described below in "Particular Covenants - Annual Schedule of Projected Expenses," over (b) the aggregate of the payments made by the Trustee from the Revenue Fund on account of such amounts during the period commencing with the July 1 next preceding the applicable withdrawal pursuant to the preceding sentence and ending with the last day of the month preceding such withdrawal.

The Trustee shall deposit the moneys withdrawn from the Revenue Fund as aforesaid to the credit of the Accounts and Funds as follows:

First, with respect to the Senior Bonds, in the following order of priority:

(a) to the credit of the subaccount established for Senior Bonds in the Interest Account in the Debt Service Fund so much, or the whole if required, of the moneys so withdrawn from the Revenue Fund, until the amount on deposit in the such subaccount, plus any

amount to be withdrawn from any Construction Fund as described above in the last paragraph in “Construction Fund” and deposited in such subaccount to be applied to the payment of interest due on any Series of Senior Bonds on the next following Interest Payment Date, shall equal (i) the interest payable on such Interest Payment Date on all Senior Bonds then Outstanding and (ii) the aggregate of all other amounts, if any, required to be on deposit in such subaccount on such Interest Payment Date by each Series Resolution containing such a requirement applicable to Outstanding Senior Bonds; provided, however, that no deposit need be made to the credit of such subaccount with respect to any amount of such interest payable pursuant to a Derivative;

(b) to the credit of the subaccount established for Senior Bonds in the Principal Account in the Debt Service Fund so much, or the whole if required, of the balance of the moneys so withdrawn from the Revenue Fund until the amount on deposit in such subaccount, (A) if the withdrawal is made during a six-month period next preceding a November 1, shall equal (i) the aggregate principal amount of Senior Bonds maturing on such November 1, plus (ii) one-half of the aggregate principal amount of Senior Bonds maturing on the next May 1, plus (iii) the aggregate of all other amounts, if any, required to be on deposit in such subaccount on such November 1 by each Series Resolution containing such a requirement applicable to Outstanding Senior Bonds, or (B) if the withdrawal is made during a six-month period preceding a May 1, shall equal (i) the aggregate principal amount of Senior Bonds maturing on such May 1, plus (ii) one-half of the aggregate principal amount of Senior Bonds maturing on the next November 1, plus (iii) the aggregate of all other amounts, if any, required to be on deposit in such subaccount on such May 1 by each Series Resolution continuing such a requirement applicable to Outstanding Senior Bonds;

(c) To the credit of the subaccount established for Senior Bonds in the Sinking Fund Account in the Debt Service Fund so much, or the whole if required, of the balance of moneys so withdrawn from the Revenue Fund until the amount, determined after taking into account as provided in the Agreement the principal amount of Term Bonds constituting Senior Bonds theretofore purchased, on deposit to the credit of such subaccount, (A) if the withdrawal is made during a six-month period next preceding a November 1, shall equal (i) the Sinking Fund Installments on Senior Bonds due on such November 1, plus (ii) one-half of the Sinking Fund Installments on Senior bonds due on the next May 1, plus (iii) the aggregate of all other amounts, if any required to be on deposit in such subaccount on such November 1, by each Series Resolution continuing such a requirement applicable to Outstanding Senior Bonds, or (B) if the withdrawal is made during a six-month period preceding a May 1, shall equal (i) the Sinking Fund Installments of Senior Bonds due on such May 1, plus (ii) one-half of the Sinking Fund Installments due on Senior Bonds on the next November 1, plus (iii) the aggregate of all other amounts, if any, required to be on deposit in such subaccount on such May 1 by each Series Resolution continuing such a requirement applicable to Outstanding Senior Bonds;

(d) in each calendar year commencing with the first full calendar year succeeding the calendar year in which the first Series of Guaranteed Bonds constituting Senior Bonds shall be issued under the Agreement, to the credit of the Section 10 Reserve Fund so much, or the whole if required, of the balance of the moneys so withdrawn from the Revenue Fund until the amount withdrawn and deposited to the credit of the Section 10 Reserve Fund in such calendar year shall equal the aggregate of the Annual Series Requirements in effect for such

calendar year in respect of all Series of Guaranteed Bonds constituting Senior Bonds Outstanding on the first day of such calendar year, plus, or, at the option of the Authority, minus, as the case may be, the deficiency or excess of the amount on deposit to the credit of the Section 10 Reserve Fund on the first day of such calendar year, including in such amount interest accrued but unpaid on Investment Obligations in which such amount may then be invested, under or over the aggregate of all Annual Series Requirements in effect for prior calendar years in respect of such Guaranteed Bonds constituting Senior Bonds. No deposit need be made with respect to any Annual Series Requirement or portion thereof deposited pursuant to the applicable Series Resolution out of the proceeds of a Series of Guaranteed Bonds constituting Senior Bonds. If there shall have been any prior application of moneys held in the Section 10 Reserve Fund to the payment of principal of or Sinking Fund Installments or interest on Guaranteed Bonds constituting Senior Bonds, the amount of any deficiency in the amount thereafter on deposit to the credit of the Section 10 Reserve Fund resulting from such application shall be taken into account in computing the amount required to be deposited to the credit of the Section 10 Reserve Fund in any calendar year thereafter only to the extent that it is, in the judgment of the Authority, practicable to do so. The Annual Series Requirement as to any Series of Guaranteed Bonds shall be in effect for and only for the twelve calendar years next succeeding the calendar year in which Guaranteed Bonds of such Series were initially issued; for each calendar year thereafter on the first day of which Guaranteed Bonds of such Series shall be Outstanding, the aggregate of such prior Annual Series Requirements shall be included in the measure of the amount required to be on deposit to the credit of the Section 10 Reserve Fund with respect to such calendar year but no additional deposit shall be required with respect to such prior Annual Series Requirements except as may be required to restore any deficiency as aforesaid. If on the first day of any calendar year the amount on deposit in the Section 10 Reserve Fund equals or exceeds the sum of (i) the aggregate of all Annual Series Requirements in effect for prior calendar years, plus (ii) the Annual Series Requirements for such calendar year, in each case in respect of all Series of Guaranteed Bonds constituting Senior Bonds of which Guaranteed Bonds are Outstanding, no deposit need be made under this clause (d) with respect to Guaranteed Bonds constituting Senior Bonds;

(e) pro rata to the credit of each Debt Service Reserve Fund securing Senior Bonds and each Multi-Series Debt Service Reserve Fund securing Senior Bonds, (i) with respect to amounts other than amounts to replenish any withdrawal made for the payment of principal or Redemption Price of or interest on any Senior Bonds, so much, or the whole if required, of the balance of the moneys so withdrawn from the Revenue Fund until the amount deposited in each thereof in the fiscal year in which the applicable withdrawal from the Revenue Fund is made equals the amount, if any, required to be so deposited in such fiscal year by the one or more applicable Series Resolutions, and (ii) with respect to amounts to replenish any withdrawal made from any thereof for the payment of principal or Redemption Price of or Interest on any Senior Bonds, so much, or the whole if required, of the balance of the moneys so withdrawn from the Revenue Fund, until the amount on deposit in each thereof from which any withdrawal for such purpose has been made, equals the applicable Debt Service Reserve Requirement or Multi-Series Debt Service Reserve Requirement, as the case may be, of each thereof;

Second, with respect to the Bonds, if any, of all Subordinate Series Level 2 (“Level 2 Bonds”), in the order of priority provided in First above (except that in depositing moneys under

this Second, the term “Level 2 Bonds” shall be substituted for the term “Senior Bonds” in First above; and

Third, with respect to the Bonds, if any, of all Subordinate Series Level 3 (“Level 3 Bonds”), in the order of priority provided in First above (except that in depositing moneys under this third, the term “Level 3 Bonds” shall be substituted for the term “Senior Bonds” in First above;

and so on for the Bonds, if any, of each other Subordinate Series, in descending order, (i.e. Subordinate Series Level 4, and then Subordinate Series Level 5 and so on), substituting in each case the appropriate designation of the Bonds (e.g. “Level 4 Bonds” or “Level 5 Bonds”) on account of which the deposit is being made for the term “Senior Bonds” in First above.

After deposits have been so made with respect to all Series of Bonds issued under the Agreement as provided above, the balance of moneys, if any, withdrawn from the Revenue Fund as aforesaid shall be deposited to the credit of the following Funds and Accounts in the following order of priority;

(f) so much, or the whole if required, of the balance of moneys so withdrawn from the Revenue Fund, to the credit of such Account or Accounts in the Property Fund as may have been established for any reserve or reserves mentioned below in clause (d) in “Particular Covenants - Rate Covenant,” pro rata until the amount deposited in each such Account in the fiscal year in which the applicable withdrawal is made from the Revenue Fund equals the amount, if any, set forth in a certificate of an Authorized Officer to be deposited in such Account or Accounts during such fiscal year;

(g) so much, or the whole if required, of the balance of moneys so withdrawn from the Revenue Fund, to the credit of each other Account in the Property Fund (other than the Multi-Purpose Reserve Account), pro rata until the amount on deposit in each such Account in the fiscal year in which the applicable withdrawal is made from the Revenue Fund equals the amount, if any, set forth in a certificate of an Authorized Officer to be on deposit in such Account during such fiscal year;

(h) so much, or the whole, if required, of the balance of the moneys so withdrawn from the Revenue Fund, to the credit of the Multi-Purpose Reserve Account, until the amount deposited in such Account in the fiscal year in which the applicable withdrawal is made from the Revenue Fund equals the amount, if any, set forth in a certificate of an Authorized Officer to be deposited in such Account during such fiscal year; provided, that the Authority may also deposit in the Multi-Purpose Reserve Account from time to time any other moneys of the Authority not required to be otherwise deposited;

(i) to the credit of the Rate Stabilization Fund, so much, or the whole if required, of the balance of moneys so withdrawn from the Revenue Fund as may be specified from time to time in a certificate of an Authorized Officer; and

(j) the remainder, if any, to the credit of the Optional Redemption Account.

Debt Service Fund

The moneys in each Account in the Debt Service Fund shall be held in trust and applied as provided in the Agreement and in the applicable Series Resolution and, pending such application, are pledged to, and shall be subject to a lien and charge in favor of, the Registered Owners of the Bonds issued and Outstanding under the Agreement. The Trustee shall apply the moneys held from time to time for the credit of the Accounts in the Debt Service Fund as follows:

(a) as to moneys held in each subaccount in the Interest Account, to the payment of interest on the Bonds with respect to which the applicable subaccount was established, on or after the date when due to each Registered Owner of such Bonds as of the applicable Record Date or Special Record Date, as such interest becomes due and payable;

(b) as to moneys held in each subaccount in the Principal Account, to the payment, on or after the date when due, of the principal of all matured Bonds with respect to which the applicable subaccount was established;

(c) as to moneys held in each subaccount in the Sinking Fund Account, to the application on the due date of each Sinking Fund Installment to the redemption of the Term Bonds with respect to which the applicable subaccount was established, to the extent the same are then subject to redemption by application of Sinking Fund Installments, in the manner provided by the applicable Series Resolution and the Agreement and

(d) as to moneys held in the Optional Redemption Account, to the redemption or purchase of Bonds as provided below.

The Trustee upon the written direction of an Authorized Officer of the Authority shall apply moneys held in any subaccount in the Sinking Fund Account to the purchase of Term Bonds with respect to which the applicable subaccount was established whenever such Bonds may, with reasonable diligence, be purchasable at prices not exceeding the Redemption Price payable for such Bonds on the next Sinking Fund Installment due date for such Bonds; provided, however, that no such purchase shall be made within the period of forty-five (45) days next preceding the next Sinking Fund Installment due date for such Bonds.

The Trustee upon the written direction of an Authorized Officer of the Authority shall also apply moneys held in the Optional Redemption Account to the purchase, arranged as is mutually agreeable to the Trustee and the Authority, of Bonds then Outstanding at a price not to exceed (a) the Redemption Price payable to the holders of such Bonds on the next redemption date if such Bonds shall have been called for redemption on such date or (b) if such Bonds have not been called for redemption on such date, (i) the Redemption Price applicable on such date to Bonds subject to optional redemption on such date, and (ii) as to Bonds not subject to optional redemption on such date, the Redemption Price applicable to such Bonds on the first date such Bonds are subject to optional redemption.

Notwithstanding the foregoing provision, no such purchase shall be made at any time when the amounts on deposit to the credit of the Interest Account, the Principal Account and the

Sinking Fund Account are less than the amounts then respectively required to be on deposit therein, and provided further, that no such purchase of any Term Bond shall be made within the period of forty-five (45) days next preceding the next Sinking Fund Installment due date with respect to such Term Bond and no such purchase of any other Bond shall be made within the period of ten (10) days next preceding any date upon which notice of redemption of such Bonds is scheduled to be mailed.

The principal amount of all Term Bonds purchased as aforesaid shall be deemed to constitute deposits in the applicable subaccount in the Sinking Fund Account and shall be applied, first, against the amounts of such Sinking Fund Installments with respect to such Term Bonds theretofore due and not paid as the Authority shall designate by a certificate of an Authorized Officer, and second, against one or more such Sinking Fund Installments (including any portion of any such Sinking Fund Installment) not yet due as the Authority shall designate by a certificate of an Authorized Officer.

If a Series Resolution shall provide for the redemption at the option of the Authority of any Series of Bonds authorized thereunder, and if at any time on or after the earliest date specified in such Series Resolution for such redemption the amounts on deposit to the credit of the Interest Account, the Principal Account and the Sinking Fund Account shall be equal to or greater than the amounts then respectively required to be so on deposit with respect to any Series of which Bonds will be redeemed, and if the moneys held in the Optional Redemption Account shall equal or exceed (a) the Redemption Price of all Bonds theretofore called for redemption and not redeemed, plus (b) the Redemption Price payable at the next redemption date of Bonds in the aggregate principal amount or Accreted Amount equal to not less than the smallest authorized denomination of the Bonds subject to redemption, plus (c) all necessary and proper expenses to be incurred in connection with the redemption of Bonds on such date, the Trustee shall, if the Authority shall so direct by Certificate of an Authorized Officer (which certificate shall set forth the Series, maturities and principal amounts or Accreted Amounts of each maturity of the Bonds to be redeemed), call Bonds as set forth in such certificate for redemption on the next available redemption date; provided, however, that the aggregate principal amount and Accreted Amount of Bonds to be redeemed set forth in such certificate shall not be greater than the aggregate principal amount and Accreted Amount which will most nearly exhaust the moneys so held in the Optional Redemption Account; and provided further that Bonds shall not be designated for redemption in such certificate unless such Bonds are subject to redemption on the applicable redemption date. Such call and the redemption of Bonds and portions of Bonds so called shall be made pursuant to the provisions of the Agreement.

Interest on Bonds redeemed from moneys in the Optional Redemption Account shall be paid from moneys on deposit in the applicable subaccount in the Interest Account.

If on the date for application of moneys held in the Principal Account or in the Sinking Fund Account, the moneys so held are less than the amount required for application under whichever applies of clauses (b) or (c) of the first paragraph above in "Debt Service Fund," or if by a Certificate of an Authorized Officer the Authority directs that some or all of the moneys in the Optional Redemption Account be applied to the payment of principal or Sinking Fund Installments due on the Bonds, the Trustee shall apply moneys then held in the Optional Redemption Account (except such moneys as to which notice of redemption has already been

given) by transfer to the Principal Account or to the Sinking Fund Account, as the case may be, to the extent of the deficiency therein or as directed by such certificate, whichever is applicable; provided that bond counsel to the Authority delivers an opinion to the effect that such application of such moneys is permitted by the Enabling Act and will not jeopardize the exclusion of interest or the Bonds from gross income for federal income tax purposes.

Notwithstanding any other provision of the Agreement, if and to the extent permitted by the applicable Series Resolution, (a) moneys in any subaccount in the Interest Account, Principal Account or Sinking Fund Account may be applied to reimburse the issuer of a Credit Facility for amounts received by the Trustee pursuant to such Credit Facility to be applied to the payment of, respectively, interest on, principal of or any Sinking Fund Installment on the Bonds for which such subaccount was established or to pay any amount due from or on account of the Authority under a Derivative for payments made pursuant to such Derivative to be applied to the payment of, respectively, interest on, principal of or any Sinking Fund Installment on the Bonds for which such subaccount was established, and (b) moneys in the Optional Redemption Account may be applied to reimburse the issuer of a Credit Facility for amounts received by the Trustee pursuant to such Credit Facility to be applied to the payment of all or any portion of the Redemption Price of Bonds redeemed on account of moneys in the Optional Redemption Account or to pay any amounts due from or on account of the Authority under any Derivative for payments pursuant to such Derivative to be applied to the payment of all or any portion of the Redemption Price of bonds redeemed on account of moneys in the Optional Redemption Account.

Section 10 Reserve Fund; Other Reserve Funds; Moneys Received Pursuant to the Commonwealth Guaranty or a Credit Facility; Pledged Funds

(a) The moneys in the Section 10 Reserve Fund shall be held in trust and applied as provided below and, pending such application, are pledged to, and shall be subject to a lien and charge in favor of, the Registered Owners of the Guaranteed Bonds Outstanding.

The Trustee shall apply the moneys held from time to time for the credit of the Section 10 Reserve Fund to the payment to the appropriate subaccount in the Debt Service Fund of an amount equal to the excess of (a) the aggregate of amounts required at any Interest Payment Date to pay interest then due on Guaranteed Bonds and, if such date is also a maturity date or a Sinking Fund Installment due date for any Guaranteed Bonds, the principal of all such Guaranteed Bonds then matured or the amount of the Sinking Fund Installment then due with respect to Guaranteed Bonds, as the case may be, over (b) moneys then held for the credit of the appropriate subaccount or subaccounts in the Debt Service Fund, after any transfer thereto from the Optional Redemption Account, or from the Property Fund or from the Rate Stabilization Fund or from all of the foregoing, and available for the payment of such interest, principal or Sinking Fund Installment, respectively. If moneys in the Section 10 Reserve Fund are insufficient to pay in full the amounts specified above, such moneys shall be paid, first, to Guaranteed Bonds constituting Senior Bonds, and second to Guaranteed Bonds constituting Level 2 Bonds, and third to Guaranteed Bonds constituting Level 3 Bonds, and so on in descending level of subordination. If moneys in the Section 10 Reserve Fund are insufficient to pay in full the amounts to be paid with respect to all Guaranteed Bonds constituting Senior Bonds, or all Guaranteed Bonds of any applicable level of subordination, such moneys shall be applied to all Guaranteed Bonds of all Senior Series or all Guaranteed Bonds of all Series of the

applicable level of subordination, as the case may be, as described below in “Defaults; Remedies - Application of Funds.”

If on the first day of any calendar year or at any other time the amount on deposit in the Section 10 Reserve Fund exceeds the aggregate of the Annual Series Requirements for the present year and all prior years with respect to all Guaranteed Bonds Outstanding, the Authority may by a certificate of an Authorized Officer direct that all or a portion of such excess (other than any part of such excess consisting of interest received and profits realized in excess of losses from investments of moneys held in the Section 10 Reserve Fund, which shall be applied as described below in “Security for Deposits and Investments of Funds - Investments”) be withdrawn from the Section 10 Reserve Fund and deposited in the Revenue Fund to be applied to the payment of interest coming due in such year on such Guaranteed Bonds, provided that such certificate is accompanied by an opinion of bond counsel to the Authority that such application or payment is permitted by applicable law and will not adversely affect the exemption from gross income for federal income tax purposes of the interest on the Bonds.

At any time when the amount on deposit in the Section 10 Reserve Fund equals or exceeds (a) the aggregate of the twelve Annual Series Requirements to be in effect with respect to any particular Series of Guaranteed Bonds of which Bonds are then Outstanding plus (b) all Annual Series Requirements in effect for all prior years and for the then current year with respect to all Series of Guaranteed Bonds of which Bonds are Outstanding, and when such aggregate plus any other moneys held under the Agreement available for the purpose shall equal or exceed the aggregate amount required to pay in full the principal and Redemption Price of and interest on all Bonds of such particular Series then Outstanding (and, if the Bonds of such particular Series are to be redeemed, the necessary and proper expenses to be incurred in connection with such redemption), the Authority may by a certificate of an Authorized Officer direct the Trustee to apply to such payment an amount from the Section 10 Reserve Fund not exceeding such aggregate; provided, however that moneys “available for the purpose” as such phrase is used above in this paragraph shall mean, (x) as to moneys in the subaccounts applicable to such particular Series in the Interest Account, Principal Account and Sinking Fund Account, moneys in excess of the amount then required to be on deposit in each of such subaccounts with respect to all outstanding Guaranteed Bonds to which such subaccounts apply other than Guaranteed Bonds of such particular Series and (y) as to moneys in the Optional Redemption Account, any Account in the Property Fund and the Rate Stabilization Fund, moneys in any such Fund or Account described in a Certificate of an Authorized Officer to be so applied (such direction to be in accordance with the provisions of the Agreement with respect to the use of the moneys in any such Fund, Account or subaccount).

All deposits to the Section 10 Reserve Fund shall be apportioned if directed by a certificate of an Authorized Officer to separate Accounts to be created therein, one account for each Series of Guaranteed Bonds Outstanding (the “Section 10 Series Accounts”), for purposes of compliance by the Authority with the Code and to such subaccounts, as so directed, as are necessary or desirable to comply with the Code. The portion of each deposit attributed to the Account of a particular Series will be the proportion of the total deposit that the Annual Series Requirement for such Series bears to the aggregate Annual Series Requirements for all Series of Guaranteed Bonds of the same level (i.e., Senior Bonds, Subordinate Series Level 2, etc.).

Any withdrawal from the Section 10 Reserve Fund shall be made in portions taken from all Section 10 Series Accounts in such proportion from each such Account as each such Account bears to the total balance of the Section 10 Reserve Fund prior to the making of such withdrawal, unless otherwise directed by a certificate of an Authorized Officer accompanied by an opinion of bond counsel to the Authority to the effect that the instructions for withdrawal set forth in such certificate will not adversely affect the exclusion from gross income for federal tax purposes of the interest on the Bonds.

(b) Moneys in any Debt Service Reserve Fund or Multi-Series Debt Service Reserve Fund shall be applied as set forth in the one or more applicable Series Resolutions.

(c) Moneys received pursuant to the Commonwealth Guaranty shall be held in a separate Account and applied as promptly as practicable to the payment of principal and interest due on the Guaranteed Bonds on account of which such moneys were received.

(d) Moneys received by the Trustee pursuant to a Credit Facility shall be held in a separate Account and shall be applied as provided in the one or more applicable Series Resolutions or in such Credit Facility.

(e) Pledged Funds received by the Trustee shall be held in a separate Account and applied as provided in the one or more applicable Series Resolutions.

Property Fund

In addition to the Accounts and subaccounts established in the Property Fund described above in "Funds and Accounts," the Agreement establishes and authorizes to be established Accounts in the Property Fund for such reserves as the Authority may establish as described below in clause (d) in "Particular Covenants - Rate Covenant." Subject to the following paragraph, the Trustee shall credit all moneys deposited in the Property Fund to such Account therein (or, as to the Capital Improvements Reserve Account, to such subaccount or subaccounts therein) as the Authority may by certificate of an Authorized Officer direct and, in the absence of such a certificate, to the General Account.

The Trustee shall deposit in the Insurance Proceeds Account all proceeds of an insurance policy or policies upon any Project paid by reason of any insured casualty, except that if the Project to which the proceeds apply has not yet reached completion, such proceeds shall be deposited to the related Account of the Construction Fund; provided, that any such proceeds which are proceeds of "use or occupancy" insurance, so-called, or any other insurance providing for payments in place of income or for operating expenses, in either case as certified by an Authorized Officer, shall be deemed Revenues and be deposited to the credit of the Revenue Fund.

The moneys held in each Account in the Property Fund shall be held in trust and applied as provided below and, pending such application, are pledged to, and shall be subject to a lien and charge in favor of, the Registered Owners of the Bonds issued and Outstanding under the Agreement.

The Trustee shall apply the moneys held from time to time for the credit of each Account in the Property Fund as follows:

(a) as to any Account created for a reserve as described below in clause (d) in “Particular Covenants - Rate Covenants,” to the payment from time to time of amounts as provided by the pertinent resolution of the Authority and for the purposes therein provided in accordance with a certificate of an Authorized Officer;

(b) as to the General Account, to the payment from time to time as deemed appropriate by the Authority of Maintenance, Repair and Operating Expenses of any Project not otherwise provided for;

(c) as to the Insurance Proceeds Account, to payment, in accordance with the provisions described below in “Particular Covenants - Insurance on Projects,” for the repair, restoration or reconstruction of the damage or destruction on account of which the funds were received, or for the doing of such other work in respect of such Project as the Authority may determine in accordance with the provisions described below under “Particular Covenants - Insurance on Projects”;

(d) as to any subaccount in the Capital Improvements Reserve Account, to the payment from time to time of the costs of capital improvements or capital repairs with respect to any Project to which the applicable subaccount pertains;

(e) as to the Multi-Purpose Reserve Account, to any lawful purpose for which the Authority may expend funds (and the Trustee may rely on a statement to such effect in the certificate of an Authorized Officer directing such application that the amounts set forth in such certificate will be so applied);

(f) to the extent of moneys so held in any Account in the Property Fund which are not the proceeds of any insurance policy or policies or investment earnings on such proceeds, to transfer to any one or more subaccounts in the Interest Account, the Principal Account or the Sinking Fund Account, one or more, as the case may be, in the Debt Service Fund if and to the extent that moneys held in any such subaccount on a date for application thereof, together with money available in the Rate Stabilization Fund, shall be less than the amount then required for application from such subaccount; and

(g) to the extent of moneys so held in any Account in the Property Fund which are not the proceeds of any insurance policy or policies or investment earnings on such proceeds, to the redemption of Bonds as may be directed from time to time by a certificate of an Authorized Officer.

The Authority may, by a certificate of an Authorized Officer approved by the University Trustees and accompanied by an opinion of bond counsel to the Authority to the effect that the instructions in such certificate are permitted by the Enabling Act and will not adversely affect the exclusion of the interest on the Bonds from gross income for federal income tax purposes, direct that amounts be transferred from any one or more subaccounts in the Capital Improvements Reserve Account to any other one or more subaccounts in the Capital Improvements Reserve

Account or to one or more Capital Improvements Reserve Accounts or like accounts (or, if applicable, one or more subaccounts in any such Capital Improvements Reserve Account or like account) established under any other trust agreement under which the Authority has issued bonds).

Rate Stabilization Fund

Amounts shall be deposited in the Rate Stabilization Fund from the Revenue Fund in the Authority's discretion as provided in the Agreement in order to minimize the variation over time in the fees, rents, rates and other charges fixed in accordance with the provisions described below in "Particular Covenants - Rate Covenant." At any time, upon the direction of the Authority as evidenced by a Certificate of an Authorized Officer, amounts on deposit in the Rate Stabilization Fund may be withdrawn and deposited in the Revenue Fund or applied to the redemption of Bonds.

Notwithstanding the foregoing paragraph, if at any time the amounts on deposit and available therefor in the Debt Service Fund are insufficient to pay the principal and Redemption Price of and interest on the Bonds then due, the Trustee shall withdraw from the Rate Stabilization Fund and deposit in the appropriate subaccount within the Debt Service Fund the amount necessary to meet such deficiency.

Rebate Fund

For each Series of Bonds subject to the rebate requirements of the Code, there shall be established within the Rebate Fund a separate account, for the benefit of the United States of America, and such subaccounts therein as are provided in the applicable Series Resolution, as amended from time to time, or as may be directed by a certificate of an Authorized Officer.

The Trustee shall deposit in the applicable account in the Rebate Fund such amounts as are required pursuant to such Series Resolution, invest the same as set forth therein, and keep such records as shall enable the Authority to satisfy its rebate obligations for such Series under the Code. The Authority shall direct the Trustee to pay to the United States from the Rebate Fund on the Authority's behalf such amounts as are required to be paid pursuant to the Code, all as set forth in the applicable Series Resolution, provided that any deficiency in the amounts required to be deposited into the Rebate Fund, or in any required payment from the Rebate Fund to the United States, shall be made up by the Authority, and provided further that no amount in the Rebate Fund shall be paid to the Authority or transferred to any other Fund or Account except as permitted by the Agreement, the Series Resolution and the Code.

The provisions described in this paragraph, as modified by the applicable Series Resolution, shall survive the defeasance of the Agreement, or of any Series of Bonds to which such provisions apply, and such provisions and the provisions pertaining to rebate in any Series Resolution shall be subject to amendment without the consent of any Registered Owner to reflect any applicable amendment to the Code with respect to rebate.

SECURITY FOR DEPOSITS AND INVESTMENTS OF FUNDS

Deposits with Trustee

All moneys deposited under the Agreement with the Trustee shall be held in trust and applied in accordance with the provisions of the Agreement, and shall not be subject to lien or attachment by any creditor of the Authority or the Trustee.

All moneys deposited with the Trustee under the Agreement shall be continuously secured, for the benefit of the Authority and the Registered Owners of the Bonds in such manner as may then be required or permitted by applicable state or federal laws and regulations regarding the security for, or granting a preference in the case of, the deposit of trust funds; provided, however, that it shall not be necessary for the Trustee to give security for any moneys which shall be invested in Investment Obligations.

All moneys deposited with the Trustee shall be credited to the particular Fund, Account or subaccount to which such moneys belong.

Investments

Moneys held for the credit of the Note Payment Fund shall, as nearly as may be practicable, be continuously invested and reinvested by the Trustee in Investment Obligations which shall mature, or which shall be subject to redemption by the holder thereof at the option of such holder, not later than the day or days preceding the date or dates of payment of the notes for the payment of which such moneys in the Note Payment Fund are held.

Moneys held for the credit of each Account within the Construction Fund shall, as nearly as may be practicable, be continuously invested and reinvested by the Trustee in Investment Obligations which shall mature, or which shall be subject to redemption by the holder thereof at the option of such holder, not later than the respective dates as set forth in a schedule furnished by an Authorized Officer of the Authority to the Trustee at the time moneys are first deposited in such Account, as such schedule may thereafter be amended, when moneys held for the credit of such Account will be required for the purposes intended.

Moneys held for the credit of the Revenue Fund shall, as nearly as may be practicable, be continuously invested and reinvested by the Trustee in Investment Obligations which shall mature, or which shall be subject to redemption by the holder thereof at the option of such holder, as to moneys not in excess of the amount then required as the reserve for Current Expenses, not later than the day or days preceding the date or dates upon which moneys are to be applied to the payment of Current Expenses, Maintenance, Repair and Operating Expenses and Section 19C Payments as set forth in a schedule filed by the Authority with the Trustee, or, as to moneys held in the Revenue Fund and to be transferred to other Funds, Accounts and subaccounts as described above in "Establishment and Application of Funds and Accounts - Revenue Fund," not later than the day preceding the date of such transfer.

Moneys held for the credit of each subaccount in the Debt Service Fund shall, as nearly as may be practicable, be continuously invested and reinvested by the Trustee in Investment

Obligations which shall mature, or which shall be subject to redemption at the option of the holder thereof, as to moneys so held in any subaccount in the Interest Account in an amount not in excess of the amount payable as interest from such subaccount at the next Interest Payment Date, not later than the day prior to such Interest Payment Date, or, as to moneys so held in any subaccount in the Principal and Sinking Fund Accounts, in amounts not respectively in excess of the amount payable from such subaccount as principal of Bonds maturing at the next maturity date or of the amount of the Sinking Fund Installment next falling due, not later than the day prior to the date of such maturity or such due date, as the case may be, or, as to other moneys, if any, so held, not later than twelve (12) months after the date of any such investment.

Moneys held for the credit of the Section 10 Reserve Fund and the Rate Stabilization Fund shall, as nearly as may be practicable, be continuously invested and reinvested by the Trustee in Investment Obligations, provided that amounts on deposit in the Section 10 Series Account for any Series of Outstanding Guaranteed Bonds, or in any subaccounts, shall not be invested in excess of the yield or yields as set forth in the investment instructions delivered to the Trustee from time to time by an Authorized Officer, except as permitted by an opinion of bond counsel to the Authority to the effect that investments may be made at the yield or yields set forth in such opinion without adversely affecting the exclusion from gross income of the interest on such Series of Guaranteed Bonds or any other Bonds.

Moneys in any Debt Service Reserve Fund or Multi-Series Debt Service Reserve Fund shall be invested as provided in the one or more applicable Series Resolutions.

Moneys held for the credit of each Account or subaccount in the Property Fund shall, as nearly as may be practicable, be continuously invested and reinvested by the Trustee in Investment Obligations which shall mature, or which shall be subject to redemption by the holder thereof at the option of such holder, on the dates specified from time to time in a certificate of an Authorized Officer delivered to the Trustee.

Notwithstanding any other provisions of the Agreement, the Authority may at any time deliver to the Trustee by a certificate of an Authorized Officer additional or different instructions from those set forth above regarding the investment of moneys held under the Agreement, provided that such instructions do not jeopardize the exclusion from gross income for federal income tax purposes of the interest on any Bond (as to which the Authority may rely on an opinion of bond counsel to the Authority), and provided that such additional or different instructions do not violate the requirements of the issuer of any Credit Facility with respect to the moneys to which such instructions apply. The Trustee shall comply with such instructions if (a) the Authority certifies in such certificate that such instructions do not jeopardize the exclusion from gross income for federal income tax purposes of the interest on any Bond; (b) no investment is directed to be made in any investments other than Investment Obligations; (c) the Authority certifies in such certificate that such instructions do not violate the requirements of the issuer of any Credit Facility with respect to the moneys to which such instructions apply; and (d) the Trustee's liability as set forth in the Agreement is not modified.

Investment Obligations purchased as an investment of moneys in any Fund, Account or subaccount may be purchased and held with Investment Obligations purchased as an investment of moneys in any other Fund, Account or subaccount as a part of a single investment fund but

shall be deemed at all times to be a part of the Fund, Account or subaccount for which they were purchased, and the interest accruing thereon and any profit or loss realized from such investments shall be charged pro rata to each such Fund, Account or subaccount; provided, however, (a) that interest received and profits realized in excess of losses realized in any fiscal year from investments of moneys held in the Note Payment Fund shall be deemed to be proceeds of the corresponding Series of Bonds and, except to the extent provided in the Series Resolution authorizing the issuance of such Bonds to be applied to the payment of notes issued by the Authority, shall be transferred, upon the first to occur of (i) payment in full of the pertinent notes or (ii) the end of a fiscal year, to the corresponding Account within the Construction Fund, (b) that, subject to the provisions described above in "Establishment and Application of Funds and Accounts - Rebate Fund," all such interest and profits from the investment of moneys held in Construction Fund Accounts shall be retained in such Accounts, (c) that, subject to the provisions described above in "Establishment and Application of Funds and Accounts - Rebate Fund," all such interest and profits from the investment of moneys held in any Debt Service Reserve Fund or Multi-Series Debt Service Reserve Fund shall be applied as provided in the one or more Series Resolutions governing the application of moneys held in the applicable Debt Service Reserve Fund or Multi-Series Debt Service Reserve Fund and (d) that, subject to the provisions described above in "Establishment and Application of Funds and Accounts - Rebate Fund," such interest and profits from investments of moneys held in any other Fund, Account or subaccount, except as otherwise provided in a Series Resolution or in the Agreement, shall constitute Revenues and shall be transferred to the Revenue Fund. Such interest received and profits realized in excess of losses realized in any calendar year from investments of moneys held in the Section 10 Reserve Fund shall, subject to the provisions described above in "Establishment and Application of Funds and Accounts - Rebate Fund," and if and only if the amount on deposit to the credit of the Section 10 Reserve Fund on the first day of such calendar year (or on any other date of such calendar year if bond counsel to the Authority delivers an opinion to the effect that such is permitted by the Enabling Act) exceeds the aggregate of all Annual Series Requirements in effect for the Guaranteed Bonds then Outstanding for all calendar years through and including such calendar year, constitute Revenues to the extent of the amount of such excess and shall be transferred as received to the Revenue Fund to be applied to the payment of interest on Guaranteed Bonds, unless a certificate of an Authorized Officer directs that any such interest or profits be held in the Section 10 Reserve Fund. Interest and profits derived from the investment of moneys, which interest and profits are held in the Revenue Fund or which are not subject to being transferred thereto, shall, to the extent available, be deemed to be included among the amounts first requisitioned or otherwise withdrawn and expended from any Fund, Account or subaccount. The Trustee shall sell at the best price obtainable or present for redemption any obligations so purchased whenever it shall be necessary so to do in order to provide moneys to meet any payment or transfer from any such Fund, Account or subaccount. Neither the Trustee nor the Authority shall, in the absence of bad faith, be liable on account of or responsible for the results of any such investment.

In computing the amount in any Fund, Account or subaccount held by the Trustee under the Agreement, Investment Obligations shall be valued at par if purchased at par or at amortized value if purchased at other than par. Amortized value, when used with respect to an obligation purchased at a premium above or a discount below par, means the value as of any given time obtained by dividing the total premium or discount at which such obligation was purchased by

the number of days remaining to maturity on such obligation at the date of such purchase and by multiplying the amount thus calculated by the number of days having passed since such purchase; and (1) in the case of an obligation purchased at a premium by deducting the product thus obtained from the purchase price; and (2) in the case of any obligation purchased at a discount by adding the product thus obtained to the purchase price. Valuation on any particular date shall include the amount of interest then earned or accrued to such date on any Investment Obligations.

Investment Advice

The Authority shall direct all investments of moneys held under the Agreement, or the Authority may, at its expense, appoint as an investment adviser a person registered under the federal Investment Advisers Act of 1940 and having a favorable reputation for competence and experience in investing in Investment Obligations to instruct the Trustee with respect to investment and reinvestment of all or a portion of the moneys held under the Agreement. The Trustee shall have no liability of any kind to the Authority, to any Registered Owner or to any other person for or on account of any investment transaction it shall carry out in accordance with investment instructions given as provided in the Agreement. The Trustee may carry out all investment transactions through its own facilities.

PARTICULAR COVENANTS

Rate Covenant

The Authority covenants that it will establish and revise rules and regulations to insure the use and occupancy of, and will fix, revise, adjust and collect fees, rents, rates and other charges for the use of, each Project and of all Other Projects and other property of the Authority the Revenues from which are pledged under the Agreement, in such manner and at such levels as may be necessary so that the aggregate of (i) the proceeds from such fees, rents, rates and other charges for the use of all Projects, Other Projects and other property the Revenues from which are pledged under the Agreement, (ii) all other Revenues from such Project, Other Projects and property and (iii) all appropriations, contributions, gifts and grants received by the Authority or made for the benefit of the Authority or any such Project, Other Project or property and available and applied for the purpose, will provide Revenues sufficient in each fiscal year:

(a) to pay the Maintenance, Repair and Operating Expenses of such Projects, Other Projects and property, provided, that in the case of a Project with respect to which a Contract is in effect that includes undertakings by the University Trustees respecting maintenance, repair and operation thereof, such undertakings shall be deemed to fulfill the covenant of the Authority as to the sufficiency of Revenues therefor;

(b) (i) to provide for making deposits to the credit of the appropriate Accounts in the Debt Service Fund in amounts in such fiscal year equal in the aggregate to the total of (A) all interest becoming due and payable in such fiscal year on all Bonds then Outstanding, (B) the principal amount of all such Bonds maturing in such fiscal year, (C) the Sinking Fund Installments, if any, becoming due in such fiscal year in respect of all such Bonds and (D) other amounts, if any, payable in such fiscal year on the account of all such Bonds or required to be

deposited in such Fiscal Year to any Account in the Debt Service Fund and (ii) to provide for the payment of the purchase price of Bonds tendered as provided in the one or more applicable Series Resolutions;

(c) to pay the Current Expenses of the Authority properly allocable to such Projects, Other Projects and property;

(d) to create and maintain such funds, accounts and reserves, if any, as may be provided for in any Series Resolution authorizing the issuance of Bonds or in a resolution thereafter adopted;

(e) to pay the amounts of any Section 19C Payments to be paid in such fiscal year; and

(f) to provide for making deposits to the credit of (i) the Section 10 Reserve Fund in amounts which, together with amounts deposited in the preceding fiscal year for such purpose or to be deposited in the subsequent fiscal year for such purpose will equal in the aggregate the reserve required by Section 10 of the Enabling Act to be established and maintained in such Fund in respect of each calendar year constituting a portion of such fiscal year and (ii) each Debt Service Reserve Fund or Multi-Series Debt Service Reserve Fund in amounts, if any, required by the one or more applicable Series Resolutions;

except that

(g) as to any Project or Other Projects the Bonds or other indebtedness issued by the Authority to finance or refinance which shall have been paid or provided for in full, as described below in "Defeasance," such Revenues need only be sufficient to pay the amounts required under clauses (a), (c), (d) and (e) above;

and, so far as consistent with the foregoing requirements, so as to maintain reasonable uniformity of charges for like rooms or other accommodations, facilities and services at the University whether or not contained in or provided by a Project of the Authority.

The Authority covenants that if the amounts deposited to the credit of any Account in the Debt Service Fund, the Section 10 Reserve Fund and any other reserve fund securing any Bonds in any fiscal year shall be less than the amounts respectively referred to above for such fiscal year, it will revise and adjust the aforesaid fees, rents rates and other charges so as to provide funds sufficient, with all other moneys available for the purpose, to provide the payments and deposits specified above to be made from Revenues.

To the extent provided in the Enabling Act, any establishment or revision of said rules and regulations and any fixing, revision or adjustment of said fees, rents, rates or other charges by the Authority shall require the approval of the University Trustees, and the Authority covenants that it will use its best efforts to obtain such approval whenever required.

Annual Schedule of Projected Expenses

The Authority shall file with the Trustee an annual schedule of projected expenses (the “Annual Schedule of Projected Expenses” or “Schedule”) as follows:

(a) With or before the first remittance to the Trustee of moneys to be deposited in the Revenue Fund, the Authority shall file with the Trustee an initial Schedule signed by an Authorized Officer setting forth the amount estimated by the Authority to be payable from the Revenue Fund as Current Expenses, Maintenance, Repair and Operating Expenses and Section 19C Payments during the period commencing with the date thereof and ending on the next following June 30.

(b) On or before each June 15, commencing with the June 15 next preceding the end of the period covered by said initial Schedule, the Authority shall file with the Trustee a Schedule similarly signed setting forth the amount estimated by the Authority to be payable from the Revenue Fund as Current Expenses, Maintenance, Repair and Operating Expenses and Section 20 Payments during the period commencing on the next following July 1 and ending twelve months thereafter.

(c) If at any time prior to June 30 in any period covered by the initial or any subsequent Schedule, as the same may have theretofore been amended, the aggregate of the amounts paid from the Revenue Fund since and including the next preceding July 1 as Current Expenses, Maintenance, Repair and operating Expenses and Section 19C Payments shall exceed the amount set forth in such Schedule, the Authority shall file an amended Schedule similarly signed increasing accordingly the estimated amount to be payable as Current Expenses, Maintenance, Repair and Operating Expenses and Section 19C Payments during the balance of such period. Each amended Schedule filed by the Authority under this clause shall supersede all initial, annual and amended Schedules filed prior thereto.

Debt Service Payments and Payment of Purchase Price

The Authority covenants that it will promptly pay the principal of and the interest on every Bond and the purchase price of every Bond tendered as provided in the applicable Series Resolution at the place, on the dates and in the manner provided in the Agreement and in said Bond and Series Resolution, and any premium required for the retirement of said Bond by purchase or redemption, according to the true intent and meaning thereof. Except as otherwise provided in the Agreement, such principal, interest, purchase price and premium are payable solely from Revenues and Funds pledged under the Agreement.

The Authority covenants that it will perform and observe each and every agreement, condition, covenant and obligation on its part to be performed and observed under each Contract providing for the Commonwealth Guaranty to the end that the Commonwealth Guaranty therein provided and the pledge of the full faith and credit of the Commonwealth for such Commonwealth Guaranty shall remain in full force and effect and binding upon the Commonwealth as authorized by the Enabling Act and provided by such Contract, said Commonwealth Guaranty and pledge being evidenced by the guaranty executed on each applicable Guaranteed Bond by an officer of the University Trustees.

Completion of Projects

The Authority covenants that it will with reasonable expedition complete each Project in conformity with law and all requirements of all governmental authorities having jurisdiction thereover. The Authority further covenants that upon completion or occupancy of each Project financed by a Series of Bonds issued under the Agreement, if and to the extent that there is no obligation of the University Trustees under a Contract to undertake the operation and maintenance of any such Project, the Authority will thereafter operate and maintain, or otherwise provide for the operation and maintenance of, such Project.

Land Covenant

(a) The Authority covenants that each Project constructed or acquired by it is or will be located on lands as to which either (i) the same are leased by the Authority from the Commonwealth for the purpose by a good and valid lease or leases continuing or renewable at the option of the Authority for a term not shorter than the last maturity of any Bond of the Series pertaining to such Project, or (ii) good and marketable title to which is owned by the Authority in fee simple or the right to use and occupy which is vested in the Authority by valid franchises, licenses, easements, rights of way or other rights expiring not earlier than the last maturity of any such Bond.

(b) The foregoing covenant shall not apply to a Project consisting of the construction, alteration, enlargement, reconstruction, rehabilitation, remodeling and other work on any building, structure or other facility (including without limitation parking lots) not owned or leased by the Authority as lessee or sublessee and not involving the acquisition of such building, structure or facility by the Authority.

Compliance with Contracts

The Authority covenants that it will perform and observe each and every agreement, condition, covenant and obligation on its part to be performed and observed under each Contract, and will use its best efforts to enforce like performance and observation on the part of the Commonwealth and the University Trustees, to the end that the obligation of the Commonwealth and the University Trustees thereunder, among other things, to remit to the Authority or to the Trustee Revenues, to operate and maintain the Project and to make necessary repairs to and restoration and reconstruction of the same shall continue in full force and effect. The Authority covenants that, from and to the extent of, but not in excess of, the Revenues of each Project owned by it and any other funds available to it for the purpose, it will cure any deficiencies in the maintenance of such Project and will make all necessary repairs, restoration and reconstruction not made by the Commonwealth pursuant to the applicable Contract and that it will observe and perform all of the terms and conditions contained in the Enabling Act.

Payment of Lawful Charges

The Authority covenants that it will not create or suffer to be created any lien or charge upon any Project or any part thereof or upon the Revenues therefrom except the lien and charge upon such Revenues under the Agreement, and that, from the same or other available funds, it

will pay or cause to be discharged, or will make adequate provision to satisfy and discharge, as promptly as possible after the same shall accrue, all lawful claims and demands for labor, materials, supplies or other objects which, if unpaid, might by law become a lien upon any Project or any part thereof or the Revenues therefrom; provided, however, that nothing in the foregoing provisions in this subsection shall (a) require the Authority to pay or cause to be discharged, or make provision for, any such lien or charge so long as the validity thereof shall be contested in good faith, or (b) prohibit (i) the University Trustees or the University from using any funds of the University in accordance with law and in compliance with any Contract or any other agreement applicable to the University Trustees or the University or (ii) the Expendable Fund Balance of the University from being used in accordance with law and in compliance with any Contract or any other agreement applicable to the University Trustees; and provided, further, that if on any date the Authority holds or there is held for the account of the Authority Revenues in excess of the Revenues required by the provisions described above in "Rate Covenant" for the remainder of the fiscal year in which such date occurs, the Authority may apply such excess to any lawful purpose of the Authority as the Authority may from time to time determine.

Use of Other Funds for Projects; Sale of Projects

Notwithstanding any other provision of the Agreement, the Authority may permit the Commonwealth or any of its agencies, departments or political subdivisions, to pay the cost of maintaining, repairing and operating any Project out of funds other than Revenues of such Project whether pursuant to the pertinent Contract or otherwise.

The Authority may also, if and to the extent now or hereafter permitted by law, sell any Project owned by the Authority or any portion thereof; provided, that if such sale is of an entire Project, the proceeds therefrom shall be in an amount sufficient, with all other moneys then held by the Trustee hereunder and available for the purpose, (a) to pay or provide for the payment in full at the first date upon which such payment may be made of all amounts then required for the payment of the principal or Redemption Price of and interest on the Bonds then Outstanding issued to finance or refinance the cost of such Project (and the determination of which Bonds of the applicable Series were so issued shall be made by the Authority in any reasonable manner if the Project was financed or refinanced by Bonds issued as part of a Series that financed or refinanced more than one Project and shall be evidenced to the Trustee by a certificate of an Authorized Officer) and (b) to pay all necessary and proper expenses payable in connection with such payment; provided, further, that if such sale is of a portion of a Project, the proceeds therefrom shall be an amount sufficient, with any other moneys then held by the Trustee under the Agreement and available for the purpose, (a) to pay or provide for the payment in full at the first date upon which such payment may be made of the principal or Redemption Price of and interest on a principal amount of Bonds then Outstanding of the Series issued to finance or refinance the Cost of such Project bearing the same proportion to the principal amount of all such Bonds then Outstanding that (as reasonably determined by the Authority and evidenced to the Trustee by a Certificate of an Authorized Officer) the Cost of the portion of such Project to be sold bore to the Cost of the Project and (b) to pay all necessary and proper expenses payable in connection with such payment. The proceeds of any such sale shall be deposited by the Authority with the Trustee and shall be deposited by the Trustee to the credit of the Optional Redemption Account.

Insurance on Projects

The Authority covenants that (a) during the construction, alteration, enlargement, reconstruction, rehabilitation or remodeling of or other work upon each Project it will carry such builder's risk insurance, if any, as it may deem reasonable therefor, and (b) from and after the time when the contractors or any of them engaged in constructing any part of each Project shall cease to be responsible, pursuant to the provisions of the respective contracts for the construction of such part, for loss or damage to such part occurring from any cause, it will insure and at all times keep such part insured with a responsible insurance company or companies, qualified to assume the risk thereof, against physical loss or damage however caused, with such exemptions as are ordinarily required by insurers of buildings, structures or facilities of similar type and in similar locations, in such amount as it shall determine to be reasonable and in any event at least sufficient to comply with any legal or contractual requirement which, if breached, would result in assumption by the Authority of a portion of any loss or damage as a co-insurer; provided, however, that (i) if at any time the Authority shall be unable to obtain such insurance to the extent above required, either as to the amount of such insurance or as to the risks covered thereby, it will not constitute an event of default under the Agreement if the Authority shall maintain such insurance to the extent reasonably obtainable, (ii) such insurance may be provided by a policy or policies covering all insurable portions of such Project as a whole together with other insurable property of the Authority and (iii) the requirements set forth in clause (b) above of this paragraph shall not apply to any Project owned by the Commonwealth (but the Authority may from time to time provide such insurance of the kind described in such clause (b) for any Project owned by the Commonwealth as the Authority may determine in its discretion).

All such policies shall be for the benefit of the Trustee and the Authority as their interests shall appear, shall be made payable to the Trustee (by means of the standard mortgagee clause without contribution, if obtainable) and shall be deposited with the Trustee. The proceeds of any and all such insurance shall be deposited with the Trustee, and the Trustee shall have the sole right to receive the proceeds of such insurance and to collect claims thereunder and receipt therefor. The proceeds of any and all such insurance shall be deposited to the credit of the Insurance Proceeds Account in the Property Fund.

The Authority covenants that, immediately after any damage to or destruction of any part of any Project the estimated cost to repair, restore or reconstruct which exceeds One Hundred Thousand Dollars (\$100,000), it will, if necessary, prepare or cause the Architect or Engineer, as the case may be, for the Project to prepare plans and specifications for repairing, restoring or reconstructing the damaged or destroyed property, and in any event it will proceed with all reasonable promptness as may be required to accomplish such repair, restoration or reconstruction in accordance with the original design or to do such other work as may be advised in writing by the University Trustees.

The proceeds of all insurance referred to in this subsection shall be available for, and shall to the extent necessary be applied to, the repair, restoration or reconstruction of the damaged or destroyed property, or the doing of other work with respect thereto as the Authority may determine by resolution adopted upon advice in writing from the University Trustees, and shall be disbursed by the Trustee upon receipt of copies, certified by an Authorized Officer, of the resolution adopted by the Authority authorizing such repair, restoration and reconstruction

and of such written advice and otherwise in the manner and upon the showings provided in the Agreement for payments from the Construction Fund. If such proceeds shall be insufficient for such purpose, the deficiency shall be supplied from any other moneys available for the purpose in the appropriate reserve Account or in the General Account in the Property Fund.

Upon completion of the work authorized by such resolution the Authority shall cause to be filed with the Trustee a notice and a Counsel's Opinion with respect thereto executed, approved and including statements substantially to the same effect as those provided in the Agreement for completion of construction of a Project.

Any balance of such proceeds remaining after such certificate shall have been filed shall be held by the Trustee in the Insurance Proceeds Account in the Property Fund and applied as provided herein or, if the Authority shall so direct by a certificate of an Authorized Officer, shall be transferred to one or more of the Revenue Fund, the Optional Redemption Account in the Debt Service Fund, to any Account within the Construction Fund or to the Multi-Purpose Reserve Account.

Use, Occupancy and Other Insurance

The Authority covenants that it will at all times carry with a responsible insurance company or companies or companies qualified to assume the risk thereof:

(a) use and occupancy insurance covering loss of Revenues from each Project by reason of necessary interruption, total or partial, in the use thereof resulting from damage or destruction of any part thereof however caused, with such exceptions as are ordinarily required by insurers providing similar insurance, in such amount as the Authority shall estimate is sufficient to provide a full equivalent of Revenues for the fiscal year of the Authority respecting which such insurance is carried; provided, that if at any time the Authority shall be unable to obtain such insurance to the extent above required, either as to the amount of such insurance or as to the risks covered thereby, it will not constitute an event of default under the Agreement if the Authority shall carry such insurance to the extent reasonably obtainable; provided, however, that the Authority need not (but may) provide the insurance described in this subparagraph with respect to any Project owned by the Commonwealth; and

(b) such worker's compensation or employers' liability insurance as may be required by law and such public liability and property damage insurance as the Authority shall deem reasonable.

All policies providing use and occupancy insurance shall be made payable to and deposited with the Trustee, and the Trustee shall have the sole right to receive any proceeds of such policies and to collect claims thereunder. Any proceeds of use and occupancy insurance paid to the Trustee shall be deposited by it forthwith to the credit of the Revenue Fund.

Any appraisalment or adjustment of any loss or damage under any policy payable to the Trustee and any settlement or payment of indemnity under any such policy shall be agreed upon between the Authority and any insurer and shall be evidenced to the Trustee by a certificate, signed by an Authorized Officer of the Authority, which certificate may be relied upon by the

Trustee as conclusive. The Trustee shall in no way be liable or responsible for the collection of insurance moneys in case of any loss or damage.

No Inconsistent Action by Authority

The Authority covenants and agrees that none of the Revenues of any Project will be used for any purpose other than as provided in the Agreement and no contract or contracts will be entered into or any action taken which shall be inconsistent with the provisions of the Agreement.

Further Instruments and Actions

The Authority covenants that it will, from time to time, execute and deliver such further instruments and take such further action as may be required to carry out the purposes of the Agreement.

Records, Reports and Audits

The Authority covenants that it will keep an accurate record of the total cost of each Project, of the Revenues collected or derived from such Project, and of the application of such Revenues collected or derived from such Project. Such records shall be open at all reasonable times to the inspection of the Trustee. The Authority covenants that it will cause any reports or audits relating to each Project to be made as required by law and that it will furnish to the Trustee a copy of each such report and audit forthwith upon receipt thereof by the Authority.

Release of Land; Sale of Equipment

The Authority may from time to time (a) release to the University Trustees any land leased by the University Trustees to the Authority if permitted by a lease entered into between the University Trustees and the Authority and if such release will not adversely affect Revenues, (b) sell or otherwise dispose of any machinery, fixtures, apparatus, tools, instruments or other movable property acquired by it from the proceeds of Bonds or from the Revenues of a Project, if the Authority shall reasonably determine that such articles are no longer useful or appropriate in connection with the construction or operation and maintenance of such Project, and that such sale or disposition, taking account of the application of any proceeds received from such sale or disposition and any replacement to be made of or any substitution to be made for any of the properties so sold or disposed of, shall not adversely affect the Revenues from such Project.

Covenant as to Exclusion of Interest from Gross Income

The Authority covenants that it will not take any action or fail to take any action that would adversely affect the exclusion of interest on the Bonds from gross income for federal income tax purposes.

Notice of Default; Financial Statements

The Authority covenants that (a) forthwith upon any officer of the Authority's obtaining knowledge of any condition or event which constitutes or, after notice or lapse of time or both,

would constitute an “event of default” as defined in the Agreement, it will file with the Trustee a certificate signed by an Authorized Officer specifying the nature and period of existence thereof, and what action the Authority has taken, is taking or proposes to take with respect thereto, (b) on or before the 15th day of each July it will file with the Trustee a certificate signed by an Authorized Officer stating that, so far as is known to the signer of the certificate, the Authority is not in default under any covenant, agreement or condition contained in the Agreement and that no event has occurred which constitutes or, after notice or lapse of time or both, would constitute such an event of default or, if the Authority shall be in default, or any such event has occurred, specifying each such default and event and the nature and period of existence thereof of which the signer may have knowledge and what action, if any, the Authority has taken, is taking or proposes to take with respect thereto and (c) it will cause an examination of its financial statements as of the end of and for each fiscal year during which Bonds shall be Outstanding under the Agreement to be made by independent certified public accountants and within one hundred eighty (180) days after the end of each fiscal year will file with the Trustee a copy of such financial statements together with the signed opinion of such independent certified public accountants with respect thereto.

Defaults; Remedies

Extended Interest

In case the time for the payment of the interest on any Bond shall be extended, whether or not such extension be by or with the consent of the Authority, such interest so extended shall not be entitled in case of default under the Agreement to the benefit or security of the Agreement except subject to the prior payment in full of the principal of all Bonds then Outstanding and of all interest the time for the payment of which shall not have been extended.

Events of Default

Each of the following events is an “event of default” under the Agreement:

(a) payment of the principal and premium, if any, of any of the Bonds shall not be made when the same shall become due and payable, either at maturity or by required proceedings for redemption or otherwise, or payment of the purchase price of any Bond tendered as provided in the applicable Series Resolution shall not be made when such purchase price shall become due and payable; or

(b) payment of any installment of interest on the Bonds shall not be made when due and payable; or

(c) the Authority shall for any reason be rendered incapable of fulfilling its obligations under the Agreement; or

(d) an order or decree shall be entered, with the consent or acquiescence of the Authority, appointing a receiver or receivers of any Project or any part thereof or of the Revenues thereof, or if such order or decree, having been entered without the consent or acquiescence of the Authority, shall not be vacated or discharged or stayed on appeal within one hundred and twenty (120) days after the entry thereof; or

(e) any proceeding shall be instituted, with the consent or acquiescence of the Authority, for the purpose of effecting a composition between the Authority and its creditors or for the purpose of adjusting the claims of such creditors, pursuant to any federal or state statute now or hereafter enacted, if the claims of such creditors are under any circumstances payable from the Revenues of any Project; or

(f) the Authority shall default in the due and punctual performance of any of the covenants, conditions, agreements and provisions contained in the Bonds or in the Agreement on the part of the Authority to be performed in connection with the Bonds or any Project financed or refinanced by the Bonds, and such default shall continue for thirty (30) days after written notice specifying such default and requiring same to be remedied shall have been given to the Authority by the Trustee, which may give such notice in its discretion and shall give such notice at the written request of the Registered Owners of not less than twenty per cent (20%) in principal amount of the Bonds then Outstanding.

For all purposes of the Agreement, any event of default specified in subparagraph (a) or subparagraph (b) of the preceding paragraph with respect to any one or more Bonds shall be deemed to be such an event of default on all other Outstanding Bonds of the same level or levels as the Bond or Bonds with respect to which such event of default occurred, i.e., any such event of default with respect to one or more Senior Bonds shall be deemed to be such an event of default on all other Outstanding Senior Bonds, any such event of default with respect to one or more Bonds of any Subordinate Series, Level 2 shall be deemed to be such an event of default on all Outstanding Bonds of all Subordinate Series, Level 2, and so on.

No Acceleration

Notwithstanding any other provision of the Agreement to the contrary, the Bonds shall not be subject to acceleration, and all provisions with respect to events of default under the Agreement and with respect to remedies available under the Agreement shall be subject to such prohibition.

Remedies

Upon the happening and continuance of any event of default under the Agreement, then and in every such case the Trustee may proceed, and upon the written request of the Registered Owners of not less than twenty per centum (20%) in principal amount of the Bonds then Outstanding (or, in the case of an event of default under clause (a) or clause (b) above in "Events of Default," not less than twenty per centum (20%) in principal amount of the Bonds Outstanding as to which such event of default has occurred) shall proceed, subject to being indemnified as provided in the Agreement, to protect and enforce its rights and the rights of the Registered Owners of the Bonds under the laws of the Commonwealth or under the Agreement by such suits, actions or proceedings in equity or at law, or by proceedings in the office of any board or officer having jurisdiction, either for the specific performance of any covenant or agreement contained in the Agreement or in aid or execution of any power herein granted or for the enforcement of any proper legal or equitable remedy, as the Trustee, being advised by counsel, shall deem most effectual to protect and enforce such rights.

In the enforcement of any remedy under the Agreement the Trustee shall be entitled to sue for, enforce payment of and receive any and all amounts then or during any default becoming, and at any time remaining, due from the Authority for principal, interest or otherwise under any of the provisions of the Agreement or of the Bonds, with interest on overdue payments at the rate or rates of interest borne by the applicable Bonds, together with any and all costs and expenses of collection and of all proceedings under the Agreement and under the Bonds, without prejudice to any other right or remedy of the Trustee or of the Registered Owners, and to recover and enforce any judgment or decree against the Authority, but solely as provided in the Agreement and in the Bonds, for any portion of such amounts remaining unpaid, with interest, costs and expenses, and to collect (but solely from moneys in the Debt Service Fund, the Section 10 Reserve Fund, any other reserve fund securing any Bond, the Rate Stabilization Fund and the Property Fund and any other moneys available for such purpose) in any manner provided by law, the moneys adjudged or decreed to be payable.

Application of Funds

(a) Anything in the Agreement to the contrary notwithstanding, if at any time the moneys in the Debt Service Fund, in the Section 10 Reserve Fund, in any other reserve fund securing any Bond, in the Rate Stabilization Fund and in the Property Fund, and any other moneys available for the purpose shall not be sufficient to pay the principal and Redemption Price of or the interest on the Bonds as the same shall become due and payable or the purchase price of any Bond tendered as provided in the applicable Series Resolution, such moneys, together with any moneys then available or thereafter becoming available for such purpose, whether through the exercise of the remedies described in this section of this Summary or otherwise, shall be applied as provided in paragraph (b) below, any such application to be made, first to all Outstanding Senior Bonds, until all principal, Redemption Price and interest then due on such Senior Bonds have been paid, and second, to all Outstanding Level 2 Bonds, until all principal, Redemption Price and interest then due on such Level 2 Bonds have been paid, and third, to all Outstanding Level 3 Bonds, until all principal, Redemption Price and interest then due on such Level 3 Bonds have been paid, and so on in descending order of subordination. Any such application shall also be subject to the following:

(i) moneys received under the Commonwealth Guaranty shall be applied only to the Guaranteed Bonds on account of which such moneys are received and shall not be applied to the payment of the fees and expenses of the Trustee;

(ii) moneys in the Section 10 Reserve Fund shall be applied only to Guaranteed Bonds and shall not be applied to fees and expenses of the Trustee;

(iii) moneys received under any Credit Facility or Derivative shall be applied only to the payment of amounts which are due on the Bonds secured by such Credit Facility or to which such Derivative applies and to which moneys received under such Credit Facility or such Derivative are permitted to be applied and shall be applied to the fees and expenses of the Trustee only if such application is explicitly permitted under the applicable Credit Facility or the applicable Derivative and only in amounts not in excess of the amounts permitted by such Credit Facility or such Derivative to be so applied;

(iv) moneys in any reserve fund other than the Section 10 Reserve Fund shall be applied only as provided in the one or more applicable Series Resolutions and shall be applied to fees and expenses of the Trustee only if such application is explicitly permitted by the applicable Series Resolution;

(v) amounts due to the issuer of a Credit Facility for reimbursement of any amount paid under such Credit Facility for payment of principal or Redemption Price of or interest on any Bond or the purchase price of any Bond tendered as provided in the applicable Series Resolution (but not including interest on any such amount) shall, to the extent and under the conditions set forth in the applicable Series Resolution or reimbursement agreement with the issuer of such Credit Facility, be deemed for purposes of paragraph (b) below to be payments of principal or Redemption Price of or interest on such Bond and shall be paid to such issuer in connection with the application of moneys under such paragraph and

(vi) amounts due from or on account of the Authority under a Derivative for amounts paid under such Derivative for payment of principal or Redemption Price of or interest on any Bond (but not including interest on any such amount) shall, to the extent and under the conditions set forth in the applicable Series Resolution or in such Derivative, be deemed for purposes of paragraph (b) below to be payments of principal or Redemption Price of or interest on such Bond and shall be paid as provided in such Derivative in connection with the application of moneys under such paragraph.

(b) All such moneys shall be applied (subject to paragraph (a) above):

First: to the payment to the Trustee of its unpaid fees and expenses, to the extent of moneys available therefor as provided in paragraph (a) above;

Second: to the payment to the persons entitled thereto of all installments of interest on Bonds then due, in the order of the maturity of the installments of such interest, and, if the amounts available shall not be sufficient to pay in full any particular installment, then to the payment ratably, according to the amounts due on such installment, to the persons entitled thereto, without any discrimination or preference except as to any difference in the respective rates of interest specified in the Bonds and except as provided in paragraph (a) above;

Third: to the payment to the persons entitled thereto of the unpaid principal and Redemption Price of any of the Bonds which shall have become due (other than Bonds called for redemption for the payment of which moneys are held pursuant to the provisions of the Agreement), in the order of their due dates, with interest upon such Bonds from the respective dates upon which they became due, and the unpaid purchase price of any Bond tendered in accordance with the applicable Series Resolution, and, if the amount available shall not be sufficient to pay in full the principal and Redemption Price of Bonds due on any particular date, together with such interest, and such purchase price, then to the payment first of such interest, ratably according to the amount of such interest due on such date, and then to the payment of such principal, Redemption Price and purchase price, ratably according to the amount of such principal and purchase price

due on such date, to the persons entitled thereto, and in either case without any discrimination or preference, except as provided in paragraph (a) above and

Fourth: to the payment of the interest on and the principal and Redemption Price of the Bonds, to the purchase and retirement of Bonds and to the redemption of Bonds, all in accordance with the provisions described above under “Establishment and Application of Funds and Accounts” (and as provided in paragraph (a) above).

(c) Whenever moneys are to be applied by the Trustee pursuant to the above provisions, such moneys shall be applied by the Trustee at such times, and from time to time, as the Trustee in its sole discretion shall determine, having due regard to the amount of such moneys available for application and the likelihood of additional moneys becoming available for such application in the future; and the Trustee shall incur no liability whatsoever to the Authority, to any Registered Owner or to any other person for any delay in applying any such moneys, so long as the Trustee acts with reasonable diligence, having due regard to the circumstances, and ultimately applies the same in accordance with such provisions of the Agreement as may be applicable at the time of application by the Trustee. Whenever the Trustee shall exercise such discretion in applying such moneys, it shall fix the date (which shall be an Interest Payment Date unless the Trustee shall deem another date more suitable) upon which such application is to be made and upon such date interest on the amounts of principal to be paid on such date shall cease to accrue.

The Trustee shall give such notice as it may deem appropriate of the fixing of any such date, and shall not be required to make payment to the Registered Owner of any Bond until such Bond shall be surrendered to the Trustee for appropriate endorsement, or for cancellation if fully paid.

Discontinuance of Proceedings

In the event that any proceeding taken by the Trustee on account of any default under the Agreement shall have been discontinued or abandoned for any reason, then and in every such case the Authority, the Trustee and the Registered Owners shall be restored to their former positions and rights under the Agreement, respectively, and all rights, remedies, powers and duties of the Trustee shall continue as though no such proceeding had been taken.

Control of Proceedings

Anything in the Agreement to the contrary notwithstanding, the registered Owners of a majority in principal amount of the Bonds then Outstanding (or, with respect to an event of default described in clause (a) or clause (b) above in “Events of Default,” the Registered Owners of a majority in principal amount of the Bonds Outstanding as to which such event of default has occurred) shall have the right, subject to the Trustee's being indemnified as provided in the Agreement, by an instrument or concurrent instruments in writing executed and delivered to the Trustee, to direct the method of conducting all remedial proceedings to be taken by the Trustee under the Agreement in connection with the Bonds, provided that such direction shall not be otherwise than in accordance with law or the provisions of the Agreement.

Restrictions upon Actions by a Registered Owner

No Registered Owner shall have any right to institute any suit, action or proceeding in equity or at law for the execution of any trust under the Agreement or for any other remedy under the Agreement unless such Registered Owner previously shall have given to the Trustee written notice of the event of default on account of which such suit, action or proceeding is to be instituted, and unless also the Registered Owners of not less than twenty per cent (20%) in principal amount of the Bonds then Outstanding (or, with respect to an event of default described in clause (a) or clause (b) above in "Events of Default," the Registered Owners of not less than twenty per cent (20%) principal amount of the Bonds Outstanding as to which such event of default has occurred) shall have made written request of the Trustee after the right to exercise such powers of right of action, as the case may be, shall have accrued, and shall have afforded the Trustee a reasonable opportunity either to proceed to exercise the powers granted by the Agreement or to institute such action, suit or proceeding in its or their name, and unless, also, there shall have been offered to the Trustee reasonable security and indemnity against the costs, expenses and liabilities to be incurred therein or thereby, and the Trustee shall have refused or neglected to comply with such request within a reasonable time; and such notification, request and offer of indemnity are hereby declared in such every case, at the option of the Trustee, to be conditions precedent to the execution of the powers and trusts of the Agreement or for any other remedy under the Agreement. No one or more Registered Owners of the Bonds shall have any right in any manner whatever by action of such Registered Owner or Owners to affect, disturb or prejudice the security of the Agreement, or to enforce any right under the Agreement except in the manner provided in the Agreement, that all proceedings at law or in equity shall be instituted, had and maintained in the manner provided in the Agreement and for the benefit of all Registered Owners of the Outstanding Bonds, and that any individual rights of action or other right given to one or more of such Registered Owners by law are restricted by the Agreement to the rights and remedies provided in the Agreement.

Nothing in the Agreement or in the Bonds shall, however, affect or impair the absolute, unconditional and unalterable obligation of the Authority to pay when due (whether due on account of stated maturities, scheduled payments, call for redemption or otherwise) the principal and Redemption Price of and interest on the Bonds and the purchase price of any Bond tendered as provided in the applicable Series Resolution, or affect the right of any Registered Owner of a Bond to institute or require the institution of any action or proceeding against the Authority for the enforcement of such payment, or against the Commonwealth for the enforcement of its guaranty of Guaranteed Bonds.

Actions by Trustee

All rights of action under the Agreement or under any of the Bonds, enforceable by the Trustee, may be enforced by it without the possession of any of the Bonds or the production thereof on the trial or other proceeding relative thereto, and any such suit, action or proceeding instituted by the Trustee shall be brought in its name for the benefit of all of the Registered Owners, subject to the provisions of the Agreement.

No Remedy Exclusive

No remedy conferred by the Agreement upon or reserved to the Trustee or to the Registered Owners is intended to be exclusive of any other remedy or remedies provided by the Agreement, and each and every such remedy shall be cumulative and shall be in addition to every other remedy given under the Agreement.

No Delay or Omission Construed as Waiver

No delay or omission of the Trustee or of any Registered Owner to exercise any right or power accruing upon any default shall impair any such right or power or shall be construed to be a waiver of any such default or an acquiescence therein; and every power and remedy given by the Agreement to the Trustee and the Registered Owners of the Bonds, respectively, with respect to events of default, may be exercised from time to time as often as may be deemed expedient.

The Trustee may, and upon written request of the Registered Owners of not less than a majority in principal amount of the Bonds then Outstanding shall, waive any default which in its opinion shall have been remedied before the entry of final judgment or decree in any suit, action or proceeding instituted by it under the provisions of the Agreement or before the completion of the enforcement of any other remedy under the Agreement, but no such waiver shall extend to or affect any other existing or any subsequent default of defaults or impair any rights or remedies consequent thereon.

Notice of Default

The Trustee shall mail to all Registered Owners of Bonds then Outstanding at their addresses as they appear on the registration books written notice of the occurrence of any event of default described in clause (a) or clause (b) above in "Events of Default" promptly upon the occurrence thereof and of any other event of default described under "Events of Default" within thirty (30) days after the Trustee shall have received written notice that any such event of default has occurred and any applicable grace period shall have expired. The Trustee shall not, however, be subject to any liability to any Registered Owner by reason of its failure to mail any such notice.

CONCERNING THE TRUSTEE

Indemnity

The Trustee shall be under no obligation to institute any suit, or to take any remedial proceeding under the Agreement, or to enter any appearance or in any way defend in any suit in which it may be made defendant, or to take any steps in the execution of the trusts created by the Agreement or in the enforcement of any rights and powers under the Agreement, until it shall be indemnified to its satisfaction against any and all costs and expenses, outlays and counsel fees and disbursements and other reasonable disbursements, and against all liability; the Trustee may, nevertheless, begin suit, or appear in and defend suit, or do anything else in its judgment proper to be done by it as such Trustee, without indemnity, and in such case the Authority shall reimburse the Trustee from the Revenues of any Project for all costs and expenses, outlays and

counsel fees and disbursements and other reasonable disbursements properly incurred in connection therewith. If the Authority shall fail to make such reimbursement, the Trustee may reimburse itself from any moneys in its possession under the provisions of the Agreement from which the payment of fees and expenses of the Trustee is not prohibited by the Agreement and shall have a first and prior lien on such moneys for that purpose over any of the Bonds Outstanding under the Agreement.

Limitation on Obligations

The Trustee shall be under no obligation to effect or maintain insurance or to renew any policies of insurance or to inquire as to the sufficiency of any policies of insurance carried by the Authority, or to report, or make or file claims or proof of loss for, any loss or damage insured against or which may occur, or to keep itself informed or advised as to the payment of any taxes or assessments, or to require any such payment to be made. The Trustee shall have no responsibility in respect of the construction or operation of any Project, the validity or sufficiency of the Agreement or the due execution or acknowledgment thereof, or in respect of the validity of the Bonds or the due execution or issuance thereof except as represented by its own authentication, or in respect of the validity or enforceability of the guaranty by the Commonwealth executed on any Guaranteed Bond. The Trustee shall be under no obligation, except as otherwise expressly required in the Agreement, to see that any duties herein imposed upon the Authority, the Architect, the Engineer, any investment adviser appointed by the Authority, or any party other than itself, or any covenants in the Agreement on the part of any party other than itself to be performed, shall be done or performed, and the Trustee shall be under no obligation for failure to see that any such duties or covenants are so done or performed.

Notice of Default

In addition to any other notices required to be given by the Trustee under the Agreement, if on the fifteenth day of the month (or, if such fifteenth day is not a business day, on the next succeeding business day) before the date which shall be one or more of a due date for a payment of interest on Guaranteed Bonds or of a Sinking Fund Installment respecting Guaranteed Bonds or a maturity date for Guaranteed Bonds then Outstanding, the moneys held by the Trustee for or to be deposited prior to such due date to the credit of any subaccount of the Interest Account, any subaccount of the Sinking Fund Account or any subaccount of the Principal Account shall be less than the amount required on such date respectively to pay in full such interest then due, to pay such Sinking Fund Installment then due or to pay the principal of all such Guaranteed Bonds then maturing, all as the case may be, the Trustee shall on such fifteenth day (or next succeeding business day) deliver or cause to be delivered to the offices of the Secretary of Administration and Finance and of the Treasurer and Receiver-General of the Commonwealth a notice addressed to said officials and shall give copies thereof to the Authority and to the purchasers in the manner provided in the Agreement. Such notice shall state (a) the amount or amounts to become due, the nature thereof and the due date, (b) the amount or amounts of moneys held by the Trustee on such business day for the credit of the pertinent Account or Accounts and subaccount or subaccounts, (c) the amount or amounts of moneys held by the Trustee on such business day for the credit of the Section 10 Reserve Fund, each Debt Service Reserve Fund or Multi-Series Debt Service Reserve Fund, the Optional Redemption Account, the Rate Stabilization Fund and any Account in the Property Fund which are available for the payment of such interest, such Sinking Fund Installment or such maturing principal amount, all as the case may be.

If the University Trustees shall be obligated to pay any such amount from Pledged Funds, the Trustee shall include in its notice a request that the University Trustees transfer or cause to be transferred applicable Pledged Funds forthwith, unless such request is otherwise required to be made by any applicable Series Resolution. If (a) the University Trustees shall be obliged by the Contract respecting Outstanding Guaranteed Bonds to give a notice respecting the availability of moneys for said purposes by said dates and (b) such notice has been given and (c) such notice states that moneys are not expected to be available by said dates in amounts sufficient to meet such purposes in full and (d) the moneys held by the Trustee as stated in the last sentence of the first paragraph above in "Notice of Default" are not sufficient, when added to whatever available amount is stated in such notice from the University Trustees, to meet such purposes in full, then the Trustee shall include in the notice to be given by it a request that the Commonwealth make funds available to honor the Commonwealth Guaranty under all such Contracts.

Except as provided above, the Trustee shall not be obliged to take notice or be deemed to have notice of any prospective event of default under the Agreement. The Trustee shall not be obliged to take notice or be deemed to have knowledge of any event of default under the Agreement, except for events of default described in clause (a) or clause (b) above in "Defaults; Remedies - Events of Default," unless an officer in the corporate trust department of the Trustee has received written notice of such event of default by the Authority or the Registered Owners of not less than twenty per cent (20%) in principal amount of the Bonds Outstanding.

Resignation

The Trustee may resign at any time and thereby become discharged from the trusts created by the Agreement by notice in writing to be given to the Authority and the Registered Owners at least thirty (30) days before such resignation is to take effect, but such resignation shall take effect immediately upon the appointment of a new Trustee under the Agreement, if such new Trustee shall be appointed before the time limited by such notice and shall then accept the trusts of the Agreement.

Removal

The Trustee may be removed at any time by an instrument or concurrent instruments in writing, signed by the Registered Owners of not less than a majority in principal amount of the Bonds then Outstanding and filed with the Authority (and the Authority shall promptly deliver to the Trustee a reproduction copy of each such instrument) or by resolution of the Authority.

The Trustee may also be removed at any time for any breach of trust or violation of the Agreement by any court of competent jurisdiction upon application by the Registered Owners of not less than five per cent (5%) in principal amount of the Bonds then Outstanding.

Appointment of Successor Trustee

If at any time the Trustee shall resign, be removed, be dissolved or otherwise become incapable of acting, or the bank or trust company acting as Trustee shall be taken over by any governmental official, agency, department or board, the position of Trustee shall thereupon become vacant. If at any time moneys on deposit with the Trustee shall not be secured as

required by the Agreement, a vacancy in the position of Trustee may be declared by a resolution duly passed by the Authority. If the position of Trustee shall become vacant for any of the foregoing reasons or for any other reason, the Authority shall appoint a Trustee to fill such vacancy. The Authority shall send written notice of any such appointment to the Registered Owners, and the Trustee whose position is being filled shall make available to the Authority at all times during normal business hours its registration books and permit the Authority to copy such registration books.

At any time within one year after any such vacancy shall have occurred, the Registered Owners of a majority in principal amount of the Bonds then Outstanding, by an instrument or concurrent instruments in writing, signed by such Registered Owners or their attorneys in fact or legal representatives and filed with the Authority, may appoint a successor Trustee which shall supersede any Trustee theretofore appointed by the Authority. Copies of such instrument shall be delivered promptly by the Authority to the predecessor Trustee and to the Trustee so appointed by the Registered Owners.

If no appointment of a successor Trustee shall be made pursuant to the foregoing provisions, the Registered Owner of any Outstanding Bond or any retiring Trustee may apply to any court of competent jurisdiction to appoint a successor Trustee. Such court may thereupon, after such notice, if any, as such court may deem proper and prescribe, appoint a successor Trustee.

Any Trustee hereafter appointed shall be a bank or trust company within the Commonwealth (as the words “within the Commonwealth” are used in the Enabling Act) duly authorized to exercise corporate trust powers and subject to examination by federal or state authority, of good standing, having a combined capital and surplus aggregating not less than One Hundred Million Dollars (\$100,000,000).

The Trustee shall not be required to be “within the Commonwealth” if the Enabling Act no longer contains such requirement.

SUPPLEMENTAL AGREEMENTS

Supplemental Agreements without Consent of Registered Owners

The Authority and the Trustee may, from time to time and at any time, without the consent of the Registered Owners, enter into agreements supplemental to the Agreement as shall not be inconsistent with the terms and provisions of the Agreement (which supplemental agreements shall thereafter form a part of the Agreement)

(a) to cure any ambiguity or formal defect or omission in the Agreement or in any supplemental agreement, or

(b) to grant to or confer upon the Trustee for the benefit of the Registered Owners any additional rights, remedies, powers, authority or security that may lawfully be granted to or conferred upon the Registered Owners or the Trustee, or

(c) to add to the covenants and agreements of the Authority other covenants and agreements thereafter to be observed by the Authority which shall not be inconsistent with the terms and provisions of the Agreement or to surrender any right or power reserved to or conferred upon the Authority in the Agreement, or

(d) to add any amendment described in “Establishment and Application of Funds and Accounts - Rebate Fund,” or

(e) for any other purpose, provided that (i) such supplemental agreement (A) does not adversely affect the interest of any Registered Owner and (B) does not make any change in the Agreement prohibited by clauses (a) through (e) below in “Modification of Agreement” and (ii) the Authority and the Trustee receive an opinion of bond counsel to the Authority to the effect that such supplemental agreement complies with subclauses (A) and (B) of this clause.

If the interest on obligations issued in bearer form should at any time qualify for exclusion from gross income for federal income tax purposes, or if the Authority desires to issue obligations the interest on which is not excludable from gross income for federal income tax purposes, and if in either case applicable law permits the issuance by the Authority of obligations in bearer form, the Agreement may be amended without the consent of the registered Owners to permit the issuance under the Agreement of obligations in such form; provided that the Authority and the Trustee receive an opinion of bond counsel to the Authority to the effect that applicable law permits the issuance by the Authority of obligations in bearer form and that such amendment will not affect the exclusion from gross income for federal income tax purposes of the interest on any Bond previously issued under the Agreement.

Any provision of the Agreement with respect to any Series of Bonds secured by a Credit Facility may be amended by the Series Resolution authorizing such Series to take into account the requirements or reasonable requests of the issuer of such Credit Facility. Such amendments may include, but not be limited to, amendments with respect to the exercise of rights of the Registered Owner of the Bonds of such Series by the issuer of such Credit Facility and subrogation of the issuer of such Credit Facility to the rights of such Registered Owners.

Modification of Agreement

The Registered Owners of not less than fifty-one percent (51%) in aggregate principal amount of the Bonds then Outstanding shall have the right, from time to time, to consent to and approve the execution by the Authority and the Trustee of such agreement or agreements supplemental to the Agreement as shall be deemed necessary or desirable by the Authority for the purpose of modifying, altering, amending, adding to or rescinding, in any particular, any of the terms or provisions contained in the Agreement or in any supplemental agreement; provided, however, that nothing contained in the Agreement shall permit, or be construed as permitting (a) an extension of the maturity of the principal of, the due date of any Sinking Fund Installment or respecting the due date of any interest payment due on any Bond, or (b) a reduction in the principal amount of any Bond or the Redemption Price thereof or the rate of interest thereon, or (c) the creation of a lien or pledge of Revenues ranking prior to or on a parity with the lien or pledge created by the Agreement, or (d) a preference or priority of any Bond or Bonds over any other Bond or Bonds other than as provided in the Agreement or (e) a reduction in the aggregate

principal amount of the Bonds required for consent to such supplemental agreement. Nothing contained in the Agreement, however, shall be construed as making necessary the approval by Registered Owners of the execution of any supplemental agreement or agreements described above in "Supplemental Agreements without Consent of Registered Owners."

If the Registered Owners of not less than fifty-one per cent (51%) in aggregate principal amount of the Bonds Outstanding at the time of the execution of such supplemental agreement shall have consented to and approved the execution thereof as provided in the Agreement, no Registered Owner shall have any right to object to the execution of such supplemental agreement, or to object to any of the terms and provisions contained therein or the operation thereof, or in any manner to question the propriety of the execution thereof, or to enjoin or restrain the Trustee or the Authority from executing the same or from taking any action pursuant to the provisions thereof.

Responsibilities of Trustee

In each and every case provided for in this section "Supplemental Agreements," the Trustee shall be entitled to exercise its discretion in determining whether or not any proposed supplemental agreement, or any term or provision therein contained, is proper or desirable, having in view the purposes of such instrument, the needs of the Authority, the rights and interests of the Registered Owners and the rights, obligations and interests of the Trustee, and the Trustee shall not be under any responsibility or liability to the Authority or to any Registered Owner or to anyone whomsoever for its refusal in good faith to enter into any such supplemental agreement if such agreement is deemed by it to be contrary to the provisions of this section. The Trustee shall be entitled to receive, and shall be fully protected in relying upon, the opinion of any counsel approved by it, who may be counsel for the Authority, as conclusive evidence that any such proposed supplemental agreement does or does not comply with the provisions of the Agreement, and that it is or is not proper for it under the applicable provisions of the Agreement, to join in the execution of such supplemental agreement.

DEFEASANCE

Release of Agreement

If the Authority shall pay or cause to be paid, or there shall otherwise be paid, to the Registered Owners of all Bonds the principal or Redemption Price, if applicable, and interest due or to become due thereon, at the times and in the manner stipulated therein and in the Agreement, or if all Outstanding Bonds shall be deemed to be paid as provided in the following paragraph, and if all other sums, if any, then payable to the Trustee under the shall be paid, or the payment of such sums shall be provided for to the reasonable satisfaction of the Trustee, then the pledge of any Revenues and other moneys and securities pledged under the Agreement and all covenants, agreements and other obligations of the Authority to the Registered Owners, shall thereupon cease, terminate and become void and be discharged and satisfied. In such event, the Trustee shall cause an accounting for such period or period as shall be requested by the Authority to be prepared and filed with the Authority and, upon the request of the Authority, shall execute and deliver to the Authority all such instruments as may be desirable to evidence such discharge and satisfaction, and the Trustee shall pay over or deliver to the Authority all moneys or

securities held by it pursuant to the Agreement which are not required for the payment of principal or Redemption Price, if applicable, of or interest on Bonds not theretofore surrendered for such payment or redemption, and for the payment of such other amounts. If the Authority shall pay or cause to be paid, or there shall otherwise be paid, to the Registered Owners of any Outstanding Bonds the principal or Redemption Price, if applicable, and interest due or to become due thereon, at the times and in the manner stipulated therein and in the Agreement, or if any Outstanding Bonds shall be deemed to be paid as provided in the following paragraph, such Bonds shall cease to be entitled to any lien, benefit or security under the Agreement, and all covenants, agreements and obligations of the Authority to the Registered Owners of such Bonds shall thereupon cease, terminate and become void and be discharged and satisfied.

Any Outstanding Bonds shall prior to the maturity or redemption date thereof be deemed to have been paid within the meaning and with the effect expressed in the previous paragraph if (a) in case any of said Bonds are to be redeemed on any date prior to their maturity, the Authority shall have given to the trustee in form satisfactory to it irrevocable instructions to give notice of redemption of such Bonds on said date, (b) there shall have been deposited with the Trustee either moneys in an amount which shall be sufficient, or Investment Obligations (including any Investment Obligations issued or held in book-entry form on the books of the Department of the Treasury of the United States, which are irrevocably payable to the Trustee and in form satisfactory to the Trustee) the principal of and the interest on which when due will provide the Trustee with moneys which, together with the moneys, if any, deposited with the Trustee at the same time, shall be sufficient, to pay when due the principal or Redemption Price, if applicable, and interest due and to become due on said Bonds on and prior to the redemption date or maturity date thereof, as the case may be, and (c) in the event said Bonds will not be redeemed within the next succeeding sixty (60) days, the Authority shall have given the Trustee in form satisfactory to it irrevocable instructions to give notice, in the manner and at the time specified in the Agreement, that the deposit required by (b) above has been made with the Trustee and that said Bonds are deemed to have been paid in accordance with this paragraph and stating such maturity or redemption date or dates upon which moneys are to be available for the payment of the principal or Redemption Price, if applicable, on said Bonds. None of Investment Obligations, moneys deposited with the Trustee pursuant to this paragraph or principal or interest payments on any such Investment Obligations shall be withdrawn or used for any purpose other than, and shall be held in trust for, the payment of the principal or Redemption Price, if applicable, and interest on said Bonds; provided that any cash received from such principal or interest payments on such Investment Obligation deposited with the Trustee, if not needed for such purpose, shall, to the extent practicable, be reinvested in Investment Obligation maturing at times and in amounts sufficient to pay when due the principal or Redemption Price, if applicable, and interest to become due on said Bonds on and prior to such redemption date or maturity date, as the case may be, and interest earned from such reinvestment shall be paid over to the Authority, as received by the Trustee, free and clear of any trust, lien or pledge. For the purposes of this paragraph, Investment Obligations shall mean and include only such securities as are described in clause (a) of the definition of "Investment Obligations" in "Definitions" which shall not be subject to redemption prior to their maturity.

Anything in the Agreement to the contrary notwithstanding, the Trustee shall notify the Authority in writing of any moneys held by the Trustee in trust for the payment and discharge of

any of the Bonds which remain unclaimed six months prior to the date when such moneys would escheat under applicable law and shall, at the written request of the Authority, pay such moneys to the Authority as its absolute property and free from trust, or, if the Authority does not so request in writing, or if such payment is not permitted under applicable escheat law, shall apply such moneys as provided by such applicable law, and the Trustee shall upon such payment or application be released and discharged with respect thereto and the Registered Owners shall look only to the Authority or as such applicable law may provide for the payment of such Bonds, the Authority or any other entity being liable only to the extent of funds received from the Trustee (without regard to any interest thereon received from the Trustee) and having no liability for interest on any such funds.

MISCELLANEOUS PROVISIONS

Rights under Agreement

Except as otherwise expressly provided in the Agreement, nothing in the Agreement expressed or implied is intended or shall be construed to confer upon any person, firm or corporation other than the parties hereto and the Registered Owners any right, remedy or claim, legal or equitable, under or by reason of the Agreement or any provisions hereof, the Agreement and all its provisions being intended to be and being for the sole and exclusive benefit of the parties hereto and the Registered Owners.

Effect of Partial Invalidity

In case any one or more of the provisions of the Agreement or of the Bonds shall for any reason be held to be illegal or invalid, such illegality or invalidity shall not affect any other provision of the Agreement or of the Bonds, but the Agreement and the Bonds shall be construed and enforced as if such illegal or invalid provision has not been contained therein. In case any covenant, stipulation, obligation or agreement contained in the Bonds or in the Agreement shall for any reason be held to be in violation of law, then such covenant, stipulation, obligation or agreement shall be deemed to be the covenant, stipulation, obligation or agreement of the Authority to the full extent permitted by law.

Effect of Covenants, etc.

All covenants, stipulations, obligations and agreements of the Authority contained in the Agreement shall be deemed to be covenants, stipulations, obligations and agreements of the Authority to the full extent permitted by law. No covenant, stipulation, obligation or agreement contained in the Agreement shall be deemed to be a covenant, stipulation, obligation or agreement of any present or future member, officer, agent or employee of the Authority in his individual capacity, and neither any member of the Authority nor any officer thereof executing the Bonds shall be liable personally on the Bonds or be subject to any personal liability by reason of the issuance thereof. No member, officer, agent or employee of the Authority shall incur any liability in acting or proceeding or in not acting or not proceeding, in good faith, reasonably and in accordance with the terms of the Agreement and the Enabling Act.

The Agreement is executed with the intent that the laws of the Commonwealth shall govern its construction.

Reference to Interest as Excludable from Gross Income

All references in the Agreement with respect to the exclusion, excludability, inclusion or includability or the like of interest from gross income for federal income tax purposes shall apply only to Bonds and the interest thereon as to which an opinion of counsel has been rendered to the effect that interest on such Bonds is excludable from gross income for federal income tax purposes.

[Intentionally Left Blank]

SUMMARY OF CERTAIN PROVISIONS OF THE CONTRACT

Except as otherwise expressly provided herein, capitalized terms shall be used as defined in the Trust Agreement dated as of November 1, 2000 by and between the Authority and the trustee named therein or its successor (the "Project Trust Agreement" or the Trust Agreement dated as of December 1, 2000 by and between the Authority and the trustee named therein or its successor (the "Facilities Trust Agreement" and together with the Project Trust Agreement, the "Trust Agreements"). Bonds issued pursuant to the Project Trust Agreement are referred to herein as "Project Revenue Bonds," and bonds issued pursuant to the Facilities Trust Agreement are referred to herein as "Facilities Revenue Bonds." The trustees named in each Trust Agreement are referred to herein as the "Bond Trustee."

PROJECTS**General**

From time to time, upon the request of the University, the Authority undertakes Projects on behalf of the Commonwealth and the University. The Prior Projects are listed in the Contract. Additional Projects will become subject of the terms of the Contract upon designation thereof by the Authority and the University, as evidenced by the listing of such Projects on a Certificate delivered by the Authority and the University. Delivery of the Certificate makes the Projects listed thereon, in addition to the Prior Projects, subject to the terms of the Contract, so long as any bonds or notes of the Authority remain outstanding.

Undertaking and Completion of Projects by the Authority and the University

The Authority shall proceed with all reasonable speed to undertake, acquire, plan, construct, and complete the Projects in accordance with the written requests authorized by the University of Massachusetts Board of Trustees (the "University Trustees"), subject to such further approvals by the University Trustees and other officials as may be required by the Act or the Contract. The Authority may use any mode of procurement of acquisition, design and construction with regard to each Project that is from time to time permitted by the Act or other applicable law.

The Authority may engage such consulting architects, engineers, and other experts as it deems advisable in connection with the Projects. The plans and specifications for each of the Projects shall comply, or provide for compliance, with all applicable building codes, laws relating to health, safety and access and other applicable laws, and with all applicable rules and regulations promulgated thereunder by any governmental authority including without limitation executive orders issued by the Governor of the Commonwealth. Upon award of a contract or contracts for the doing of any work included in, or in connection with any acquisitions of, the Projects, as applicable, the Authority shall provide and maintain competent and adequate architectural and engineering observation of the Projects as the Authority deems appropriate until acceptance thereof by the University Trustees for occupancy. The Authority and the University Trustees shall permit each other free access to the Projects at all times. The Authority shall permit the University Trustees to examine such records of the Authority pertaining to the Projects as the University Trustees may desire, and the University Trustees shall permit the

Authority to examine such records of the University and the Commonwealth pertaining to the Projects as the Authority may desire.

The Authority and the University Trustees shall use their best efforts to cause the Projects to be completed or acquired, as applicable, so as to be ready for use (and, where applicable, occupancy) as promptly as reasonably possible and, upon completion of all work in connection with any of the Projects, the Authority shall furnish or cause to be furnished to the University Trustees a certificate or certificates to the effect that such work has been completed free from defects and inadequacies and otherwise in conformity with the working drawings and detail specifications as amended or modified by any change order or additional work authorizations, that no mechanics', laborers', materialmen's or other liens exist or can be created on the Projects on account of such work, and that the Authority has made payment or cause such payment to be made in full for the doing of the work or acquisition in question, or has made other proper arrangements so that it is no longer liable for any claims for payment for such work or materials or supplies furnished to such portion of the Projects; or that the Authority is disputing any such claims.

During the period the Projects are being undertaken and completed the University Trustees shall also furnish to the site thereof (a) steam or other sources for temporary heating purposes, (b) electricity for temporary light and power and (c) water for construction purposes, such utilities to be furnished at such points and in such manner as is set forth in the working drawings and detail specifications approved by the University Trustees for the doing of work upon the Projects.

Operation, Maintenance and Repair of Projects

The Authority and the University, as applicable, shall administer and operate each of the Projects in accordance with the Act, the Contract and the applicable Trust Agreement.

The University acknowledges that use of the Projects or portions thereof by any individual or entity that is not a state, a political subdivision thereof or an integral part of a state or political subdivision thereof may jeopardize the tax-exempt status of interest on the tax-exempt bonds or notes issued by the Authority. The University will avoid such private use of the Projects, which would jeopardize the tax-exempt status of the tax-exempt bonds or notes. During the time that any tax-exempt bond or note is outstanding, the University will consult with the Authority and with bond counsel to the Authority regarding the impact of any private use of the Projects on the tax-exempt status of such bonds or notes and will not enter into any transaction which might result in a private use without notifying the Authority.

Fees, Rents, Rates and Other Charges for Projects

The Authority or the University, as applicable, shall establish and revise rules and regulations to ensure the use (and, where applicable, occupancy) of, and fix and revise fees, rents, rates and other charges allocable to the Projects as set forth in the Contract.

Such rules and regulations and such fees, rents, rates and other charges shall be so fixed and adjusted in respect of the aggregate of all revenues from or allocable to the Projects

(collectively, the “Revenues”) (x) so as to maintain, so far as consistent with the requirements of the Contract, a reasonable uniformity in charges for like rooms and other accommodations at the University whether or not contained in a project of the Authority and (y) so as to provide Revenues sufficient to:

- (a) pay the cost of maintaining, repairing and operating the Projects;
- (b) pay the fees and expenses of the Bond Trustee, fees and expenses of any paying or fiscal agent appointed by the Authority in connection with the issuance of notes or bonds secured or provided for under the Trust Agreements or other instruments, premiums of insurance maintained by the Authority with respect to the Projects and such other projects and property and rentals payable by the Authority under any lease or leases of land on which the Projects or any other such project or property may be located;
- (c) pay the principal of (including Sinking Fund Installments) and the interest on notes and bonds issued to finance or refinance the Projects, as such principal and interest shall become due and payable;
- (d) pay such portions of the operating and administrative expenses of the Authority (which shall include any amount (the “Rebate Amount”) required by the Internal Revenue Code of 1986, as amended or other applicable law to be rebated by the Authority with respect to tax-exempt bonds or notes to the United States of America and not provided from other funds of the Authority) as the Authority shall deem properly allocable to the Projects;
- (e) pay amounts payable by the Authority under the Series Resolutions, any Derivatives, any Liquidity Facility, any Credit Facility or any other contract or other arrangement with respect to bonds or notes;
- (f) create or maintain reserves, if any, for such of the foregoing purposes as may be provided for in any resolution of the Authority as required or permitted by either the Trust Agreement or the Contract; and
- (g) pay the amount, if any, required by Section 19C of the Enabling Act to be paid to the Treasurer and Receiver-General of the Commonwealth out of such revenues.

Other Obligations of the University for Projects

The University Trustees shall make available to the Authority the services of officers and employees of and facilities in the University for the performance of any and all activities with respect to the Projects as necessary to operate them in furtherance of the purposes of the University and to maintain the Projects in good order and repair, as determined by the University.

In performing the foregoing services the University Trustees may act in the name of the Commonwealth or in their name, as may be consistent with law, and in their discretion as to the manner, method and time of performance.

The obligation of the University Trustees under the Contract to operate the Projects, keep them in good order and repair and maintain them shall include, but not be limited to, the

furnishing of all supplies and materials needed or desirable for such operation, keeping in good order and repair, and maintenance, the making of all interior and exterior repairs to the buildings and structures included in the Projects and all repairs to other improvements and to equipment and furnishings included in the Projects, the maintenance of the Projects and the replacement, restoration and reconstruction of any structure, improvement or item of equipment or furnishings or portion thereof worn out, damaged or destroyed by whatever cause.

Other Obligations of the Authority for Projects

The Authority shall at all times conduct its business and affairs in such manner that:

(1) each of the Projects will be separately and distinctly accounted for relative to any other project or enterprise developed, administered or engaged in by the Authority; and

(2) such portion of the office and general administrative expenses of the Authority as is charged to each of the Projects and the basis upon which the same is apportioned can be readily determined.

The Authority shall account separately for all revenues, income, reserves and funds, from whatever source, received or held by the Authority for:

(1) the undertaking, acquisition, completion, operation or maintenance of the Projects;

(2) for any of the purposes set forth in any resolution authorizing the issue of bonds or notes or in the Trust Agreements or other instruments;

(3) received by or for the account of the Authority as proceeds of insurance upon or as damages award for the taking or condemnation of any of the Projects or any portion thereof;

(4) for Projects and property of the Authority for which the Authority has issued notes or bonds;

(5) for bonds and notes to be refunded by bonds issued under either Trust Agreement;

provided that the Authority may, except as otherwise provided in the Trust Agreements or other instrument or any Authority resolution relating to bonds or notes to be refunded by bonds to be issued under the Trust Agreements, mingle all revenues, income, reserves and funds, from whatever source, received or held by the Authority for the purposes of or in connection with the undertaking, completion, operation or maintenance of any Project financed or to be financed or refinanced by bonds or notes secured by the Trust Agreements or for like purposes of or in connection with any other Project or property of the Authority the revenues from which are pledged or assigned by the Trust Agreements.

Pursuant to the Contract, the Authority authorizes and directs the University Trustees to make and revise rules and regulations concerning the conduct of persons while on or in the Projects and the bringing into or onto, keeping in or on and removal from the Projects of property of others than the Authority, to enforce such rules and regulations and to establish and

impose penalties for violation of the same. All such rules, regulations and penalties shall be subject to the approval of the Authority, which shall not be reasonably withheld, shall comply with the Act, the Contract, any other contract or agreement between the Authority and the University Trustees relating to the Projects and the Trust Agreements, and, shall be made and revised so as to be nearly identical as possible with rules, regulations and penalties from time to time promulgated by the Trustees respecting other like facilities under their control.

Insurance

The Authority shall purchase and maintain in effect with respect to each of its Projects policies of insurance and fidelity bonds against such risks and losses and in such amounts as it shall deem to be reasonable.

ISSUANCE OF BONDS OR NOTES

General

From time to time, the Authority shall issue bond or notes to achieve its corporate purposes in undertaking Projects on behalf of the Commonwealth and the University and paying related expenses or to refund prior indebtedness of the Authority or other indebtedness with respect to the University, all as set forth in the Act. The bonds or notes shall be issued pursuant to the Trust Agreements or other instruments permitted by the Act. Prior Bonds subject to the terms of the Contract are listed in the Contract. Additional bonds or notes will become subject to the terms of the Contract upon designation thereof by the Authority and the University, as set forth in the Certificate related to such bonds or notes. The Certificate shall set forth (i) whether the bonds or notes constitute Facility Revenue Bonds, Project Revenue Bonds or other bonds or notes issued under the Trust Agreements or other instrument, and (ii) the aggregate principal amount of such indebtedness. The Authority shall apply the proceeds of the bonds or notes as set forth in the Act, the applicable Trust Agreement, the applicable Series Resolution and the Certificate with respect to such bonds or notes.

Commonwealth Guaranty for Certain Bonds and Notes

In accordance with the Act, certain bonds and notes of the Authority will be guaranteed by the Commonwealth with the approval of the University Trustees, acting on behalf of the Commonwealth. Prior Bonds of the Authority guaranteed by the Commonwealth are listed in the Contract (the "Prior Guaranteed Bonds"). From time to time, the Authority may issue additional bonds or notes guaranteed by the Commonwealth, as determined by the Authority and the University Trustees, on behalf of the Commonwealth, as set forth in the Certificate with respect to such bonds or notes.

With respect to the Prior Guaranteed Bonds and other guaranteed bond or notes so designated in a Certificate, the Commonwealth agrees to guarantee to the Owners thereof and to the Bond Trustee, as trustee for such Owners, the payment of the principal of and interest on all of the guaranteed bonds or notes as the same become due and payable, and in case the Authority shall default in making any such payment as and when the same shall be due and payable, the Commonwealth agrees to make such payment as the same becomes due and payable and pledges

its full faith and credit for the performance of this guaranty, provided that the total outstanding amount of bonds and notes issued by the Authority and guaranteed by the Commonwealth under the Act shall not exceed the amount from time to time authorized by the Act to be so guaranteed.

Such guaranteed bonds or notes shall include a guaranty in the form of Exhibit B to the Contract executed by the University Trustees, on behalf of the Commonwealth.

No provision of the Contract shall create or be deemed to create any obligation by the Commonwealth to appropriate funds for any purposes under the Contract other than performance of the Commonwealth Guaranty on the guaranteed indebtedness.

In accordance with the Act, the Section 10 Reserve Account shall be funded in connection the issuance of guaranteed bonds or notes in an amount determined in accordance with the Act and the Trust Agreement. Moneys in the Section 10 Reserve Fund may be applied as set forth in the Trust Agreements and Series Resolutions.

Special Provisions for Facilities Revenue Bonds

A Capital Improvements Reserve Account shall be funded in connection the issuance of Facilities Revenue Bonds in an amount determined by the Authority, in consultation with the University. Moneys in the Capital Improvements Reserve Account may be applied to any lawful purpose of the Authority, all as set forth in the Trust Agreements and Series Resolutions.

Special Provisions for Derivatives

In connection with any Derivatives related to bonds or notes issued by the Authority, the Authority shall establish a General Reserve Fund. The Authority shall deposit into the General Reserve Fund from time to time, amounts received by the Authority on account of the Derivatives related to the bonds or notes, initially based on an amount equal to 0.19875% per annum of the notional amounts thereof or such other amount as determined by the Authority and set forth in a Series Resolution with respect the bonds or notes related to the Derivative. Amounts on deposit in the General Reserve Fund may be invested in any investment by which the Authority is from time to time permitted by law to invest its moneys. Moneys and investments in the General Reserve Fund shall be held separately from all other moneys and investments of the Authority. Moneys in the General Reserve Fund may be applied to any lawful purpose of the Authority. Moneys may be withdrawn from the General Reserve Fund by any authorized officer of the Authority.

SECURITY FOR PAYMENT OF BONDS AND NOTES

General Obligation of the University

Pursuant to the Contract, the University Trustees pledge all funds of the University permitted by law to be applied thereto, to the making of all payments required under the Contract, including without limitation all payments of debt service on bonds or notes issued by the Authority under the Act and the Trust Agreements or other instruments and payments with respect to any Liquidity Facility, Credit Facility or Derivatives. *Notwithstanding the foregoing, this pledge does not apply to payments with respect to bonds or notes issued for Specific Revenue*

Projects under the Facilities Trust Agreement.

Without limiting the generality of the foregoing, the University Trustees, in the name and on behalf of the Commonwealth, pledge to the making of payments required by the Contract Spendable Cash and Investments, Authority Eligible Gifts, University Eligible Gifts and Trust Funds, each as defined in Exhibit C to the Contract.

Pledge of the University for Bonds and Notes Related to Specific Revenue Projects

Pursuant to the Contract, the University Trustees pledge to the making of all payments required under the Contract with respect to bonds or notes issued for Specific Revenue Projects under the Facilities Trust Agreement, revenues generated from the rates and charges established by the University for such Specific Revenue Project, including amounts which constitute Authority Eligible Gifts, University Eligible Gifts and Trust Funds. Amounts payable under the Contract with respect to Specific Revenue Projects are not secured by the general obligation of the University, including without limitation Spendable Cash and Investments.

General Provisions Related to Pledged Funds

All Revenues collected or received by the Commonwealth or the University, from whatever source, as payment of fees, rents, rates or other charges for the use and occupancy of a Project, including without limitation Revenues from Specific Revenue Projects and from Spendable Cash and Investments, and needed to pay the Certified Amount shall be held in trust by the University for the Authority and paid to the Authority, as applicable, separate from all other moneys held by the University or the Commonwealth. Such amounts (“Pledged Funds”) shall be applied solely as provided in the Act, the Contract, the Series Resolutions or the Trust Agreements and shall be remitted by the University Trustees to the Bond Trustee under the Trust Agreements or the Authority, as applicable, at such times and in such amounts as may be directed in writing by the Authority in accordance with the Authority's annual certification process described below.

Pledged Funds are and will be free and clear of any pledge, lien, charge or encumbrance thereon or with respect thereto prior to the pledge created by the Contract and the University Trustees shall take all actions necessary to protect and effectuate such pledge provided, however, that nothing in this Section shall be deemed to limit the right of the University Trustees, to the extent permitted by law, to create a pledge, lien or other charge on any or all such Pledged Funds to other Projects and bonds and notes issued for such Projects in accordance with the Contract or on a basis junior and subordinate to the pledge created by the Contract.

The University shall cause to be available in Spendable Cash and Investments at all times amounts sufficient to pay such portion of the Certified Amount (hereinafter defined) required to be paid therefrom and to provide for any other payments required under the HEFA Financing Agreements.

Authority Certification of Amounts Due under the Contract

On or before March 1 of each year for the twelve-month period commencing the next succeeding November 1, the Authority shall certify in writing to the University Trustees (and

provide a copy to the Bond Trustee) the amount estimated for each component of the Projects, detailing (i) the Authority's projected debt service costs and fees and expenses related to the bonds or notes, including without limitation any payments with respect to any Liquidity Facility, Credit Facility or Derivatives, (ii) the Authority's projected operating and administrative costs, (iii) any projected required deposits to reserves, including without limitation the Section 10 Reserve Fund, Capital Improvements Reserve Fund and the General Reserve Fund, (iv) any projected payments to the Commonwealth pursuant to Section 19C of the Act, (v) any additional reserves it may propose to create or augment consistent with the Trust Agreements and (vi) the amount, if any, payable to the University Trustees to reimburse Specific Revenue Project expenses incurred by the University Trustees (collectively, the "Certified Amount"). Such certificate, which may be revised from time to time as necessary, shall state the dates within such period when any portion of the Certified Amount shall be due, the portion of the Certified Amount due on such dates, the payee of such amount and payment instructions, the source of such payments and the amount payable from each source. The Certified Amount shall also detail the fees, rents, rates and other charges proposed for the use of the Projects, which shall be fixed so as to be sufficient, in the aggregate, together with other available moneys, to cover all of the costs and transfers to reserves as aforesaid allocable to the Projects.

University Certification of Spendable Cash and Investments

On or before April 1 of each year, the University shall certify in writing to the Authority whether or not there are sufficient funds in Spendable Cash and Investments to pay the Certified Amounts and, if so, that such funds will be held in trust in Spendable Cash and Investments for the equal and ratable benefit of the Authority and each other person or entity for whose benefit amounts will be applied to the payment of amounts required to be paid therefrom and will not be expended for any other purpose. Such funds will be so held and not expended for any other purpose; provided, however, that if any portion of the Certified Amount is paid from University Eligible Gifts, Authority Eligible Gifts, other Authority revenues or Revenues from Specific Revenue Projects, then after any such payment an amount equal to such portion so paid need no longer be held in Spendable Cash and Investments.

The University Trustees authorize and, pursuant to Chapter 3A of Chapter 75 of the Massachusetts General Laws and other applicable law or resolution, delegate power to the President of the University, the Senior Vice President for Administration and Finance & Treasurer of the University and any such other officer to deliver the certificate described in the preceding paragraph and to do all other acts and things necessary or desirable to cause the University to comply with its obligations under the Contract.

If such certification states that sufficient funds are not available in Spendable Cash and Investments to pay such amounts, such certification shall state the amount of funds in Spendable Cash and Investments that are available to pay a portion of such amounts and a ratable portion of such funds in Spendable Cash and Investments shall be held in trust for the benefit of the Authority to be applied to the payment pro rata of all amounts payable to or for the account of the Authority from Spendable Cash and Investments. The University will continue to be obligated to pay any portion (or, if applicable, all) of the Certified Amount payable from all funds of the University permitted by law to be applied thereto notwithstanding any shortfall in amounts available in Spendable Cash and Investments.

If such certification states that sufficient funds are not available in Spendable Cash and Investments to pay such amounts, or if the Authority has not received such certificate as required by the Contract, the Authority will promptly adopt or revise mandatory fees, rates, rents and other charges for the use of the Projects and any portion thereof to be charged and billed to and collected from students in the University and provide for the billing, collection and remittance of such fees rates, rents and other charges by the University Trustees at such times and in such manner as in the judgment of the Authority will produce moneys sufficient and available to meet the requirements of the Contract. The Authority shall promptly notify the University Trustees in writing of the matters set forth in the foregoing sentence. Pursuant to the Contract, the University Trustees approve, and agree to confirm such approval from time to time, all fees, rents, rates and other charges adopted or revised by the Authority pursuant to this paragraph and agree to cause the same to be billed to and collected from students in the University as the Authority may provide and remitted as the Authority may provide.

Payments from Pledged Funds

The University Trustees on behalf of the University will transfer to the Authority or the Bond Trustees, as applicable, amounts required to pay the Certified Amount (defined in *Authority Certification of Amounts Due under the Contract* above), including but not limited to the amounts necessary to pay principal of, premium if any, and interest on the bonds and notes issued by the Authority from all funds of the University legally permitted to be applied thereto, including, but not limited to University Eligible Gifts, Authority Eligible Gifts, other available Revenues of the University, including without limitation, amounts available in the University's Spendable Cash and Investments.

Expenses incurred by the University Trustees in connection with the repair and maintenance of the Projects shall be paid for or reimbursed to the University Trustees from the Pledged Funds. The Authority, in its discretion, may (a) authorize the University Trustees to deduct from the Pledged Funds, prior to remittance thereof to the Bond Trustee, amounts equal to amounts budgeted by the Authority for such expenses, or (b) instruct the University Trustees to certify to the Authority the amount of such expenses, if any, incurred by the University Trustees and not authorized to be deducted, such amounts to be reimbursed to the University Trustees from Pledged Funds transmitted to the Bond Trustee. Any amount deducted by the University Trustees pursuant to (a) and not expended for such expenses during the period for which it was budgeted by the Authority shall be certified to the Authority by the University Trustees within 30 days and shall be retained by the University Trustees and used solely for expenses of repair and maintenance of the Projects. In the event the Authority incurs an expense for repair or maintenance of the Projects, the University Trustees shall remit to the Authority such portion of the Pledged Funds deducted under (a) as is necessary to reimburse the Authority.

Defaults And Rights

Upon the failure of the Authority to pay debt service on any bond or note issued by the Authority (other than as a result of the failure of the University Trustees under the Contract) or to observe or perform any other agreement or condition under the Contract (or failure to cure the same), after 15 days notice thereof to the Authority by the University Trustees, the Authority shall be deemed to be in default under the Contract. Thereupon, the Commonwealth may, acting

by and through the University Trustees, assume the rights and obligations of the Authority under the Contract until such time as the University Trustees may declare the default to be cured.

Upon the failure of the Authority or the University Trustees to make any payment required under the provisions of the Contract, or to observe any other covenant or requirement imposed by the Contract, the Authority or the University Trustees, as the case may be, shall be deemed in default under the Contract. Thereupon, the Authority or the Trustee may institute legal proceedings to enforce such covenant or requirement or to enforce the pledge and lien granted under the provisions of the Contract and may take such other actions or exercise such other remedies as may be available at law or in equity to enforce the provisions of the Contract, including without limitation and upon agreement of the parties, mediation or arbitration. Without limiting the generality of the foregoing, in the case of an Authority default, the Commonwealth may, acting by and through the University Trustees, assume the rights and obligations of the Authority under the Contract until such time as the University Trustees may declare the default to be cured, and, in the case of the University Trustees default, the Authority may itself undertake to perform such obligations, and may employ such persons or entities and make such expenditures as are reasonably necessary for the performance thereof, until such time as the Authority may declare the default to be cured.

No action by the Authority to enforce the Contract, or any other action of the Authority under the Contract, and no default or breach by the University Trustees, shall in any way affect the obligations of the University Trustees under the Contract. No action by the University Trustees under the Contract, and no default or breach by the Authority, shall in any way affect the obligations of the Commonwealth under the Contract. Whenever a breach of the Contract, whether substantial or otherwise, and whether before or after notice of the breach has been given to the Authority or the University Trustees, has been corrected, the obligations and rights under the Contract shall be reinstated and performance of the Contract shall continue as if such breach had never occurred.

The University Trustees, the University or the Authority may, to the extent authorized by law, act under the Contract or authorize an officer or officers to act in their name thereunder, and the action of any duly authorized officer or committee of the University Trustees, the University or the Authority shall be deemed to be the action of the Commonwealth, acting by and through the University Trustees, the University or the Authority, as the case may be.

No member, officer or employee of the University Trustees or the University shall be individually liable on any obligation assumed by the Commonwealth or the University Trustees under the Contract. No member, officer or employee of the Authority shall be individually liable on any obligation assumed by the Authority under the Contract, and neither the carrying out of a Project nor the ownership of a Project by the Authority shall impose any liability on any such member, officer or employee.

NOTICES AND DEMANDS

Any notice or demand permitted or required under the Contract to be given or served by any of the parties to the Contract to or upon another party to the Contract shall be in writing and shall be signed in the name of the party giving or serving the same. Such notice or demand shall

be mailed by registered mail (postage and registry charges prepaid) or served on the President of the University, if such notice is to the Commonwealth or the University Trustees, or otherwise on the Executive Director of the Authority. Notice shall be deemed to have been received at the time of actual service or three days after the date of the mailing by registered mail properly addressed. The principal office of the President of the University and the Authority, respectively, shall be deemed to be One Beacon Street, 31st Floor, Boston, Massachusetts 02108 or such other place as the University Trustees may designate by written notice to the Authority or as the Authority may designate by written notice to the President of the University.

NON-ASSIGNABILITY

The Contract is not assignable except that if by act of the General Court the powers, functions, duties and property of the University or the Authority are transferred to another political subdivision, agency, board, commission, department, authority or institution of the Commonwealth, the rights and obligations of the Contract shall be deemed to have been assigned thereby to such transferee, and provided further that the Authority's rights to receive moneys under the Contract and to enforce the provisions of the Contract may be assigned to the Bond Trustee.

AMENDMENTS

The Contract may be amended only by the execution of an Amendment in writing by the Authority, the University Trustees and the Commonwealth, acting by and through the University Trustees, or their successors.

[Intentionally Left Blank]

PROPOSED FORM OF OPINION OF BOND COUNSEL

[Date of Delivery]

University of Massachusetts Building Authority
One Beacon Street, 32nd Floor
Boston, MA 02108

Re: University of Massachusetts Building Authority Project Revenue Bonds,
Senior Series 2022-1 (the "Bonds")

We have acted as bond counsel to the Authority in connection with the issuance by the Authority of the above-captioned Bonds pursuant to (i) Chapter 773 of the Acts of 1960, as amended (the "Act"), (ii) the Trust Agreement dated as of November 1, 2000 (the "Trust Agreement") between the Authority and U.S. Bank Trust Company, National Association, as successor trustee (the "Trustee") and (iii) the Series Resolution Authorizing the Issuance of the Bonds adopted by the Authority on December 10, 2021 (the "Series Resolution"). In such capacity, we have examined the law and such certified proceedings and other documents as we have deemed necessary to render this opinion, including without limitation the Second Amended and Restated Master Contract for Financial Assistance, Management and Services dated as of May 1, 2019 (the "Master Contract"), among the Authority, the University of Massachusetts, acting by and through the Board of Trustees (the "University Trustees"), and The Commonwealth of Massachusetts (the "Commonwealth"), acting by and through the University Trustees, and the Certificate Making Bonds Subject to Master Contract dated as of the date hereof (the "Certificate," and together with the Master Contract, the "Contract"). Capitalized terms used herein shall, unless otherwise specified, have the meanings set forth in the Trust Agreement and the Series Resolution.

Under the Trust Agreement, the Authority has pledged certain revenues (the "Revenues") for the payment of the principal of and interest on the Bonds when due.

Based upon and subject to the foregoing, we are of the opinion that, under existing law:

1. The Authority is validly existing as a body politic and corporate and public instrumentality of the Commonwealth with the power to enter into the Trust Agreement and the Series Resolution, perform the agreements on its part contained therein and issue the Bonds.

2. The Trust Agreement, the Series Resolution and the Contract have been duly authorized, executed and delivered by the Authority and constitute valid and binding obligations of the Authority enforceable upon the Authority.

APPENDIX E-1

3. The Contract has been duly authorized, executed and delivered by the Commonwealth and constitutes a valid and binding obligation of the Commonwealth enforceable upon the Commonwealth.

4. Pursuant to the Act, the Trust Agreement creates a valid lien on the Revenues and other funds pledged by the Trust Agreement for the security of the Bonds issued thereunder on a parity with other bonds issued under the Trust Agreement.

5. The Bonds have been duly authorized, executed and delivered by the Authority and are valid and binding limited obligations of the Authority, payable solely from the Revenues and other funds provided therefor in the Trust Agreement. Neither the Commonwealth nor any political subdivision or instrumentality thereof, including the Authority, is obligated to pay the principal of or redemption premium, if any, or interest on the Bonds except from the Revenues and other funds provided therefor as aforesaid in the Trust Agreement and the Series Resolution, and neither the faith and credit nor the taxing power of the Commonwealth nor of any political subdivision or instrumentality thereof, including the Authority, is pledged to the payment of the principal of or redemption premium, if any, or interest on the Bonds.

6. Interest on the Bonds will not be included in the gross income of the holders of the Bonds for federal income tax purposes. This opinion is expressly conditioned upon the Authority's compliance with certain requirements of the Internal Revenue Code of 1986, as amended, which must be satisfied subsequent to the date of issuance of the Bonds in order that interest thereon is and continues to be excluded from gross income for federal income tax purposes. Failure to comply with certain of such requirements could cause interest on the Bonds to be included in the gross income of holders of the Bonds retroactive to the date of issuance of the Bonds. Interest on the Bonds will not constitute a preference item for purposes of computation of the federal individual alternative minimum tax. We express no opinion as to other federal tax consequences resulting from holding the Bonds.

7. Interest on the Bonds, and any profit made on the sale thereof, are exempt from Massachusetts personal income taxes, and the Bonds are exempt from Massachusetts personal property taxes. We express no opinion as to other Massachusetts tax consequences arising with respect to the Bonds nor as to the taxability of the Bonds or the income therefrom under the laws of any state other than Massachusetts.

It is to be understood that the rights of the holders of the Bonds and the enforceability of the Bonds, the Trust Agreement and the Contract may be limited by bankruptcy, insolvency, reorganization, moratorium and other similar laws affecting creditors' rights generally and by equitable principles, whether considered at law or in equity.

This opinion is expressed as of the date hereof, and we neither assume nor undertake any obligation to update, revise, supplement or restate this opinion to reflect any action taken or omitted, or any facts or circumstances or changes in law or in the interpretation thereof, that may hereafter arise or occur, or for any other reason.

This opinion is limited to the matters expressly set forth herein and no opinion is implied or may be inferred beyond the matters expressly stated herein. Copies of this opinion may not be delivered to and may not be relied upon by any other party without our express prior written consent.

Very truly yours,

MCCARTER & ENGLISH, LLP

[Intentionally Left Blank]

PROPOSED FORM OF OPINION OF BOND COUNSEL

[Date of Delivery]

University of Massachusetts Building Authority
One Beacon Street, 32nd Floor
Boston, MA 02108

Re: University of Massachusetts Building Authority Project Revenue Bonds,
Senior Series 2022-2 (Federally Taxable) (the “Bonds”)

We have acted as bond counsel to the Authority in connection with the issuance by the Authority of the above-captioned Bonds pursuant to (i) Chapter 773 of the Acts of 1960, as amended (the “Act”), (ii) the Trust Agreement dated as of November 1, 2000 (the “Trust Agreement”) between the Authority and U.S. Bank Trust Company, National Association, as successor trustee (the “Trustee”) and (iii) the Series Resolution Authorizing the Issuance of the Bonds adopted by the Authority on December 10, 2021 (the “Series Resolution”). In such capacity, we have examined the law and such certified proceedings and other documents as we have deemed necessary to render this opinion, including without limitation the Second Amended and Restated Master Contract for Financial Assistance, Management and Services dated as of May 1, 2019 (the “Master Contract”), among the Authority, the University of Massachusetts, acting by and through the Board of Trustees (the “University Trustees”), and The Commonwealth of Massachusetts (the “Commonwealth”), acting by and through the University Trustees, and the Certificate Making Bonds Subject to Master Contract dated as of the date hereof (the “Certificate,” and together with the Master Contract, the “Contract”). Capitalized terms used herein shall, unless otherwise specified, have the meanings set forth in the Trust Agreement and the Series Resolution.

Under the Trust Agreement, the Authority has pledged certain revenues (the “Revenues”) for the payment of the principal of and interest on the Bonds when due.

Based upon and subject to the foregoing, we are of the opinion that, under existing law:

1. The Authority is validly existing as a body politic and corporate and public instrumentality of the Commonwealth with the power to enter into the Trust Agreement and the Series Resolution, perform the agreements on its part contained therein and issue the Bonds.

2. The Trust Agreement, the Series Resolution and the Contract have been duly authorized, executed and delivered by the Authority and constitute valid and binding obligations of the Authority enforceable upon the Authority.

APPENDIX E-2

3. The Contract has been duly authorized, executed and delivered by the Commonwealth and constitutes a valid and binding obligation of the Commonwealth enforceable upon the Commonwealth.

4. Pursuant to the Act, the Trust Agreement creates a valid lien on the Revenues and other funds pledged by the Trust Agreement for the security of the Bonds issued thereunder on a parity with other bonds issued under the Trust Agreement.

5. The Bonds have been duly authorized, executed and delivered by the Authority and are valid and binding limited obligations of the Authority, payable solely from the Revenues and other funds provided therefor in the Trust Agreement. Neither the Commonwealth nor any political subdivision or instrumentality thereof, including the Authority, is obligated to pay the principal of or redemption premium, if any, or interest on the Bonds except from the Revenues and other funds provided therefor as aforesaid in the Trust Agreement and the Series Resolution, and neither the faith and credit nor the taxing power of the Commonwealth nor of any political subdivision or instrumentality thereof, including the Authority, is pledged to the payment of the principal of or redemption premium, if any, or interest on the Bonds.

6. Under existing law, interest on the Bonds will be included in gross income of holders of the Bonds for federal income tax purposes. We express no opinion as to other federal tax consequences resulting from holding the Bonds.

7. The Bonds, their transfer and the income therefrom, including any profit made on the sale thereof, are exempt from taxes imposed by existing Massachusetts laws, although the Bonds and the interest thereon may be included in the measure of estate and inheritance taxes and of certain corporation excise and franchise taxes. We express no opinion as to the taxability of the Bonds, their transfer and the income therefrom, including any profit made on the sale thereof, under the laws of states other than Massachusetts.

It is to be understood that the rights of the holders of the Bonds and the enforceability of the Bonds, the Trust Agreement and the Contract may be limited by bankruptcy, insolvency, reorganization, moratorium and other similar laws affecting creditors' rights generally and by equitable principles, whether considered at law or in equity.

This opinion is expressed as of the date hereof, and we neither assume nor undertake any obligation to update, revise, supplement or restate this opinion to reflect any action taken or omitted, or any facts or circumstances or changes in law or in the interpretation thereof, that may hereafter arise or occur, or for any other reason.

This opinion is limited to the matters expressly set forth herein and no opinion is implied or may be inferred beyond the matters expressly stated herein. Copies of

this opinion may not be delivered to and may not be relied upon by any other party without our express prior written consent.

Very truly yours,

MCCARTER & ENGLISH, LLP

[Intentionally Left Blank]

**FORM OF AUTHORITY AND UNIVERSITY
CONTINUING DISCLOSURE AGREEMENT**

This Authority and University Continuing Disclosure Agreement, dated March 23, 2022 (this “Agreement”) by and between the University of Massachusetts Building Authority (the “Authority”), a body politic and corporate established by Chapter 773 of the Acts of 1960 of The Commonwealth of Massachusetts (as amended, the “Enabling Act”) and the University of Massachusetts (the “University”).

W I T N E S S E T H:

WHEREAS, upon the execution and delivery of this Agreement (and subject to the fulfillment of certain other conditions) the Authority will issue its Project Revenue Bonds, Senior Series 2022-1, and its Project Revenue Bonds, Senior Series 2022-2 (Federally Taxable) (together, the “Bonds”); and

WHEREAS, the Rule (hereinafter defined) requires a participating underwriter not to purchase or sell municipal securities in connection with an offering unless the participating underwriter has reasonably determined that the issuer and other obligated persons (within the meaning of the Rule) have undertaken certain continuing disclosure obligations;

NOW, THEREFORE, in consideration of the premises, including without limitation the issuance by the Authority of the Bonds, and for other good and valuable consideration, the receipt and adequacy of which are hereby acknowledged, the Authority and the University agree as follows:

1. **Purpose; Beneficiaries.** This Agreement is entered into solely to assist the Underwriter (hereinafter defined) in complying with subsection (b)(5) of the Rule. This Agreement constitutes a written undertaking for the benefit of the Registered Owners (hereinafter defined) and beneficial owners (within the meaning of the Rule) of the Bonds (such Registered Owners and beneficial owners being sometimes called herein “owners”).

2. **Definitions.** The following words and terms used in this Agreement shall have the following respective meanings:

(a) “EMMA” means the MSRB’s Electronic Municipal Market Access system, or its successor as designated by the MSRB.

(b) “Financial Obligation” means a (i) debt obligation; (ii) derivative instrument entered into in connection with, or pledged as security or a source of payment for, an existing or planned debt obligations; or (iii) guarantee of (i) or (ii). The term Financial Obligation shall not include municipal securities, as to which a final official statement has been provided to the MSRB consistent with the Rule.

(c) “MSRB” means the Municipal Securities Rulemaking Board.

(d) “Rule” means Rule 15c2-12 promulgated by the SEC under the Securities and Exchange Act of 1934, as amended (17 CFR Part 240, §240.15c2-12), as in effect on the date of this Agreement, including any official interpretation thereof.

(e) “SEC” means the United States Securities and Exchange Commission.

All capitalized words and terms used in this Agreement and not otherwise defined herein shall have the meaning ascribed to such words and terms in the Official Statement, dated March 15, 2022 pertaining to the Bonds (the “Official Statement”).

APPENDIX F

3. The Undertaking of the University. The University hereby undertakes to provide to the Authority no later than 270 days after the end of each fiscal year of the University, commencing with the fiscal year ending June 30, 2022, the annual financial information described below (the “University’s Annual Report”), together with audited financial statements of the University for such fiscal year if audited financial statements are then available; provided, however, that if audited financial statements of the University are not then available, such audited financial statements shall be delivered to the Authority when they become available (but in no event later than 350 days after the end of such fiscal year (the “prior fiscal year”). The University’s audited financial statements for each fiscal year will be prepared on an accrual basis in accordance with generally accepted accounting principles as in effect from time to time (or as otherwise may be required or permitted by law) and will consist of a combined balance sheet, a combined statement of changes in net assets and a combined statement of current net assets, revenues, expenses and other changes (or such other items as may be required or permitted by law or by generally accepted accounting principles as in effect from time to time or by other accounting principles as in effect from time to time in accordance with which the financial statements of the University may be prepared). Such financial statements will be audited by a group of certified public accountants appointed by the University. The University’s Annual Report shall include the financial and operating data, in each case updated through the last day of the prior fiscal year unless otherwise noted, and in each case substantially in the same level of detail as is found in Appendix A – “Letter from the University” to the Official Statement:

- (a) as set forth in the first sentence under the heading “GOVERNANCE – Faculty and Staff”;
- (b) in the tables under the heading “ENROLLMENT”;
- (c) in the tables and under the subheading “Student Financial Aid” under the heading “TUITION AND FEES”;
- (d) in Table A and Table B under the heading “UNIVERSITY REVENUES AND BUDGETING”;
- (e) in the table under the heading “SUMMARY OF FINANCIAL RESULTS, FISCAL YEARS 2019, 2020 AND 2021 – Endowment and Fundraising”;
- (f) in the table under the heading “CURRENT AND FUTURE CAPITAL PLANS”;
- (g) in the table under the heading “INDEBTEDNESS OF THE UNIVERSITY – Spendable Cash and Investments”; and
- (h) in the first paragraph under the heading “EMPLOYEE RELATIONS”.

In the event the University’s audited financial statements provided pursuant to this Agreement contain any of the information described in paragraphs (a) through (h) above, the requirement of this Section 3 shall be deemed to be satisfied with respect to including such information in the University’s Annual Report.

Any or all of the items listed above may be included by reference to other documents, including official statements pertaining to debt issued by the Authority or others on behalf of the University, which have been submitted to EMMA.

4. Transmission of Material Financial Statements and Annual Financial Information by the Authority. The Authority will transmit the financial statements of the University and the University’s Annual Report to the MSRB through its EMMA system promptly upon the receipt thereof from the University and will give notice to EMMA of any failure by the University to provide such financial statements or the University’s Annual Report by the dates set forth in this Agreement.

5. The Undertaking of the Authority. The Authority hereby undertakes to provide to EMMA no later than 270 days after the end of each fiscal year of the Authority, commencing with the fiscal year ending June 30, 2022, the annual financial information described below, together with audited financial statements of the Authority for such

fiscal year if audited financial statement are then available; provided, however, that if audited financial statements of the Authority are not then available, such audited financial statements shall be delivered to the MSRB via EMMA when they become available (but in no event later than 350 days after the end of such fiscal year (the “prior fiscal year of the Authority”). The Authority’s annual financial statements for each fiscal year will be prepared using the economic resources measurement focus and the accrual basis of accounting in accordance with generally accepted accounting principles as in effect from time to time (or as otherwise may be required or permitted by law) and will consist of a statement of net assets, a statement of revenues, expenses and changes in net assets and a statement of cash flows (or such other items as may be required or permitted by law or by accounting principles as in effect from time to time in accordance with which the financial statements of the Authority may be prepared). Such financial statements will be audited by a group of certified public accountants appointed by the Authority. The annual financial information to be provided by the Authority shall consist of financial and operating data, updated through the last day of the prior fiscal year of the Authority unless otherwise noted, relating to the following information contained in the Official Statement and substantially in the same level of detail as is found in the section of the Official Statement referenced in parentheses after each item:

- (a) any material change in the provisions of the Contract “Security and Sources of Payment for the Bonds – Contract” and “– Pledge of Revenues under the Project Trust Agreement”);
- (b) annual debt service requirements on the Bonds (“Security and Sources of Payment for the Bonds – Annual Debt Service Requirements”);
- (c) any amendment to the Project Trust Agreement made with the consent of the registered owners of the Bonds and any other amendment to the Project Trust Agreement which, in the opinion of the firm of attorneys serving as bond counsel to the Authority at the time the Authority submits the information required by the University and Authority Disclosure Agreement, is material to the interests of the registered owners of the Bonds (“Appendix D -- Summary of Legal Documents”).

Any or all of the items listed above may be included by reference to other documents, including official statements pertaining to debt issued by the Authority, which have been submitted to EMMA.

6. Notice by the Authority of Certain Events. Whenever the Authority obtains knowledge of the occurrence of any of the following listed events with respect to the Bonds, the Authority shall submit to the MSRB via EMMA, in a timely manner not in excess of ten business days of the event, notice of any of the following events with respect to the Bonds; provided however, that the submission by a rating agency of a rating change, to the MSRB, will be deemed filed by the Institution for the purposes of this Agreement:

- (a) principal and interest payment delinquencies;
- (b) non-payment related defaults, if material;
- (c) unscheduled draws on debt service reserves reflecting financial difficulties;
- (d) unscheduled draws on credit enhancements, if any, reflecting financial difficulties;
- (e) substitution of credit or liquidity providers, if any, or their failure to perform;
- (f) adverse tax opinions, the issuance by the Internal Revenue Service of proposed or final determinations of taxability, Notices of Proposed Issue (IRS Form 5701-TEB) or other material notices or determinations with respect to the tax status of the Bonds, or other material events affecting the tax-exempt status of the Bonds;
- (g) modifications to rights of holders of the Bonds, if material;
- (h) bond calls, if material, and tender offers;

APPENDIX F

- (i) defeasances;
- (j) release, substitution, or sale of property, if any, securing payment of the Bonds, if material;
- (k) rating changes;
- (l) bankruptcy, insolvency, receivership or similar event of the Authority^{*};
- (m) the consummation of a merger, consolidation, or acquisition involving the Authority or the sale of all or substantially all of the assets of the Authority, other than in the ordinary course of business, the entry into a definitive agreement to undertake such an action or the termination of a definitive agreement relating to any such actions, other than pursuant to its terms, if material;
- (n) appointment of a successor or additional trustee or the change of the name of the Trustee, if material;
- (o) incurrence of a Financial Obligation of the Authority, if material, or agreement to covenants, events of default, remedies, priority rights, or other similar terms of a Financial Obligation of the Authority, any of which affect the holders of the Bonds, if material; and
- (p) default, event of acceleration, termination event, modification of terms, or other similar events under the terms of a Financial Obligation of the Authority, any of which reflect financial difficulties.

7. Enforceability of this Agreement: Termination. To the extent permitted by law, the provisions of this Agreement shall be enforceable against the University with respect to the obligations of the University hereunder, and against the Authority with respect to the obligations of the Authority hereunder, in accordance with the terms hereof by any owner of a Bond, including any beneficial owner acting as a third party beneficiary (upon proof of its status as a beneficial owner reasonably satisfactory to the University or the Authority, as the case may be). To the extent permitted by law, any such owner shall have the right, for the equal benefit and protection of all owners of the Bonds, by mandamus or other suit or proceeding at law or in equity, to enforce its rights against the University or the Authority, as applicable, and to compel the University or the Authority as applicable, and any of the officers, agents or employees of, as applicable, the University or the Authority, to perform and carry out their duties under such provisions of this Agreement; provided, however, that the sole remedy for a violation of this Agreement shall be limited to an action to compel specific performance of the obligations of the University or the Authority, as applicable, under this Agreement and shall not include any rights to monetary damages. This Agreement shall terminate if no Bonds remain outstanding (without regard to an economic defeasance) or if the provisions of the Rule concerning continuing disclosure are no longer in effect, whichever occurs first.

8. Amendments. This Agreement may be amended, changed or modified by the parties hereto, without the consent of, or notice to, any owners of the Bonds, (a) to comply with or conform to the provisions of the Rule or any amendments thereto or authoritative interpretations thereof by the SEC or its staff (whether required or optional), (b) to add a dissemination agent for the information required to be provided pursuant to this Agreement by the University or the Authority and to make any necessary or desirable provisions with respect thereto, (c) to add to the covenants of the University or the Authority for the benefit of the owners of the Bonds, (d) to modify the contents, presentation and format of the annual financial information of the University or the Authority from time to time as a result of a change in circumstances that arises from a change in legal requirements, or (e) to otherwise modify the

^{*} For the purposes of this event, the event is considered to occur when any of the following occur: the appointment of a receiver, fiscal agent or similar officer for the Authority in a proceeding under the U.S. Bankruptcy Code or in any other proceeding under state or federal law in which a court or governmental authority has assumed jurisdiction over substantially all of the assets or business of the Authority, or if such jurisdiction has been assumed by leaving the existing governing body and officials or officers in possession but subject to the supervision and orders of a court or governmental authority, or the entry of an order confirming a plan of reorganization, arrangement or liquidation by a court or governmental authority having supervision or jurisdiction over substantially all of the assets or business of the Authority.

duties of the University or the Authority in this Agreement in a manner consistent to the requirements of the Rule concerning continuing disclosure; provided, however, that in the case of any amendment pursuant to clause (d) or (e), (i) the duties of the University or the Authority, as amended, would have complied with the requirements of the Rule at the time of the offering of the Bonds, after taking into account any amendments or authoritative interpretations of the Rule, as well as any change in circumstances, and (ii) the amendment does not materially impair the interests of the owners of the Bonds, as determined either by a party unaffiliated with the University or the Authority (such as the firm serving at the time as bond counsel to the Authority) or by the vote or consent of the Registered Owners of a majority in outstanding principal amount of the Bonds affected thereby at or prior to the time of such amendment, which consent shall be obtained as provided in the Trust Agreement with respect to consents of Registered Owners. Any amendment, change or modification to this Agreement shall be in writing.

If this Agreement is amended with respect to the annual financial information to be submitted by the Authority or the University hereunder, the annual financial information containing the amended financial information will explain, in narrative form, the reasons for the amendment and the impact of the change in the type of financial information being provided. If this Agreement is amended with respect to the accounting principles to be followed in preparing financial statements of the University or the Authority, the annual financial information of the University or the Authority as applicable, for the year in which the change is made will present a comparison between the financial statements or information prepared on the basis of the new accounting principles and the financial statements or information prepared on the basis of the former accounting principles. Such comparison will include a qualitative discussion of the differences in the accounting principles and the impact of the change in the accounting principles on the presentation of the financial information, in order to provide information to investors to enable them to evaluate the ability of the University or the Authority, as applicable, to meet its obligations with respect to the Bonds. To the extent reasonably feasible, the comparison will also be quantitative. The University will give notice of any change in its accounting principles to the Authority as promptly as practicable after such change has been determined and the Authority will submit such information to EMMA promptly upon the receipt thereof. The Authority will give notice of any change in its accounting principles to the MSRB via EMMA as promptly as practicable after such change has been determined.

9. Counterparts. This Agreement may be executed in several counterparts, each of which shall be an original and all of which shall constitute but one and the same instrument.

10. Governing Law. This Agreement shall be governed by and construed in accordance with the laws of the Commonwealth and applicable law of the United States of America.

11. Titles of Sections. The titles of sections in this Agreement shall have no effect in construing this Agreement.

12. Actions to be Performed on Non-Business Days. Any action required by this Agreement to be taken on a Saturday, Sunday or holiday within the Commonwealth may be taken on the next business day with the same force and effect as if taken on the day so required.

(Remainder of page intentionally left blank)

APPENDIX F

IN WITNESS WHEREOF, the UNIVERSITY OF MASSACHUSETTS, acting by a signer thereunto duly authorized by vote of the Trustees, and UNIVERSITY OF MASSACHUSETTS BUILDING AUTHORITY, acting by its Chairman or other officer thereunto duly authorized by vote of the Authority, have executed this Agreement, and the seal of the Trustees and the seal of the Authority have been affixed hereto, all as of the day and year first above written.

(seal)

UNIVERSITY OF MASSACHUSETTS BUILDING
AUTHORITY

By: _____

Aaron D'Elia
Chief Financial Officer

(seal)

UNIVERSITY OF MASSACHUSETTS

By: _____

Lisa A. Calise
Senior Vice President for Administration and Finance
& Treasurer

EXHIBIT A

MSRB

Municipal Securities Rulemaking Board

1300 I Street NW, Suite 1000
Washington, DC 20005
Phone: (202) 838-1500
Fax: (202) 898-1500

EMMA

Electronic Municipal Market Access

<http://emma.msrb.org/>

[Intentionally Left Blank]

BOOK-ENTRY ONLY SYSTEM AND GLOBAL CLEARANCE PROCEDURES**DTC**

The Depository Trust Company (“DTC”), New York, New York, will act as securities depository for the Bonds. The Bonds will be issued as fully-registered securities registered in the name of Cede & Co. (DTC’s partnership nominee) or such other name as may be requested by an authorized representative of DTC. One fully registered Bond certificate will be issued for each stated maturity of the Bonds, in the aggregate principal amount of the applicable stated maturity, and will be deposited with DTC.

DTC, the world’s largest securities depository, is a limited-purpose trust company organized under the New York Banking Law, a “banking organization” within the meaning of the New York Banking Law, a member of the Federal Reserve System, a “clearing corporation” within the meaning of the New York Uniform Commercial Code, and a “clearing agency” registered pursuant to the provisions of Section 17A of the Securities Exchange Act of 1934, as amended. DTC holds and provides asset servicing for over 3.5 million issues of U.S. and non-U.S. equity issues, corporate and municipal debt issues, and money market instruments (from over 100 countries) that DTC’s participants (“Direct Participants”) deposit with DTC. DTC also facilitates the post-trade settlement among Direct Participants of sales and other securities transactions in deposited securities, through electronic computerized book-entry transfers and pledges between Direct Participants’ accounts. This eliminates the need for physical movement of securities certificates. Direct Participants include both U.S. and non-U.S. securities brokers and dealers, banks, trust companies, clearing corporations, and certain other organizations. DTC is a wholly-owned subsidiary of The Depository Trust & Clearing Corporation (“DTCC”). DTCC is the holding company for DTC, National Securities Clearing Corporation and Fixed Income Clearing Corporation, all of which are registered clearing agencies. DTCC is owned by the users of its regulated subsidiaries. Access to the DTC system is also available to others such as both U.S. and non-U.S. securities brokers and dealers, banks, trust companies and clearing corporations that clear through or maintain a custodial relationship with a Direct Participant, either directly or indirectly (“Indirect Participants”). The DTC Rules applicable to its Participants are on file with the Securities and Exchange Commission. More information about DTC can be found at www.dtcc.com.

Purchases of the Bonds under the DTC system must be made by or through Direct Participants, which will receive a credit for the Bonds on DTC’s records. The ownership interest of each actual purchaser of each Bond (“Beneficial Owner”) is in turn to be recorded on the Direct and Indirect Participants’ records. Beneficial Owners will not receive written confirmation from DTC of their purchase. Beneficial Owners are, however, expected to receive written confirmations providing details of the transaction, as well as periodic statements of their holdings, from the Direct or Indirect Participant through which the Beneficial Owner entered into the transaction. Transfers of ownership interests in the Bonds are to be accomplished by entries made on the books of Direct and Indirect Participants acting on behalf of Beneficial Owners. Beneficial Owners will not receive certificates representing their ownership interests in the Bonds, except in the event that use of the book-entry system for the Bonds is discontinued.

To facilitate subsequent transfers, all Bonds deposited by Direct Participants with DTC are registered in the name of DTC’s partnership nominee, Cede & Co., or such other name as may be requested by an authorized representative of DTC. The deposit of the Bonds with DTC and their registration in the name of Cede & Co. or such other DTC nominee do not effect any change in beneficial ownership. DTC has no knowledge of the actual Beneficial Owners of the Bonds. DTC’s records reflect only the identity of the Direct Participants to whose accounts such Bonds are credited, which may or may not be the Beneficial Owners. The Direct and Indirect Participants will remain responsible for keeping account of their holdings on behalf of their customers.

Conveyance of notices and other communications by DTC to Direct Participants, by Direct Participants to Indirect Participants, and by Direct Participants and Indirect Participants to Beneficial Owners will be governed by arrangements among them, subject to any statutory or regulatory requirements as may be in effect from time to time. Beneficial Owners of Bonds may wish to take certain steps to augment the transmission to them of notices of significant events with respect to the Bonds, such as redemptions, defaults, and proposed amendments to the Bond documents. For example, Beneficial Owners of Bonds may wish to ascertain that the nominee holding the Bonds for their benefit has agreed to obtain and transmit notices to Beneficial Owners.

Redemption notices shall be sent to DTC. If less than all of the Bonds are being redeemed, DTC's practice is to determine by lot the amount of the interest of each Direct Participant in such Bonds to be redeemed.

Neither DTC nor Cede & Co. (nor any other DTC nominee) will consent or vote with respect to the Bonds unless authorized by a Direct Participant in accordance with DTC's MMI Procedures. Under its usual procedures, DTC mails an Omnibus Proxy to the Authority as soon as possible after the record date. The Omnibus Proxy assigns Cede & Co.'s consenting or voting rights to those Direct Participants to whose accounts the Bonds are credited on the record date (identified in a listing attached to the Omnibus Proxy). The Authority cannot give any assurances that Direct Participants or others will distribute payments of principal of and interest on the Bonds paid to DTC or its nominee, as the registered owner, to the Beneficial Owners, or that they will do so on a timely basis or that DTC will serve and act in a manner described in this document.

Beneficial Owners of the Bonds will not receive or have the right to receive physical delivery of such Bonds and will not be or be considered to be the registered owners thereof. So long as Cede & Co. is the registered owner of the Bonds, as nominee of DTC, references herein to the holders or registered owners of the Bonds shall mean Cede & Co. and shall not mean the Beneficial Owners of the Bonds, except as otherwise expressly provided herein.

Principal (including sinking fund installments), redemption premium, if any, and interest payments on the Bonds will be made to Cede & Co., or such other nominee as may be requested by an authorized representative of DTC. DTC's practice is to credit Direct Participants' accounts upon DTC's receipt of funds and corresponding detail information from the Authority or Trustee on the payable date in accordance with their respective holdings shown on DTC's records. Payments by Participants to Beneficial Owners will be governed by standing instructions and customary practices, as is the case with securities held for the accounts of customers in bearer form or registered in "street name," and will be the responsibility of such Participant and not of DTC, the Trustee or the Authority, subject to any statutory or regulatory requirements as may be in effect from time to time. Payment of principal and interest to Cede & Co. (or such other nominee as may be requested by an authorized representative of DTC) is the responsibility of the Trustee, disbursement of such payments to Direct Participants will be the responsibility of DTC, and disbursement of such payments to the Beneficial Owners will be the responsibility of Direct and Indirect Participants.

The Authority may decide to discontinue use of the system of book-entry-only transfers through DTC (or a successor securities depository). In that event, Bond certificates will be printed and delivered to DTC.

THE INFORMATION IN THIS SECTION CONCERNING DTC AND DTC'S BOOK-ENTRY SYSTEM HAS BEEN OBTAINED FROM SOURCES THAT THE AUTHORITY BELIEVES TO BE RELIABLE, BUT THE AUTHORITY TAKES NO RESPONSIBILITY FOR THE ACCURACY THEREOF.

No Responsibility of the Authority or the Trustee

NEITHER THE AUTHORITY NOR THE TRUSTEE WILL HAVE ANY RESPONSIBILITY OR OBLIGATIONS TO DIRECT PARTICIPANTS OR THE PERSONS FOR WHOM THEY ACT AS NOMINEES WITH RESPECT TO THE PAYMENTS TO OR THE PROVIDING OF NOTICE FOR DIRECT PARTICIPANTS, INDIRECT PARTICIPANTS, OR BENEFICIAL OWNERS.

SO LONG AS CEDE & CO. IS THE REGISTERED OWNER OF THE BONDS, AS NOMINEE OF DTC, REFERENCES HEREIN TO THE HOLDERS OR REGISTERED OWNERS OF THE BONDS SHALL MEAN CEDE & CO. AND SHALL NOT MEAN THE BENEFICIAL OWNERS OF THE BONDS.

Certificated Bonds

DTC may discontinue providing its services as securities depository with respect to the Bonds at any time by giving reasonable notice to the Authority and the Trustee. In addition, the Authority may determine that continuation of the system of book-entry transfers through DTC (or a successor securities depository) is not in the best interests of the Beneficial Owners of the Bonds. If for either reason the Book-Entry Only system is discontinued, Bond certificates will be delivered as described in the Agreement and the Beneficial Owner, upon registration of certificates held in the Beneficial Owner's name, will become the holder of such Bond. Thereafter, the Bonds may be exchanged for an equal aggregate principal amount of the Bonds in other authorized denominations and of the same maturity, upon surrender thereof at the principal corporate trust office of the Trustee. The transfer of the Bonds may be registered on the books maintained by the Trustee for such purpose only upon the assignment in the form satisfactory to the Trustee. For every exchange or registration of transfer of the Bonds, the Authority and the Trustee may make a charge sufficient to reimburse them for any tax or other governmental charge required to be paid with respect to such exchange or registration of transfer, but no other charge may be made to the holder of such Bond for any exchange or registration of transfer of the Bonds. The Trustee will not be required to transfer or exchange the Bonds during the notice period preceding any redemption if such Bonds (or any part thereof) are eligible to be selected or have been selected for redemption.

Clearstream Luxembourg and Euroclear Systems

The information set forth below is subject to any change in or reinterpretation of the rules, regulations and procedures of Euroclear and Clearstream Luxembourg. Neither the Authority nor the Underwriters takes any responsibility for the accuracy of this section. Investors wishing to use the facilities of any of Euroclear or Clearstream Luxembourg are advised to confirm the continued applicability of the relevant rules, regulations and procedures.

Beneficial Owners may elect to hold interests in the Bonds through either DTC (in the United States) or Clearstream Luxembourg or Euroclear (in Europe) if they are participants of those systems, or indirectly, through organizations that are participants in such systems. Interests held through Clearstream Luxembourg and Euroclear will be recorded on DTC's books as being held by the U.S. depository for each of Clearstream Luxembourg and Euroclear, which U.S. depositories will in turn hold interests on behalf of their participants' securities accounts.

Clearstream Luxembourg and Euroclear are central securities depositories subject to Regulation (EU) No 909/2014, as amended, (the "CSDR"). The aim of the CSDR is to harmonise certain aspects of the settlement cycle and settlement discipline and to provide a set of common requirements for central securities depositories operating securities settlement systems across the EU.

Clearstream Luxembourg was incorporated as a limited liability company under the laws of Luxembourg. Clearstream Luxembourg holds securities for its participating organizations ("Clearstream Luxembourg Participants") and facilitates the clearance and settlement of securities transactions between Clearstream Luxembourg Participants through electronic book-entry changes in accounts of Clearstream Luxembourg Participants, thereby eliminating the need for physical movement of certificates. Transactions may be settled by Clearstream Luxembourg in many currencies, including United States dollars. Clearstream Luxembourg provides to Clearstream Luxembourg Participants, among other things, services for safekeeping, administration, clearance and settlement of internationally traded securities and securities lending and borrowing. Clearstream Luxembourg has established an electronic bridge with Euroclear to facilitate settlement of trades between Clearstream and Euroclear.

Distributions with respect to Bonds held beneficially through Clearstream Luxembourg will be credited to cash accounts of Clearstream Luxembourg Participants in accordance with its rules and procedures, to the extent received by the U.S. depository for Clearstream Luxembourg.

Euroclear was created in 1968 to hold securities for participants of Euroclear ("Euroclear Participants") and to clear and settle transactions between Euroclear Participants through simultaneous electronic book-entry delivery against payment, thereby eliminating the need for physical movement of certificates and any risk from lack of simultaneous transfers of securities and cash. Such operations are conducted by Euroclear, and all Euroclear securities clearance accounts and Euroclear cash accounts are accounts with Euroclear. Euroclear Participants include banks (including central banks), securities brokers and dealers and other professional financial intermediaries and may

include the agents or their affiliates. Indirect access to the Euroclear system also is available to other firms that clear through or maintain a custodial relationship with a Euroclear Participant, either directly or indirectly.

Securities clearance accounts and cash accounts with Euroclear are governed by the Terms and Conditions Governing Use of Euroclear and the related Operating Procedures of the Euroclear system, and applicable Belgian law (collectively, the “Terms and Conditions”). The Terms and Conditions govern transfers of securities and cash within Euroclear, withdrawals of securities and cash from Euroclear, and receipts of payments with respect to securities in Euroclear. All securities in Euroclear are held on a fungible basis without attribution of specific certificates to specific securities clearance accounts. Euroclear acts under the Terms and Conditions only on behalf of Euroclear Participants, and has no record of, or relationship with, persons holding through Euroclear Participants.

Distributions with respect to Bonds held beneficially through Euroclear will be credited to the cash accounts of Euroclear Participants in accordance with the Terms and Conditions, to the extent received by the U.S. depository of Euroclear.

Global Clearance and Settlement Procedures

Initial settlement for the Bonds will be made in immediately available funds. Secondary market trading between Participants will occur in the ordinary way in accordance with DTC’s rules. Secondary market trading between Clearstream Luxembourg Participants and/or Euroclear Participants will occur in the ordinary way in accordance with the applicable rules and operating procedures of Clearstream Luxembourg and Euroclear and will be settled using the procedures applicable to conventional eurobonds in immediately available funds.

Cross-market transfers between persons holding directly or indirectly through DTC, on the one hand, and directly or indirectly through Clearstream Luxembourg or Euroclear Participants, on the other, will be effected within DTC in accordance with DTC’s rules on behalf of the relevant European international clearing system by its U.S. depository; however, such cross-market transactions will require delivery of instructions to the relevant European international clearing system by the counterparty in such system in accordance with its rules and procedures and within its established deadlines (European time). The relevant European international clearing system will, if the transaction meets its settlement requirements, deliver instructions to its U.S. depository to take action to effect final settlement on its behalf by delivering or receiving Bonds in DTC, and making or receiving payment in accordance with normal procedures. Clearstream Luxembourg Participants and Euroclear Participants may not deliver instructions directly to their respective U.S. depositories.

Because of time-zone differences, credits of Bonds received in Clearstream Luxembourg or Euroclear as a result of a transaction with a participant will be made during subsequent securities settlement processing and dated the business day following the DTC settlement date. Such credits, or any transactions in the Bonds settled during such processing, will be reported to the relevant Euroclear Participants or Clearstream Luxembourg Participants on that business day. Cash received in Clearstream Luxembourg or Euroclear as a result of sales of Bonds by, or through a Clearstream Luxembourg Participant or a Euroclear Participant to a participant will be received with value on the business day of settlement in DTC but will be available in the relevant Clearstream Luxembourg or Euroclear cash account only as of the business day following settlement in DTC.

Although DTC, Clearstream Luxembourg and Euroclear have agreed to the foregoing procedures in order to facilitate transfers of securities among participants of DTC, Clearstream Luxembourg and Euroclear, they are under no obligation to perform or continue to perform such procedures, and such procedures may be discontinued at any time.



Printed by: ImageMaster, LLC
www.imagemaster.com