



DASNY

ANDREW M. CUOMO
Governor

ALFONSO L. CARNEY, JR.
Chair

GERRARD P. BUSHELL
President & CEO

Memorandum

TO: Jack D. Homkow, Director, Office of Environmental Affairs

FROM: Sara E. Stein, AICP, Environmental Manager 

DATE: January 10, 2017

RE: *State Environmental Quality Review (SEQRA) Determination* for the Columbia University 2017 Financing Project — Independent Colleges and Universities Program

DASNY (“Dormitory Authority State of New York”) has received a funding request from Columbia University (“Columbia” or the “University”) pursuant to DASNY’s Independent Colleges and Universities Program for its 2017 Financing Project (the “Proposed Project”). Accordingly, the Proposed Project is subject to environmental review pursuant to the *State Environmental Quality Review Act (“SEQRA”)*. Based on a review of the attached *Single Approval Credit Summary and Staff Report* dated January 4, 2017, and supporting documentation completed by a representative of the University, it has been determined that for purposes of SEQRA, the Proposed Action would consist of DASNY’s authorization of the issuance of up to \$200,000,000 in one or more series of fixed- and/or variable-rate, tax-exempt and/or taxable bonds to be sold through one or more negotiated offerings and/or private placements at one or more times on behalf of the University.

The proceeds of DASNY’s bond issuance would be used to finance various University-wide construction and renovation projects located at Columbia’s Medical Center, Morningside and Manhattanville campuses located in the borough of Manhattan, New York County, New York. The bond issuance would also be used to refund all or a portion of the DASNY Columbia University Insured Revenue Bonds, Series 2004C.

DASNY completed this environmental review in accordance with SEQRA, codified at Article 8 of the New York *Environmental Conservation Law (“ECL”)*, and its implementing regulations, promulgated at Part 617 of Title 6 of the *New York Codes, Rules and Regulations (“N.Y.C.R.R.”)*, which collectively contain the requirements for the *State Environmental Quality Review (“SEQR”)* process. Representatives of the University completed a series of Project Documents that detail each of the Proposed Project activities, along with a summary list of eligible projects that may be funded from DASNY Series 2017 bond proceeds (see attached).

The Proposed Project would include design development, construction and/or renovation of the following buildings or facilities on the Manhattanville Campus to be used for academic and research purposes:

- Columbia Business School and Underground Foundations: Design, development and construction of all systems required to complete the Columbia Business School and underground foundations located between West 130th Street to West 131st Street from Broadway to 12th Avenue;
- Lenfest Center for Performing Arts: Design, development and construction of all systems required to complete the Lenfest Center for Performing Arts located between West 129th Street to West 130th Street from Broadway to 12th Avenue;
- Jerome L. Green Science Center for the Mind, Brain and Behavior: Design, development and construction of all systems required to complete the Jerome L. Greene Science Center located between West 129th Street to West 130th Street from Broadway to 12th Avenue;
- Central Below Grade Facility: Design, development and construction of all systems required to complete a multilevel, interconnected underground within the area bounded by 125/129th Street to West 131st Street from Broadway to 12th Avenue to provide additional space for academic and research support services including parking and materials distribution;
- Open Spaces: Design and/or construction of the approximately 11,800-square-foot (“sf”) landscaped “small square” and approximately 40,000-sf “large square”, plus landscaping and streetscape work;
- Studebaker Building: Renovation of the 600 level of the Studebaker Building located at 615 West 131st Street to convert space formerly leased by the Alexander Doll Company into office space for University administrators;

It has been determined that these project components were previously reviewed under *SEQRA* and have not changed from the previous *SEQR* process and, therefore, no further environmental review by DASNY is required.¹

The Proposed Project would also include the following renovation projects in buildings or facilities on the Medical Center Campus and the Morningside Heights Campus to be used for academic and research purposes:

¹ Certain projects included in this Columbia University 2017 Series Financing Project were previously reviewed under *SEQRA* as part of the Columbia University Series 2015 Financing Project (see DASNY’s *SEQR Determination for the 2015 Financing Project* and DASNY’s *Findings Statement for the Continuation of Phase I Components of the Manhattanville in West Harlem Rezoning and Academic Mixed-Use Development Project* dated March 9, 2015).

- Institute for Comparative Medicine Animal Facilities: Renovation of animal research and support spaces on the 18th and 19th floors of the William Black Medical Research and College of Physicians and Surgeons (“P&S”) Building located at 650 West 168th Street, and on the 17th floor of the Hammer Health Sciences Building located at 701 West 168th Street;
- Fairchild Hall, 800 Level (1212 Amsterdam Avenue): Renovation of approximately 6,000 gross square feet (“gsf”) of existing laboratory space in the Department of Biological Sciences for academic/research purposes;
- Northwest Corner Building, 1100 Level (550 West 120th Street): Renovation of approximately 5,200 gsf of laboratory and support space in the Physics Department for research purposes;
- Shapiro Center for Engineering and Physical Space Research (“CEPSR”), 1000 Level (530 West 120th Street): Renovation and expansion of approximately 4,600 gsf of Columbia Nanofabrication Facility space (“Shared Facility Clean Room”) to support current and emerging efforts in nanobiology and nanomedicine in the Fu Foundation School of Engineering and Applied Science, Arts and Sciences, and the School of Physicians and Surgeons;
- Havemeyer Hall, 400 Level (3000 Broadway): Renovation of an existing, approximately 2,300 gsf, unused laboratory space in the Chemistry Department for academic/research purposes;
- Pupin Hall, Levels 800 and 900 (538 West 120th Street): Conversion of approximately 7,500 gsf of academic space in the east side of the 800 and 900 levels into a new Physics Theory Center for use by faculty, postdoctoral researchers and graduate students;
- Watson Hall, 600 Level (612 West 115th Street): Renovation of approximately 3,000 gsf of academic space to accommodate the expansion of the Statistics Department for Columbia’s Information Technology and Gender-Based Misconduct offices; and
- Chandler Hall, 700 level (3010 Broadway): Conversion of approximately 1,100 gsf of space into new and additional wet laboratory space for academic/research purposes.

Additionally, the Proposed Project would involve upgrades to various existing Institutional Real Estate (“IRE”) apartment properties for University-related housing on the Upper West Side of Manhattan and the Bronx, New York, New York, located in the areas bounded by West 107th Street to West 108th Street from Columbus Avenue to Central Park West, West 108th Street to West 110th Street from Amsterdam Avenue to Riverside Drive, West 110th Street to West 122nd Street from Morningside Drive to Riverside Drive, and West 122nd Street to West 125th Street from Amsterdam Avenue to

Riverside Drive, and at the following locations or addresses: 52 West 85th Street, 200 West End Avenue, 258 Riverside Drive, 2700 Broadway, 455 Central Park West, the Morningside Gardens Complex from 122nd to 125th from Amsterdam to Broadway, and 3260 Henry Hudson Parkway.

As described above and in the attached documents, the Proposed Project components located on the University's Medical Center and Morningside Heights campuses and at the University's IRE properties located on the Upper West Side of Manhattan and the Bronx would involve maintenance or repair involving no substantial changes in an existing structure or facility; the replacement, rehabilitation, or reconstruction of a structure or facility, in kind, on the same site, including upgrading buildings to meet building or fire codes; and/or the purchase of furnishings and equipment, which are Type II actions as specifically designated by 6 *N.Y.C.R.R.* § 617.5(c)(1), 6 *N.Y.C.R.R.* § 617.5(c)(2), and 6 *N.Y.C.R.R.* § 617.5(c)(25), respectively. The Proposed Project would also involve the refinancing of taxable commercial paper issued by the University (Columbia University Insured Revenue Bonds, Series 2006A and 2006B). Refinancing existing debt is also a Type II action as specifically designated by 6 *N.Y.C.R.R.* § 617.5(c)(23). Type II "actions have been determined not to have significant impact on the environment or are otherwise precluded from environmental review under Environmental Conservation Law, article 8."² Therefore, no further *SEQR* determination or procedure is required for any component of the Proposed Project identified as Type II.

The Proposed Project was reviewed in conformance with the *New York State Historic Preservation Act of 1980 ("SHPA")*, especially the implementing regulations of section 14.09 of the *Parks, Recreation and Historic Preservation Law ("PRHPL")*, as well as with the requirements of the Memorandum of Understanding ("MOU"), dated March 18, 1998, between DASNY and the New York State Office of Parks, Recreation and Historic Preservation ("OPRHP"). In compliance with Article III, Section 3.0 of the MOU, OPRHP will be notified of the Proposed Project being funded with bond proceeds. The Studebaker Building, which is located on Columbia's Manhattanville Campus, is eligible for listing on the State and National Registers of Historic Places. In a letter dated December 8, 2005, OPRHP opined that the proposed renovation of the building would have no adverse impact upon historic resources. It is the opinion of DASNY that the Proposed Project would have no impact on historical or cultural resources in or eligible for inclusion in the National and/or State Registers of Historic Places.

Attachments

cc: Donna A. Rosen, Esq.
David P. Ostrander
SEQR File
OPRHP File

² 6 *N.Y.C.R.R.* § 617.5(a).

Single Approval Credit Summary

Columbia University
New York, New York

January 4, 2017

Program: Independent Colleges & Universities

Purpose: New Money/Refunding

New Issue Details

One or more Series of fixed and/or variable rate, tax-exempt and/or taxable Series 2017 Bonds in an amount not to exceed \$200,000,000 with maturities not to exceed 31 years are to be sold at one or more times through a negotiated offering and/or a private placement.

- Lead Manager – Goldman, Sachs & Co.
- Co-Bond Counsel – Nixon Peabody LLP and
Drohan Lee LLP
- Underwriter's Counsel – Winston & Strawn LLP

Purpose:

- Financing of numerous construction and renovation projects located throughout the Columbia University system (\$150.0 million).
- Refunding of all or a portion of the DASNY Series 2004C Bonds (\$49.4 million).

Security:

- General obligation of the University.

Current Ratings: Moody's: Aaa (Stable)
S&P: AAA (Stable)
Fitch: NR

Overview

Columbia University is a privately endowed, nonsectarian, nonprofit institution of higher education. Known originally as King's College, the University was founded under a charter granted in 1754 by King George II. Today, the University is one of the largest private institutions of higher education in the United States, with a full-time faculty of nearly 4,000 and a student body of approximately 8,712 undergraduate students and 22,605 graduate students. Instruction and research are carried out in 16 component schools located at two primary sites in New York City and several additional sites outside the City. The University is formally affiliated with several neighboring institutions, including Barnard College, Teachers College and Union Theological Seminary.

The University offers degree and certificate programs through 16 faculties and schools, consisting of Columbia College, its original school, the School of General Studies (a liberal arts college for non-traditional students), and the 14 professional or specialized divisions whose programs supplement the liberal arts curricula. The University offers bachelor's degrees in 93 subject areas, master's degrees in 224 subject areas, doctoral degrees in 88 academic fields, and 72 certificate programs.

The University's professional and specialized divisions include the schools of Columbia University Medical Center (CUMC), the School of Law founded in 1858, the Fu Foundation School of Engineering and Applied Science

founded in 1864, the Graduate School of Arts and Sciences founded in 1820 and the Graduate School of Business founded in 1916. CUMC comprises the University's College of Physicians and Surgeons founded in 1767 (the second oldest medical school in the country and the first to grant an M.D. degree), the School of Nursing founded in 1892, Mailman School of Public Health founded in 1922 and the College of Dental Medicine founded in 1916.

The University is a member of numerous professional associations, including the Association of American Universities, and is accredited by the Middle States Commission on Higher Education. In addition, ten of its professional schools hold separate accreditation from their respective professional associations.

Description of the Series 2017 Bonds

- The Bonds are a special obligation of DASNY.
- The Loan Agreement is a general obligation of the University.
- The Bonds are payable from payments made under the Loan Agreement and all funds and accounts established under the Resolution.

Approvals

- SEQR Filing – January 10, 2017*
 - PACB Approval – January 18, 2017*
 - TEFRA Hearing – January 18, 2017*
- *Anticipated date.

Strengths

- Demand & Enrollment - Columbia University attracts highly qualified students and is among the most selective universities in the country. Of the 36,292 applicants for fall 2016, just 2,279 were accepted, indicating an acceptance rate of 6.3%.
- Revenue Diversification - The University's overall revenue mix is diverse, making it less vulnerable to fluctuations from a single revenue source. For fiscal year 2016, only 23% of the University's total operating revenues came from net tuition and fees.
- Financial Resources - Columbia continues to report significant net assets which exceeded \$13 billion at FYE 2016. The University's reserves continue to grow even during a period of high capital spending, with expendable net assets increasing from \$7.1 billion in 2012 to \$8.0 billion in 2016.
- Balance Sheet Liquidity - The University demonstrated a pro forma viability ratio of 4.2:1 when factoring in the additional indebtedness from the proposed issuance, still well in excess of the DASNY median.



DASNY

DIVISION OF PUBLIC FINANCE AND PORTFOLIO MONITORING
PORTIA LEE, MANAGING DIRECTOR
PREPARED BY: DAVID P. OSTRANDER (518) 257-3164

Single Approval Credit Summary

Columbia University
New York, New York

January 4, 2017

Program: Independent Colleges & Universities

Purpose: New Money/Refunding

- Fundraising - On December 31, 2013, Columbia set an Ivy League record by raising more than \$6.1 billion over eight years. Fundraising has allowed the University to make substantial capital investment without significantly impacting leverage. Since 2012, Columbia has invested over \$1 billion in property, plant and equipment, while long-term debt increased by just over \$100 million.
- Savings - Assuming current market conditions, a total net present value savings in the range of \$8.6 million, or 17.8% of the refunded bonds, is expected from the proposed refunding of the Series 2004C Bonds.

Risks/Challenges

- Dependence on Patient Care Revenues – While the University's operating revenues remain highly diversified, a substantial portion (26% in fiscal year 2016) are derived from patient care through its large faculty practice plan and affiliations with local hospitals. This level of exposure presents some risk due to susceptibility to regulatory and government payer changes.

Recommendation

The attached staff report recommends that the Board adopt the necessary documents for one or more series of bonds with maturities not to exceed 31 years in an aggregate amount not to exceed \$200,000,000 based on the University's significant balance sheet, its positive enrollment trends and DASNY's past experience with Columbia.

Columbia University

INSTITUTION: Columbia University is a privately endowed, nonsectarian, nonprofit institution of higher education. Known originally as King's College, the University was founded under a charter granted in 1754 by King George II. Today, the University is one of the largest private institutions of higher education in the United States, with a full-time faculty of nearly 4,000 and a student body of approximately 8,712 undergraduate students and 22,605 graduate students. Instruction and research are carried out in 16 component schools located at two primary sites in New York City and several additional sites outside the City. The University is formally affiliated with several neighboring institutions, including Barnard College, Teachers College and Union Theological Seminary.

The University offers degree and certificate programs through 16 faculties and schools, consisting of Columbia College, its original school, the School of General Studies (a liberal arts college for non-traditional students), and the 14 professional or specialized divisions whose programs supplement the liberal arts curricula. The University offers bachelor's degrees in 93 subject areas, master's degrees in 224 subject areas, doctoral degrees in 88 academic fields, and 72 certificate programs.

The University's professional and specialized divisions include the schools of Columbia University Medical Center (CUMC), the School of Law founded in 1858, the Fu Foundation School of Engineering and Applied Science founded in 1864, the Graduate School of Arts and Sciences founded in 1820 and the Graduate School of Business founded in 1916. CUMC comprises the University's College of Physicians and Surgeons founded in 1767 (the second oldest medical school in the country and the first to grant an M.D. degree), the School of Nursing founded in 1892, Mailman School of Public Health founded in 1922 and the College of Dental Medicine founded in 1916.

The University is a member of numerous professional associations, including the Association of American Universities, and is accredited by the Middle States Commission on Higher Education. In addition, ten of its professional schools hold separate accreditation from their respective professional associations.

DASNY FINANCING HISTORY: The University has been a client of DASNY since 1963. Over the last 54 years, DASNY has issued 35 separate obligations on behalf of the University totaling over \$3.0 billion.

As of September 30, 2016, nearly \$1.4 billion in DASNY debt issued on behalf of Columbia University remained outstanding as shown in Table 1 below:

Table 1 -- Outstanding DASNY Debt

<u>Series</u>	<u>Defeasance or Maturity</u>	<u>Amount Issued (000's)</u>	<u>Amount Outstanding (000's)</u>
1963 through 1994	-	\$846,809	-
1997 CP	2015	55,780	-
1998	2006	79,225	-
2000A	2011	121,700	-
2002A	2012	34,245	-
2002B	2012	96,700	-
2002C	2027	23,300	23,300
2003A	2012	87,775	-
2003B	2028	30,000	30,000
2004A1	2007	22,765	-
2004A2	2014	51,935	-
2004B	2014	100,000	-
2004C	2028	50,000	48,270
2006A	2016	225,000	-
2006B	2016	156,890	-
2008A	2038	282,715	200,000
2009A	2039	117,000	117,000
2011A	2041	300,000	300,000
2012A	2022	137,935	137,935
2015A	2045	92,535	92,535
2015B	2024	47,780	47,780
2016A-1	2026	50,000	50,000
2016A-2	2046	130,000	130,000
2016B	2031	<u>209,705</u>	<u>209,705</u>
		\$3,349,794	\$1,386,525

The University has always met its obligations to DASNY on time and in full.

THE PROJECT: Proceeds from the proposed bond issue will be used to finance numerous construction and renovation projects located throughout the Columbia University system. The Project is anticipated to include the continued construction, demolitions, foundations and site preparations for the University's expansion to the Manhattanville Campus (see below). A major portion of the Project includes the foundation and below grade service facility associated with the construction of Columbia's new Business School to be located on the Manhattanville Campus. A number of Manhattanville projects were also included in the University's DASNY issuances in 2012, 2015 and 2016. The full Project List, included as Attachment I, also includes renovations at the Morningside Heights and Medical Center campuses.

Manhattanville Campus: Construction continues on the University's first expansion in over 75 years, an extensive capital project in West Harlem referred to as the "Manhattanville Campus". The Manhattanville Campus will be realized over the course of the next several decades in a former industrial area on the west side of Manhattan between 125th and 133rd Street, with 6.8 million square feet of new academic space expected to cost approximately \$6.3 billion.

Two facilities on the Manhattanville Campus are nearing completion, with full operation and opening ceremonies expected in Spring 2017; the Jerome L. Greene Science Center and the Lenfest Center for the Arts. The Jerome L. Greene Science Center, a 450,000 square foot neuroscience research facility, is the largest building ever constructed by Columbia and the biggest academic science building in New York City. In addition, a 56,000 square foot University Forum and Academic Conference Center is expected to open in 2018 and the new Columbia Business School is set to begin construction in 2017.

Columbia is working to develop the Manhattanville Campus in a way that is environmentally sustainable. In 2012, the U.S. Green Building Council awarded the Manhattanville Campus LEED Platinum certification under the LEED green building program rating system for Neighborhood Development. The Jerome L. Greene Science Center, which is expected to receive LEED Certification once complete, was partially financed with \$50 million of "green bonds" issued through DASNY, allowing bondholders to invest directly in projects that the University has identified as promoting environmental sustainability purposes.

The University has worked extensively with both New York State and local residents to incorporate the needs of the surrounding community into its expansion plans. As part of the Manhattanville campus development, Columbia reached agreements with the West Harlem Development Corporation and Empire State Development that invest more than \$150 million into the community and support an expansion of educational, cultural, healthcare and civic programs.

THE REFUNDING PLAN: Proceeds from the Series 2017 Bonds are also expected to be used to refund all or a portion of the DASNY Series 2004C Bonds. The Series 2004C Bonds have a current par amount outstanding of \$48,270,000 and reach final maturity on July 1, 2029. Principal on the refunding bonds will be paid annually on October 1st to match the new money bonds, extending the final maturity of the refunded bonds by three months to October 1, 2029. The 2004C Bonds are callable at par on or after July 1, 2017.

Assuming current market conditions, a total net present value savings in the range of \$8.6 million, or 17.8% of the refunded bonds, is expected as shown in Attachment II.

FINANCING DETAILS: Project costs totaling approximately \$150.0 million are expected to be funded with bond proceeds. Approximately \$49.4 million in proceeds will be applied toward the refunding escrow deposits. Issuance costs are approximated in the range of \$570,000 and an underwriter's discount in the neighborhood of \$1.2 million is anticipated. Completing the plan of finance will require a bond issue of approximately \$176.1 million. To provide flexibility and to accommodate different couponing structures, staff is requesting bonding authorization in an amount not to exceed \$200.0 million to ensure sufficient proceeds to complete the financing. A table of the estimated sources and uses of funds is provided in Attachment III.

Security Provisions: Moody's Investors Service has assigned a rating of "Aaa" to all of the outstanding obligations of the University. Standard & Poor's has rated the University's obligations "AAA". Both rating agencies have assigned a Stable Outlook to the University. Accordingly, Columbia qualifies for an unsecured borrowing under DASNY's Financing Guidelines for Independent Institutions. As such, the Loan Agreement will be a general unsecured obligation of the University and no security interest in any revenues or assets of the University will be granted by the University to DASNY under the Loan Agreement.

Table 2 – Selected Enrollment Statistics

	<u>2012</u>	<u>2013</u>	<u>2014</u>	<u>2015</u>	<u>2016</u>
First-time Freshman Applications Received	31,851	33,531	32,967	36,250	36,292
First-time Freshman Applications Accepted	2,362	2,311	2,291	2,222	2,279
Undergraduate Acceptance Ratio	7.4%	6.9%	6.9%	6.1%	6.3%
First-time Freshman Applicants Enrolled	1,415	1,416	1,424	1,402	1,424
Undergraduate Matriculation Ratio	59.9%	61.3%	62.2%	63.1%	62.5%
Mean SAT Scores (Entering Freshmen)	1,480	1,490	1,490	1,490	N/A
Headcount Enrollment					
Full-Time	23,170	23,864	24,453	24,728	25,517
Part-Time	<u>5,654</u>	<u>5,386</u>	<u>5,417</u>	<u>5,576</u>	<u>5,800</u>
Total	28,824	29,250	29,870	30,304	31,317
Full-time Equivalent Enrollment					
Undergraduate	7,428	7,572	7,718	7,796	8,058
Graduate	<u>17,626</u>	<u>18,086</u>	<u>18,540</u>	<u>18,790</u>	<u>19,392</u>
Total	25,054	25,658	26,258	26,586	27,450

FEASIBILITY - ENROLLMENT ANALYSIS: Table 2 above presents selected enrollment statistics provided by Columbia University for the last five years. Columbia University attracts highly qualified students and is among the most selective universities in the country. Applications received have averaged 34,178 over the last five years. Of the 36,292 applicants for fall 2016, just 2,279 were accepted, indicating an acceptance rate of 6.3%. Of those applicants accepted, 1,424 chose to attend, resulting in a matriculation rate of 62.5%. Columbia has the financial resources to maintain a policy of accepting the most qualified students regardless of financial need. Institutionally funded financial aid has increased by over 21% since the fall of 2011, from \$298.9 million in fiscal year 2012 to \$361.8 million in fiscal year 2016. Yet, the University's tuition discount rate remains manageable at 26.5%. Mean SAT scores for incoming freshman have averaged right around 1,490.

The University reported total headcount enrollment of 31,317 for fall 2016, an increase of 2,493 students from the fall of 2012. Similarly, FTE enrollment hit a five-year high of 27,450 as a result of consistent growth over the past decade. Undergraduate students currently represent approximately 30% of total FTE enrollment. Management expects to maintain the current size of the undergraduate program with future growth coming from graduate and professional students.

Market Analysis: Columbia College draws students from all 50 states of the nation and more than 75 countries. About one-third of Columbia College's students are from the tri-state region of New York, New Jersey and Connecticut. As Columbia's applicant pool has grown over the past five years, the enrolled population has become more geographically and demographically diverse.

The chart that follows illustrates the University's success in attracting and maintaining an increasing FTE enrollment for the past five years.

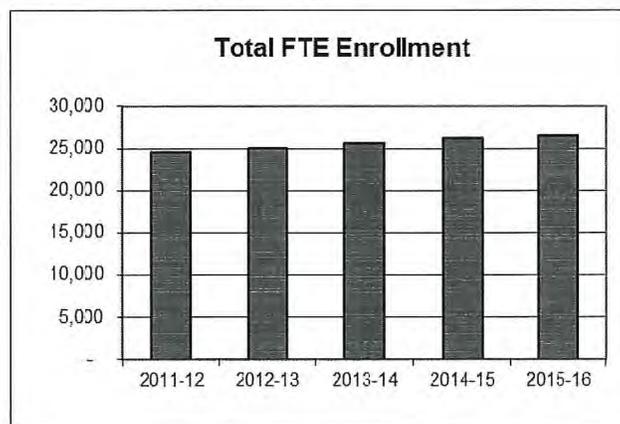


Table 3 – Selected Operating Statistics

(dollars in thousands)

	<u>2012</u>	<u>2013</u>	<u>2014</u>	<u>2015</u>	<u>2016</u>
Total operating revenue	\$3,595,519	\$3,685,903	\$3,860,611	\$4,085,362	\$4,315,202
Total operating expense	<u>3,425,061</u>	<u>3,460,017</u>	<u>3,605,779</u>	<u>3,800,891</u>	<u>4,044,402</u>
Change in net assets from operations	170,458	225,886	254,832	284,471	270,800
Total non-operating revenue	<u>(272,940)</u>	<u>218,444</u>	<u>366,744</u>	<u>12,839</u>	<u>(331,558)</u>
Change in unrestricted net assets	(102,482)	444,330	621,576	297,310	(60,758)
Plus: Total depreciation/amortization	191,470	182,013	191,984	199,652	207,114
Plus: Total interest paid (expense)	<u>57,117</u>	<u>47,386</u>	<u>47,162</u>	<u>43,047</u>	<u>44,116</u>
Adjusted change in net assets	\$146,105	\$673,729	\$860,722	\$540,009	\$190,472
Cash provided by operating activities	\$358,966	\$433,498	\$392,714	\$692,864	\$637,231
Total annual debt service	\$150,965	\$134,084	\$140,773	\$166,492	\$154,073
Net Operating Ratio (DASNY 2015 Median: 1.3%)	4.7%	6.1%	6.6%	7.0%	6.3%
Net Income Ratio (DASNY 2015 Median: 2.5%)	-2.0%	13.2%	17.0%	8.2%	-1.1%
Cash Income Ratio (DASNY 2015 Median: 3.8%)	10.0%	11.8%	10.2%	17.0%	14.8%
Capital Expense Ratio (DASNY 2015 Median: 4.5%)	4.6%	4.0%	4.0%	4.5%	3.9%
Debt Coverage Ratio (DASNY 2015 Median: 2.0:1)	2.7	3.3	3.4	3.1	3.4
Net Tuition Per FTE Student (DASNY 2015 Median: \$27,500)	\$31,995	\$32,978	\$34,584	\$35,847	\$37,749

FEASIBILITY - OPERATIONS ANALYSIS: Columbia has reported positive operating margins in each of the past five years, ranging from a low of \$170.5 million in fiscal year 2012 to a high of \$284.5 million in fiscal year 2015. The University's Net Operating Margin averaged 6.1% during this period. The University has demonstrated strong growth in Net Tuition Per FTE Student, increasing from \$31,995 in fiscal year 2012 to \$37,749 in fiscal year 2015, an increase of nearly 18%.

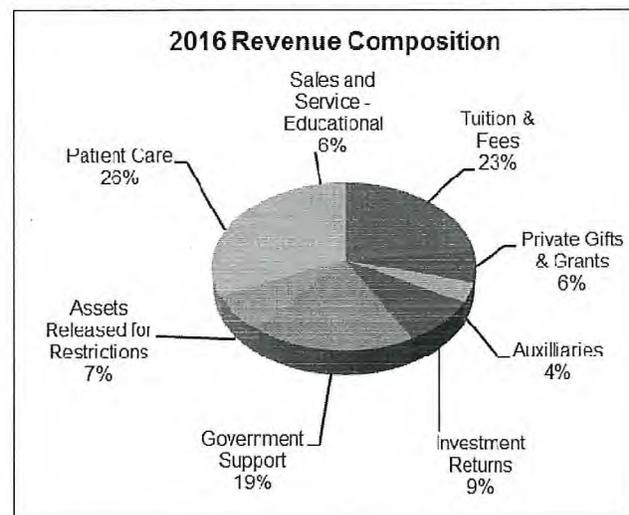
The University reported positive net income results in three of the last five years. Year-to-year fluctuations are largely due to unrealized investment returns from Columbia's substantial investment portfolio. For fiscal year 2012, the negative change in Unrestricted Net Assets of \$102.4 million was driven by investment losses of \$175.2 million and a \$56.4 million increase in pension and post retirement obligations due in part to lower returns on plan assets in 2012. In fiscal year 2016, investment losses totaling \$280.0 million, an increase in pension obligations of \$37.5 million, and a \$14.5 million reclassification resulted in a negative change in Unrestricted Net Assets of \$60.8 million. Overall, the University's Net Income Margin averaged 7.1% annually over five years, reflecting strong investment performance adding to positive operating results. Net cash from operating activities has also been strong, averaging \$503.1 million over the last five years.

As illustrated in the chart that follows, the University's overall revenue mix is diverse, making it less vulnerable to fluctuations from a single revenue source. For fiscal year 2016, only 23% of the University's total operating revenues came from net tuition and fees compared to the 46.8% median in 2015 for all Research/Doctoral institutions in the DASNY portfolio.

At 26%, patient care revenue represented the largest revenue category. This level of exposure presents some risk due to susceptibility to regulatory and government payer changes. Patient care activities relate to three

distinct areas: medical faculty practice plans, affiliation agreements, and medical and professional service agreements. In fiscal year 2016, medical faculty practice revenues of \$747.9 million were the largest component of patient care revenues, followed by revenue from affiliation agreements at \$320.0 million. The University maintains several clinical and educational affiliations, the most significant of which are with New York-Presbyterian Hospital, Lawrence Hospital, and Harlem Hospital.

Government grants and contracts for research activities comprised 19%, investment returns 9%, receipts from other educational and research activities (largely royalty and license income from patents) made up 6%, and private gifts, grants, and contracts 6% of revenues.



Since 2012, the University has demonstrated an average annual debt coverage ratio of 3.2:1.

Table 4 – Selected Financial Position Statistics

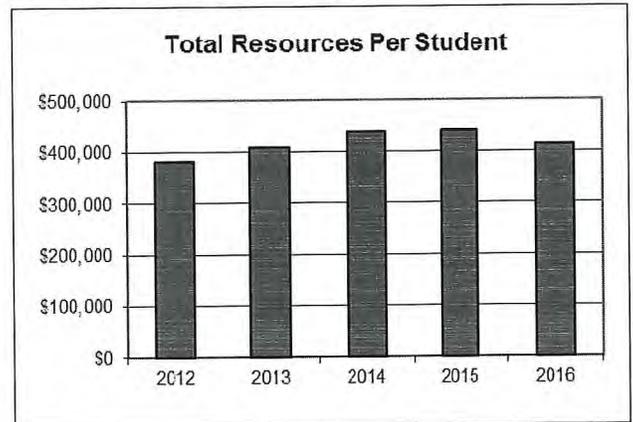
<i>(dollars in thousands)</i>	<u>2012</u>	<u>2013</u>	<u>2014</u>	<u>2015</u>	<u>2016</u>
Total Assets	\$13,726,891	\$14,728,942	\$16,046,022	\$16,871,019	\$16,742,753
Total Liabilities	3,074,840	3,028,245	2,941,210	3,195,910	3,461,993
Net Assets					
Unrestricted	4,661,233	5,105,563	5,727,139	6,024,449	5,963,691
Temporarily Restricted	3,685,376	4,057,273	4,654,194	4,770,391	4,304,959
Permanently Restricted	<u>2,305,442</u>	<u>2,537,861</u>	<u>2,723,479</u>	<u>2,880,269</u>	<u>3,012,110</u>
Total Net Assets	\$10,652,051	\$11,700,697	\$13,104,812	\$13,675,109	\$13,280,760
Long-Term Debt	\$1,650,321	\$1,599,323	\$1,546,820	\$1,664,435	\$1,752,739
Viability Ratio (DASNY 2015 Median: 1.0:1)	4.3	4.8	5.5	5.2	4.5
Primary Reserve Ratio (DASNY 2015 Median: 0.8:1)	2.1	2.2	2.4	2.3	2.0
Leverage Ratio (DASNY 2015 Median: 2.0:1)	5.1	5.7	6.7	6.5	5.9
Available Assets Ratio (DASNY 2015 Median: 1.9:1)	3.7	4.0	4.5	4.4	4.0
Total Resources Per Student (DASNY 2015 Median: \$78,724)	\$382,525	\$408,377	\$439,467	\$442,222	\$412,805

FEASIBILITY - BALANCE SHEET ANALYSIS: The University's liquidity ratios are strong and compare favorably with the 2015 DASNY medians. For fiscal year 2016, Columbia reported a Viability Ratio of 4.5 times (1.0 median) and an Unrestricted Resources to Debt Ratio of 2.1 times (0.5 median) reflecting sufficient reserves to more than cover all its outstanding indebtedness. The borrowing currently proposed is expected to have only a minor impact on the University's balance sheet liquidity. When factoring in the additional \$150 million of proposed new money debt, the Viability Ratio would fall to 4.2:1 and Unrestricted Resources to Debt would fall to 1.9:1, still well above the 2015 DASNY medians.

The University reported a Primary Reserve Ratio of 2.0 times (0.8 median) at FYE 2016, indicating an ability of the University to operate for two years using reserve balances only.

The University had total net assets of \$13.3 billion at FYE 2016, of which \$6.0 billion were unrestricted. Total Net Assets have increased significantly since 2012, up \$2.6 billion, or nearly 25%. Reflecting the growth in assets, return on net assets averaged 4.6% over the five years. The College's financial resource base, as measured by expendable net assets, grew from \$7.1 billion in 2012 to \$8.0 billion in 2016. This growth has occurred even during a period of high capital spending due to strong fundraising (see below) and investment returns. Columbia achieved a capitalization ratio (net assets to total assets) of 79.3% as of FYE 2016, well above the 2015 DASNY median of 60.8%.

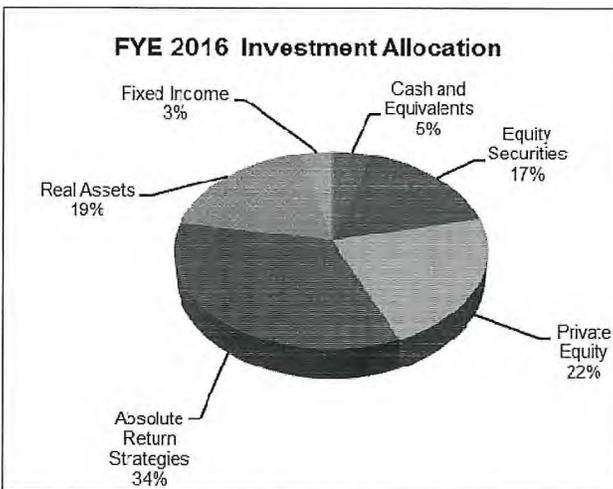
Finally, the following graph illustrates the magnitude of the University's total resources per student which has averaged over \$400,000 for the past five years.



FUNDRAISING: Fundraising continues to play an important role in the Manhattanville expansion. On December 31, 2013, Columbia set an Ivy League record by raising more than \$6.1 billion over eight years. When launched in 2006, the \$4 billion “Columbia Campaign” was the largest in the history of American higher education. The campaign was originally scheduled to conclude in December 2011, but as of September 30, 2010 the campaign had raised over \$3.7 billion. Accordingly, the campaign was expanded to a \$5 billion goal with an end date of December 31, 2013. The campaign raised: (i) \$2.1 billion for faculty and research; (ii) \$1.2 billion for students; (iii) \$1 billion for facilities; (iv) \$500M for annual giving; and (v) \$1.3 billion in “Other” giving (i.e. program support for existing curriculum; new program development, etc.). Columbia’s donor base increased by 52% during the eight year campaign.

Fundraising has allowed the University to make substantial capital investment without significantly impacting leverage. Since 2012, Columbia has invested over \$1 billion in property, plant and equipment, while long-term debt increased by just over \$100 million.

INVESTMENTS: The market value of Columbia’s endowment was ranked 1st in New York State and 11th in the nation according to the 2015 NACUBO Endowment Study (based on FYE 2014 market values). The University’s endowment consists of approximately 5,200 separate funds established over many years for a wide variety of purposes. At FYE 2016, the University reported investments with a total market value of just under \$9.0 billion. The chart that follows presents the composition of the University’s endowment with market valuations as of June 30, 2016.



As of June 30, 2016, the market value of Columbia’s investments was broken down as follows (in 000’s):

Cash & Cash Equivalents	\$ 414,772
Global Equities	1,495,650
Fixed Income	308,116
Absolute Return Strategies	3,083,760
Private Equity	1,980,955
Real Assets	<u>1,671,743</u>
Total Fund	\$8,954,996

The University holds certain investment fund agreements which obligate the University to advance additional funding periodically up to specified levels over a period of several years. At June 30, 2016, the University had unfunded commitments of approximately \$2.2 billion. The

University has various sources of internal liquidity at its disposal, including cash, cash equivalents, marketable debt and equity securities and lines of credit available to fund the committed drawdowns.

The University’s current endowment spending rule is based on two factors: (1) the market value multiplied by a 5% target spending rate, which receives a 40% weighting (providing a response to investment market conditions); and (2) the prior year’s spending with an inflation factor, which receives a 60% weighting (tying spending increases to operating needs and cushioning spending against market volatility). This allows the University to maintain the purchasing power of the endowment assets held in perpetuity or for a specified term as well as to provide additional real growth through new gifts and investment return.

The University’s endowment includes a significant residential real estate portfolio consisting of properties proximate to the Morningside Heights and Washington Heights campuses providing housing to faculty, staff, and graduate students. Income from the rental properties in the portfolio is used to support operating costs. As of FYE 2016, the book value of the real estate was \$451.9 million. According to the University, the appraised market value of these properties as of June 30, 2015 was \$1.9 billion.

SUMMARY: Columbia University is an extremely sound, financially strong institution. Based on its positive enrollment trends, solid operating performance, and its significant financial resources, as well as DASNY’s past experience with the University, staff recommends that the Board adopt the necessary documents for one or more series of bonds with terms not to exceed 31 years to be sold at one or more times in an aggregate amount not to exceed \$200,000,000 on behalf of Columbia University.

Columbia University
DASNY Series 2017- New Money Projects

Location/Campus	Project	Property Address or Location	Project Description	Nature of Work	PROJECT COST (000's) ³
Manhattanville	Columbia Business School & Foundation ¹	No address yet -CIP (Between 130th to 131st Streets from Broadway to 12th Avenue, New York, NY 10027)	Design development and construction of all systems required to complete the Columbia Business School and underground foundations	New Construction & associated site preparation	959,300
Manhattanville	Lenfest Center for the Arts	No address yet -CIP (Between 129th to 130 Streets	Design development and construction of all systems required to complete the Lenfest Center for the Arts	New Construction & associated site preparation	30,000
Manhattanville	Jerome L. Greene Science Center	No address yet -CIP (Between 129th to 130 Streets	Design development and construction of all systems required to complete the Jerome L. Greene Science Center for the Mind, Brain and Behavior initiative.	New Construction & associated site preparation	253,234
Manhattanville	Open Space in Manhattanville	No address assigned yet - CIP	Design and construction of the small square and design development only for the large square, phase II landscape and streetscape work and the open space.	New Construction & associated site preparation	14,539
Manhattanville	615 West 131st St 600 level	615 West 131st Street	Renovation of the 600 level of the Studebaker Building to convert space formerly leased by Alexander Doll Company into office space for University administrators.	Renovation, upgrading and alteration	7,044
Medical Center	Institute for Comparative Medicine Animal Facilities in William Black, Physicians and Surgeons & Hammer Health Sciences ²	650 West 168th Street	Renovations of animal research and support spaces in the Black & Physicians & Surgeons buildings 18th & 19th floor & Hammer Health Sciences building 17th floor project.	Renovation, upgrading and alteration	15,468
Morningside	Fairchild Hall 800 level	1212 Amsterdam Avenue	Renovation of the department of Biological Sciences existing laboratories	Renovation, upgrading and alteration	6,411
Morningside	Northwest Building Department of Physics Professor Basov Laboratory Renovation 1100 level	550 West 120th Street	Renovation of physics department laboratory and support space in the Northwest Corner Building	Renovation, upgrading and alteration	5,400
Morningside	A&S - Nanoscience Shared Facilities Clean Room Upgrade & Expansion in CEPSSR 1000 level	530 West 120th Street	Renovation and expansion of an existing 3,000 square foot Columbia Nanofabrication Facility to 4,600 square feet to support current and emerging efforts in nanobiology and nanomedicine in the Fu Foundation School of Engineering and Applied Science, Arts and Sciences and the School of Physicians and Surgeons.	Renovation, upgrading and alteration	2,501
Morningside	A&S - Havemeyer Hall Chemistry Laboratory 400 lvl	3000 Broadway	Renovation of Chemistry department of the 400 level of Havemeyer Hall to renovate of an existing, unused laboratory space. The new laboratory includes construction, new furniture, upgrades or replace new mechanical supply.	Renovation, upgrading and alteration	1,575
Morningside	A&S - Pupin Hall Physics Theory Center 800 & 900 levels	538 West 120th Street	Conversion of the east side of 800 and 900 levels into new Physics Theory Center for use by faculty, postdoctoral researchers and graduate students of the University.	Renovation, upgrading and alteration	1,568
Morningside	A&S - Watson Hall Statistics Faculty Offices 600 level	612 West 115th Street	Renovation of the 600 level of Watson Hall to accommodate the expansion of Statistics department for CUIT offices and the Gender Based Misconduct office.	Renovation, upgrading and alteration	1,296
Morningside	A&S - Chandler Hall Chemistry Department Laboratory 700 level	3010 Broadway	Conversion of Chandler Hall into new and additional wet laboratory space.	Renovation, upgrading and alteration	990
	Institutional Real Estate Renovation		Various properties on Upper West Side of Manhattan, New York, NY 10027: 107th to 108th Street from Columbus Ave to Central Park West; <i>and/or</i> 108th to 110th streets from Amsterdam Ave to Riverside Drive; <i>and/or</i> 110th to 122th Streets from Morningside to Riverside Drives; <i>and/or</i> 122th to 125th from Broadway to Riverside Drive	Renovation, upgrading and alteration	33,500

1. Business School: two above ground buildings on sites 6B and 7 for \$603.7 million; Phase II Foundation & Below Grade Service Facility for \$355.6 million

2. a) Hammer 17th floor = 14,050 square feet; b) Black/P&S 18th floor = 9,950 square feet; c) Black/P&S = 9,950 square feet.

3. Project Cost is the Trustee approved debt financing for the Project which may be less than the Project Budget (cost to construct and complete).

1,332,827