NUVEEN PENNSYLVANIA QUALITY MUNICIPAL INCOME FUND
Form DEF 14A
October 04, 2017

UNITED STATES

SECURITIES AND EXCHANGE COMMISSION

Washington, D.C. 20549

SCHEDULE 14A

Proxy Statement Pursuant to Section 14(a) of the

Securities Exchange Act of 1934

(Amendment No.)

Filed by the Registrant Filed by a Party other than the Registrant

Check the appropriate box:

Preliminary Proxy Statement.

Confidential, for Use of the Commission Only (as permitted by Rule 14a-6(e)(2)).

Definitive Proxy Statement.

Definitive Additional Materials.

Soliciting Material Pursuant to §240.14a-11(c) or §240.14a-12

Nuveen Pennsylvania Quality Municipal Income Fund (NQP)

(Name of Registrant as Specified In Its Charter)

(Name of Person(s) Filing Proxy Statement, if other than the Registrant)

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No fee required.

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3) Per unit price or other underlying value of transaction computed pursuant to Exchange Act Rule 0-11 (set forth the amount on which the filing fee is calculated and state how it was determined):

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1) Amount Previously Paid:

2) Form, Schedule or Registration Statement No.:

3) Filing Party:

4) Date Filed:

333 West Wacker Drive

Chicago, Illinois 60606

(800) 257-8787

Notice of Annual Meeting of Shareholders to be held on November 14, 2017

October 4, 2017

Nuveen Arizona Quality Municipal Income Fund (NAZ)

Nuveen California AMT-Free Quality Municipal Income Fund (NKX)

Nuveen California Municipal Value Fund, Inc. (NCA)

Nuveen California Municipal Value Fund 2 (NCB)

Nuveen California Quality Municipal Income Fund (NAC)

Nuveen Massachusetts Quality Municipal Income Fund (NMT)

Nuveen Michigan Quality Municipal Income Fund (NUM)

Nuveen New Jersey Quality Municipal Income Fund (NXJ)

Nuveen New Jersey Municipal Value Fund (NJV)

Nuveen Ohio Quality Municipal Income Fund (NUO)

Nuveen Pennsylvania Quality Municipal Income Fund (NQP)

Nuveen Pennsylvania Municipal Value Fund (NPN)

Nuveen Texas Quality Municipal Income Fund (NTX)

To the Shareholders of the Above Funds:

Notice is hereby given that the Annual Meeting of Shareholders of each of Nuveen Arizona Quality Municipal Income Fund (Arizona Quality), Nuveen California AMT-Free Quality Municipal Income Fund (California AMT-Free), Nuveen California Municipal Value Fund 2 (California Value 2), Nuveen California Quality Municipal Income Fund (California Quality), Nuveen Massachusetts Quality Municipal Income Fund (Massachusetts Quality), Nuveen Michigan Quality Municipal Income Fund (Michigan Quality), Nuveen New Jersey Quality Municipal Income Fund (New Jersey Quality), Nuveen New Jersey Municipal Value Fund (New Jersey Value), Nuveen Ohio Quality Municipal Income Fund (Ohio Quality), Nuveen Pennsylvania Quality Municipal Income Fund (Pennsylvania Quality), Nuveen Pennsylvania Municipal Value Fund (Pennsylvania Value) and Nuveen Texas Quality Municipal Income Fund (Texas Quality), each a **Massachusetts business trust** (each, a Massachusetts Fund and collectively, the Massachusetts Funds), and Nuveen California Municipal Value Fund, Inc. (California Value), a **Minnesota corporation** (California Value and the Massachusetts Funds are each a Fund and collectively, the Funds), will be held in the offices of Nuveen, 333 West Wacker Drive, Chicago, Illinois, on Tuesday, November 14, 2017, at 2:00 p.m., Central time (for each Fund, an Annual Meeting and collectively, the Annual Meetings), for the following purposes and to transact such other business, if any, as may properly come before the Annual Meeting.

Matters to Be Voted on by Shareholders:

1. To elect Members to the Board of Directors/Trustees (each a Board and each Director or Trustee a Board Member) of each Fund as outlined below:

   a. For each Massachusetts Fund (except California Value 2, New Jersey Value and Pennsylvania Value), to elect six (6) Board Members.

      i) four (4) Class II Board Members to be elected by the holders of Common Shares and Preferred Shares, voting together as a single class; and

      ii) two (2) Board Members to be elected by the holders of Preferred Shares only, voting separately as a single class.

   b. For California Value, California Value 2, New Jersey Value and Pennsylvania Value, to elect four (4) Class II Board Members.

2. To transact such other business as may properly come before the Annual Meeting.

Shareholders of record at the close of business on September 18, 2017 are entitled to notice of and to vote at the Annual Meeting.

All shareholders are cordially invited to attend the Annual Meeting. In order to avoid delay and additional expense and to assure that your shares are represented, please vote as promptly as possible, regardless of whether or not you plan to attend the Annual Meeting. You may vote by mail, telephone or over the Internet. To vote by mail, please mark, sign, date and mail the enclosed proxy card. No postage is required if mailed in the United States. To vote by telephone, please call the toll-free number located on your proxy card and follow the recorded instructions, using your proxy card as a guide. To vote over the Internet, go to the Internet address provided on your proxy card and follow the instructions, using your proxy card as a guide.

If you intend to attend the Annual Meeting in person and you are a record holder of a Fund s shares, in order to gain admission you must show photographic identification, such as your driver s license. If you intend to attend the Annual Meeting in person and you hold your shares through a bank, broker or other custodian, in order to gain admission you must show photographic identification, such as your driver s license, and satisfactory proof of ownership of shares of a Fund, such as your voting instruction form (or a copy thereof) or broker s statement indicating ownership as of a recent date. If you hold your shares in a brokerage account or through a bank or other nominee, you will not be able to vote in person at the Annual Meeting unless you have previously requested and obtained a legal proxy from your broker, bank or other nominee and present it at the Annual Meeting.

Gifford R. Zimmerman

Vice President and Secretary

333 West Wacker Drive

Chicago, Illinois 60606

(800) 257-8787

Joint Proxy Statement

October 4, 2017

This Joint Proxy Statement is first being mailed to shareholders on or about October 6, 2017.

Nuveen Arizona Quality Municipal Income Fund (NAZ)

Nuveen California AMT-Free Quality Municipal Income Fund (NKX)

Nuveen California Municipal Value Fund, Inc. (NCA)

Nuveen California Municipal Value Fund 2 (NCB)

Nuveen California Quality Municipal Income Fund (NAC)

Nuveen Massachusetts Quality Municipal Income Fund (NMT)

Nuveen Michigan Quality Municipal Income Fund (NUM)

Nuveen New Jersey Quality Municipal Income Fund (NXJ)

Nuveen New Jersey Municipal Value Fund (NJV)

Nuveen Ohio Quality Municipal Income Fund (NUO)

Nuveen Pennsylvania Quality Municipal Income Fund (NQP)

Nuveen Pennsylvania Municipal Value Fund (NPN)

Nuveen Texas Quality Municipal Income Fund (NTX)

General Information

This Joint Proxy Statement is furnished in connection with the solicitation by the Board of Trustees or Directors (each a Board and collectively, the Boards, and each Trustee or Director, a Board Member and collectively, the Board Members) of each of Nuveen Arizona Quality Municipal Income Fund (Arizona Quality), Nuveen California AMT-Free Quality Municipal Income Fund (California AMT-Free), Nuveen California Municipal Value Fund 2 (California Value 2), Nuveen California Quality Municipal Income Fund (California Quality), Nuveen Massachusetts Quality Municipal Income Fund (Massachusetts Quality), Nuveen Michigan Quality Municipal Income Fund (Michigan Quality), Nuveen New Jersey Quality Municipal Income Fund (New Jersey Quality), Nuveen New Jersey Municipal Value Fund (New Jersey Value), Nuveen Ohio Quality Municipal Income Fund (Ohio Quality), Nuveen Pennsylvania Quality Municipal Income Fund (Pennsylvania Quality), Nuveen Pennsylvania Municipal Value Fund (Pennsylvania Value) and Nuveen Texas Quality Municipal Income Fund (Texas Quality), each a **Massachusetts business trust** (each, a Massachusetts Fund and collectively, the Massachusetts Funds), and Nuveen California Municipal Value Fund, Inc. (California Value), a **Minnesota corporation** (California Value and the Massachusetts Funds are each a Fund and collectively, the Funds), of proxies to be voted at the Annual Meeting of Shareholders to be held in the offices of Nuveen, 333 West Wacker Drive, Chicago, Illinois, on Tuesday, November 14, 2017 at 2:00 p.m., Central time (for each Fund, an Annual Meeting and collectively, the Annual Meetings), and at any and all adjournments thereof.

On the matters coming before each Annual Meeting as to which a choice has been specified by shareholders on the proxy, the shares will be voted accordingly. If a properly executed proxy is returned and no choice is specified, the shares will be voted **FOR** the election of the nominees as listed in this Joint Proxy Statement. Shareholders of a Fund who execute proxies may revoke them at any time before they are voted by filing with that Fund a written notice of revocation, by delivering a duly executed proxy bearing a later date, or by attending the Annual Meeting and voting in person. A prior proxy can also be revoked by voting again through the toll-free number or the Internet address listed in the proxy card. Merely attending the Annual Meeting, however, will not revoke any previously submitted proxy.

The Board of each Fund has determined that the use of this Joint Proxy Statement for each Annual Meeting is in the best interest of each Fund and its shareholders in light of the similar matters being considered and voted on by the shareholders.

The following table indicates which shareholders are solicited with respect to each matter:

Matter		**Common Shares**	**Preferred Shares[(1)]**
1(a)(i)	For each Massachusetts Fund (except California Value 2, New Jersey Value and Pennsylvania Value), election of four (4) Class II Board Members by all shareholders.	X	X
1(a)(ii)	For each Massachusetts Fund (except California Value 2, New Jersey Value and Pennsylvania Value), election of two (2) Board Members by holders of Preferred Shares only.		X
1(b)	For California Value, California Value 2, New Jersey Value and Pennsylvania Value, election of four (4) Class II Board Members by all shareholders.	X	N/A

(1) Variable Rate MuniFund Term Preferred Shares (VMTP Shares) for Arizona Quality, California Quality, Michigan Quality and Pennsylvania Quality; Institutional MuniFund Term Preferred Shares (iMTP Shares) for California AMT-Free and Texas Quality; and Variable Rate Demand Preferred Shares (VRDP Shares) for California AMT-Free, California Quality, Massachusetts Quality, New Jersey Quality, Ohio Quality and Pennsylvania Quality are collectively referred to herein as Preferred Shares.

A quorum of shareholders is required to take action at each Annual Meeting. A majority of the shares entitled to vote at each Annual Meeting, represented in person or by proxy, will constitute a quorum of shareholders at that Annual Meeting, except that for the election of the two Board Member nominees by holders of Preferred Shares (for each Fund except California Value, California Value 2, New Jersey Value and Pennsylvania Value), 33 $^{1}/_{3}$% of the Preferred Shares entitled to vote and represented in person or by proxy will constitute a quorum. Votes cast by proxy or in person at each Annual Meeting will be tabulated by the inspectors of election appointed for that Annual Meeting. The inspectors of election will determine whether or not a quorum is present at the Annual Meeting. The inspectors of election will treat abstentions and broker non-votes (i.e., shares held by brokers or nominees, typically in street name, as to which (i) instructions have not been received from the beneficial owners or persons entitled to vote and (ii) the broker or nominee does not have discretionary voting power on a particular matter) as present for purposes of determining a quorum.

VRDP Shares held in street name as to which voting instructions have not been received from the beneficial owners or persons entitled to vote as of one business day before the Annual Meeting, or, if adjourned, one business day before the day to which the Annual Meeting is adjourned, and that would otherwise be treated as broker non-votes may, pursuant to Rule 452 of the New York Stock Exchange (NYSE), be voted by the broker on the proposal in the same proportion as the votes cast by all holders of VRDP Shares as a class who have voted on the proposal or in the same proportion as the votes cast by all holders of VRDP Shares of the Fund who have voted on that item. Rule 452 permits proportionate voting of VRDP Shares with respect to a particular item if, among other things, (i) a minimum of 30% of the VRDP Shares or shares of a series of VRDP Shares outstanding has been voted by the holders of such shares with respect to such item, (ii) less than 10% of the VRDP Shares or shares of a series of VRDP Shares outstanding has been voted by the holders of such shares against such item and (iii) for any proposal as to which holders of Common Shares and Preferred Shares vote as a single class, holders of Common Shares approve the proposal. For the purpose of meeting the 30% test, abstentions will be treated as shares voted and, for the purpose of meeting the 10% test, abstentions will not be treated as shares voted against the item.

Broker-dealers who are not members of the NYSE may be subject to other rules, which may or may not permit them to vote your shares without instruction. We urge you to provide instructions to your broker or nominee so that your votes may be counted.

For each Fund, the affirmative vote of a plurality of the shares present and entitled to vote at the Annual Meeting will be required to elect the Board Members of that Fund. For purposes of determining the approval of the proposal to elect Board Members for each Fund, abstentions and broker non-votes will have no effect.

Those persons who were shareholders of record at the close of business on Monday, September 18, 2017 will be entitled to one vote for each share held and a proportionate fractional vote for each fractional vote held. As of September 18, 2017, the shares of the Funds were issued and outstanding as follows:

Fund	Ticker Symbol[1]	Common Shares	Preferred Shares	
Arizona Quality	NAZ	11,688,587	VMTP Series 2019	883
California AMT-Free	NKX	47,750,333	VRDP Series 2	355
			VRDP Series 3	427
			VRDP Series 4	1,090
			VRDP Series 5	1,044
			VRDP Series 6	1,050
			iMTP Series 2018	7,200
California Quality	NAC	145,105,058	VMTP Series 2019	1,450
			VRDP Series 1	1,362
			VRDP Series 2	910
			VRDP Series 3	498
			VRDP Series 4	1,056
			VRDP Series 5	1,589
			VRDP Series 6	1,581
			VRDP Series 7	980
			VRDP Series 8	1,600

Fund	Ticker Symbol[1]	Common Shares	Preferred Shares	
California Value	NCA	27,910,972	N/A	
California Value 2	NCB	3,295,695	N/A	
Massachusetts Quality	NMT	9,348,158	VRDP Series 1	740
Michigan Quality	NUM	20,810,887	VMTP Series 2019	1,730
New Jersey Quality	NXJ	42,584,678	VRDP Series 1	810
			VRDP Series 2	1,443
			VRDP Series 3	886
New Jersey Value	NJV	1,551,357	N/A	
Ohio Quality	NUO	18,521,954	VRDP Series 1	1,480
Pennsylvania Quality	NQP	37,754,841	VMTP Series 2019	870
			VRDP Series 2	1,125
			VRDP Series 3	1,050
Pennsylvania Value	NPN	1,222,097	N/A	
Texas Quality	NTX	10,027,210	iMTP Series 2018	14,400

(1) The Common Shares of all of the Funds are listed on the NYSE.

1. Election of Board Members

Pursuant to the organizational documents of each Fund, each Board is divided into three classes, Class I, Class II and Class III, to be elected by the holders of the outstanding Common Shares and any outstanding Preferred Shares, voting together as a single class to serve until the third succeeding annual meeting subsequent to their election or thereafter, in each case until their successors have been duly elected and qualified. For Arizona Quality, California AMT-Free, California Quality, Massachusetts Quality, Michigan Quality, New Jersey Quality, Ohio Quality, Pennsylvania Quality and Texas Quality, each a Massachusetts Fund with Preferred Shares outstanding, under normal circumstances, holders of Preferred Shares are entitled to elect two (2) Board Members. The Board Members elected by holders of Preferred Shares will be elected to serve until the next annual meeting or until their successors have been duly elected and qualified.

(a) For each Massachusetts Fund, except California Value 2, New Jersey Value and Pennsylvania Value:

(i) four (4) Board Members are to be elected by holders of Common Shares and Preferred Shares, voting together as a single class. Board Members Kundert, Nelson, Toth and Young have been designated as Class II Board Members and as nominees for Board Members for a term expiring at the annual meeting of shareholders in 2020 or until their successors have been duly elected and qualified. Board Members Cook, Evans, Hunter, Moschner, Schneider, Stockdale, Stone and Wolff are current and continuing Board Members. Board Members Cook, Evans and Moschner have been designated as Class III Board Members for a term expiring at the annual meeting of shareholders in 2018 or until their successors have been duly elected and qualified. Board Members Stockdale, Stone and Wolff have been designated as Class I Board Members and as nominees for Board Members for a term expiring at the annual meeting of shareholders in 2019 or until their successors have been duly elected and qualified.

(ii) two (2) Board Members are to be elected by holders of Preferred Shares, voting separately as a single class. Board Members Hunter and Schneider are nominees for election by holders of Preferred Shares for a term expiring at the next annual meeting or until their successors have been duly elected and qualified.

(b) For California Value, California Value 2, New Jersey Value and Pennsylvania Value: (4) Board Members are to be elected by all shareholders. Board Members Kundert, Nelson, Toth and Young have been designated as Class II Board Members and as nominees for Board Members for a term expiring at the annual meeting of shareholders in 2020 or until their successors have been duly elected and qualified. Board Members Cook, Evans, Hunter, Moschner, Schneider, Stockdale, Stone and Wolff are current and continuing Board Members. Board Members Cook, Evans, Moschner and Schneider have been designated as Class III Board Members for a term expiring at the annual meeting of shareholders in 2018 or until their successors have been duly elected and qualified. Board Members Hunter, Stockdale, Stone and Wolff have been designated as Class I Board Members and as nominees for Board Members for a term expiring at the annual meeting of shareholders in 2019 or until their successors have been duly elected and qualified.

It is the intention of the persons named in the enclosed proxy to vote the shares represented thereby for the election of the nominees listed in the table below unless the proxy is marked otherwise. Each of the nominees has agreed to serve as a Board Member of each Fund if elected. However, should any nominee become unable or unwilling to accept nomination for election, the proxies will be voted for substitute nominees, if any, designated by that Fund s present Board.

Class II Board Members: For Arizona Quality, California AMT-Free, California Value, California Value 2, California Quality, Michigan Quality, New Jersey Quality, New Jersey Value, Ohio Quality, Pennsylvania Quality, Pennsylvania Value and Texas Quality, Board Members Kundert, Nelson and Toth were lasted elected to the Fund s Board at the annual meeting of shareholders held on August 5, 2014. For Massachusetts Quality, Board Members Kundert, Nelson and Toth were lasted elected to the Fund s Board at the annual meeting of shareholders held on September 11, 2014.

Class III Board Members: For each Fund, Board Member Evans was last elected to the Fund s Board at the annual meeting of shareholders held on November 17, 2015.

Class I Board Members: For California Quality, Board Members Stockdale, Stone and Wolff were last elected to the Fund s Board at the annual meeting of shareholders held on September 12, 2016. For Arizona Quality, California AMT-Free, Massachusetts Quality, Michigan Quality, New Jersey Quality, Ohio Quality, Pennsylvania Quality and Texas Quality, Board Members Stockdale, Stone and Wolff were last elected to the Fund s Board at the annual meeting of shareholders held on November 15, 2016. For California Value, California Value 2, New Jersey Value and Pennsylvania Value, Board Members Hunter, Stockdale, Stone and Wolff were last elected to the Fund s Board at the annual meeting of shareholders held on November 15, 2016.

Board Members Elected by Holders of Preferred Shares: For California Quality, Board Members Hunter and Schneider were last elected to the Fund s Board at the annual meeting of shareholders held on September 12, 2016. For Arizona Quality, California AMT-Free,

Massachusetts Quality, Michigan Quality, New Jersey Quality, Ohio Quality, Pennsylvania Quality and Texas Quality, Board Members Hunter and Schneider were lasted elected to the Fund s Board at the annual meeting of shareholders held on November 15, 2016.

Board Member Appointments/Initial Elections: On June 22, 2016, Board Member Cook and Board Member Moschner were appointed as Board Members and designated as Class III Board Members for each Fund, effective July 1, 2016. On May 25, 2017, Board Member Young was appointed as a Board Member and designated as a Class II Board Member for each Fund, effective July 1, 2017.

Other than Board Member Cook, all Board Member nominees and current and continuing Board Members are not interested persons, as defined in the Investment Company Act of 1940, as amended (the 1940 Act), of the Funds or the Adviser, Nuveen Fund Advisors, LLC (Adviser), and have never been an employee or director of Nuveen, the Adviser s parent company, or any affiliate. Accordingly, such Board Members are deemed Independent Board Members.

The Board unanimously recommends that shareholders vote FOR the election of the nominees.

Board Nominees/Board Members

Name, Address and Year of Birth Nominees/Board Members who are not interested persons	Position(s) Held with Fund	Term of Office and Length of Time Served[1] of the Funds	Principal Occupation(s) During Past 5 Years	Number of Portfolios in Fund Complex Overseen by Board Member	Other Directorships Held by Board Member During the Past Five Years
William J. Schneider[2] c/o Nuveen 333 West Wacker Drive Chicago, IL 60606 1944	Chairman of the Board; Board Member	Term: Annual or Class III Board Member until 2018 annual shareholder meeting[3] Length of Service: Since 1996, Chairman of the Board Since July 1, 2013	Chairman of Miller-Valentine Partners Ltd., a real estate investment company; Board Member of WDPR Public Radio Station; formerly, Senior Partner and Chief Operating Officer (retired, 2004) of Miller-Valentine Group; formerly, Director, Dayton Development Coalition; formerly, Board Member, Business Advisory Council, Cleveland Federal Reserve Bank and University of Dayton Business School Advisory Council.	178	None
Jack B. Evans c/o Nuveen 333 West Wacker Drive Chicago, IL 60606 1948	Board Member	Term: Class III Board Member until 2018 annual shareholder meeting Length of Service: Since 1999	President, The Hall-Perrine Foundation, a private philanthropic corporation (since 1996); Public Member Director, (since 2015) American Board of Orthopaedic Surgery; Life Trustee of Coe College and Iowa College Foundation; formerly, Director, Federal Reserve Bank of Chicago; formerly, President and Chief Operating Officer, SCI Financial Group, Inc., a regional financial services firm; formerly, Member and President Pro Tem of the Board of Regents for the State of Iowa University System; formerly, Director, The Gazette Company.	178	Director and Chairman, United Fire Group, a publicly held company; formerly, Director, Alliant Energy.

Name, Address and Year of Birth	Position(s) Held with Fund	Term of Office and Length of Time Served[1]	Principal Occupation(s) During Past 5 Years	Number of Portfolios in Fund Complex Overseen by Board Member	Other Directorships Held by Board Member During the Past Five Years
William C. Hunter c/o Nuveen 333 West Wacker Drive Chicago, IL 60606 1948	Board Member	Term: Annual or Class I Board Member until 2019 annual shareholder meeting[3] Length of Service: Since 2004	Dean Emeritus (since 2012), formerly, Dean (2006-2012), Henry B. Tippie College of Business, University of Iowa; past Director (2005-2015) and past President (2010-2014), Beta Gamma Sigma, Inc., The International Business Honor Society; formerly, Director (1997-2007), Credit Research Center at Georgetown University; formerly, Dean and Distinguished Professor of Finance, School of Business at the University of Connecticut (2003-2006); previously, Senior Vice President and Director of Research at the Federal Reserve Bank of Chicago (1995-2003).	178	Director (since 2009) of Wellmark, Inc; Director (since 2004) of Xerox Corporation.

Name, Address and Year of Birth	Position(s) Held with Fund	Term of Office and Length of Time Served[1]	Principal Occupation(s) During Past 5 Years	Number of Portfolios in Fund Complex Overseen by Board Member	Other Directorships Held by Board Member During the Past Five Years
David J. Kundert c/o Nuveen 333 West Wacker Drive Chicago, IL 60606 1942	Board Member	Term: Class II Board Member until 2017 annual shareholder meeting Length of Service: Since 2005	Formerly, Director, Northwestern Mutual Wealth Management Company (2006-2013); retired (since 2004) as Chairman, JPMorgan Fleming Asset Management; President and CEO, Banc One Investment Advisors Corporation, and President, One Group Mutual Funds; prior thereto, Executive Vice President, Bank One Corporation and Chairman and CEO, Banc One Investment Management Group; Regent Emeritus, Member of Investment Committee, Luther College; Member of the Wisconsin Bar Association; Member of Board of Directors and Chair of Investment Committee, Greater Milwaukee Foundation; Member of the Board of Directors (Milwaukee), College Possible; Member of the Board of Trustees, Milwaukee Repertory Theater.	178	None

Name, Address and Year of Birth	Position(s) Held with Fund	Term of Office and Length of Time Served[1]	Principal Occupation(s) During Past 5 Years	Number of Portfolios in Fund Complex Overseen by Board Member	Other Directorships Held by Board Member During the Past Five Years
Albin F. Moschner c/o Nuveen 333 West Wacker Drive Chicago, Illinois 60606 1952	Board Member	Term: Class III Board Member until 2018 annual shareholder meeting Length of Service: Since 2016	Founder and Chief Executive Officer, Northcroft Partners, LLC, a management consulting firm (since 2012); previously, held positions at Leap Wireless International, Inc., including Consultant (2011-2012), Chief Operating Officer (2008-2011), and Chief Marketing Officer (2004-2008); formerly, President, Verizon Card Services division of Verizon Communications, Inc. (2000-2003); formerly, President, One Point Services at One Point Communications (1999-2000); formerly, Vice Chairman of the Board, Diba, Incorporated (1996-1997); formerly, various executive positions with Zenith Electronics Corporation (1991-1996).	178	Director, USA Technologies, Inc., a provider of solutions and services to facilitate electronic payment transactions (since 2012); formerly, Director, Wintrust Financial Corporation (1996-2016).

Name, Address and Year of Birth	Position(s) Held with Fund	Term of Office and Length of Time Served[1]	Principal Occupation(s) During Past 5 Years	Number of Portfolios in Fund Complex Overseen by Board Member	Other Directorships Held by Board Member During the Past Five Years
John K. Nelson c/o Nuveen 333 West Wacker Drive Chicago, IL 60606 1962	Board Member	Term: Class II Board Member until 2017 annual shareholder meeting Length of Service: Since 2013	Member of Board of Directors of Core12 LLC (since 2008), a private firm which develops branding, marketing and communications strategies for clients; Director of The Curran Center for Catholic American Studies (since 2009) and The President s Council, Fordham University (since 2010); formerly, senior external advisor to the financial services practice of Deloitte Consulting LLP (2012-2014); formerly, Chief Executive Officer of ABN AMRO N.V. North America, and Global Head of its Financial Markets Division (2007-2008); prior senior positions held at ABN AMRO include Corporate Executive Vice President and Head of Global Markets the Americas (2006-2007), CEO of Wholesale Banking North America and Global Head of Foreign Exchange and Futures Markets (2001-2006), and Regional Commercial Treasurer and Senior Vice President Trading North America (1996-2001); formerly, Trustee at St. Edmund Preparatory School in New York City; formerly, Chair of the Board of Trustees of Marian University (2011-2014).	178	None

Name, Address and Year of Birth	Position(s) Held with Fund	Term of Office and Length of Time Served[1]	Principal Occupation(s) During Past 5 Years	Number of Portfolios in Fund Complex Overseen by Board Member	Other Directorships Held by Board Member During the Past Five Years
Judith M. Stockdale c/o Nuveen 333 West Wacker Drive Chicago, IL 60606 1947	Board Member	Term: Class I Board Member until 2019 annual shareholder meeting Length of Service: Since 1997	Board Member of the U.S. Endowment for Forestry and Communities (since 2013); Board Member of the Land Trust Alliance (since 2013); formerly, Executive Director (1994-2012), Gaylord and Dorothy Donnelley Foundation; prior thereto, Executive Director, Great Lakes Protection Fund (1990-1994).	178	None
Carole E. Stone c/o Nuveen 333 West Wacker Drive Chicago, IL 60606 1947	Board Member	Term: Class I Board Member until 2019 annual shareholder meeting Length of Service: Since 2007	Director, Chicago Board Options Exchange, Inc. (since 2006); Director, C2 Options Exchange, Incorporated (since 2009); formerly, Commissioner, New York State Commission on Public Authority Reform (2005-2010).	178	Director, CBOE Holdings, Inc. (since 2010).

Name, Address and Year of Birth	Position(s) Held with Fund	Term of Office and Length of Time Served[1]	Principal Occupation(s) During Past 5 Years	Number of Portfolios in Fund Complex Overseen by Board Member	Other Directorships Held by Board Member During the Past Five Years
Terence J. Toth[4] c/o Nuveen 333 West Wacker Drive Chicago, IL 60606 1959	Board Member	Term: Class II Board Member until 2017 annual shareholder meeting Length of Service: Since 2008	Co-Founding Partner, Promus Capital (since 2008); Director, Fulcrum IT Service LLC (since 2010), Quality Control Corporation (since 2012); formerly Director, LogicMark LLC (2012-2016); formerly, Director, Legal & General Investment Management America, Inc. (2008-2013); formerly, CEO and President, Northern Trust Global Investments (2004-2007); Executive Vice President, Quantitative Management & Securities Lending (2000-2004); prior thereto, various positions with Northern Trust Company (since 1994); Member, Chicago Fellowship Board (since 2005), Catalyst Schools of Chicago Board (since 2008) and Mather Foundation Board (since 2012) and Chair of its Investment Committee; formerly, Member, Northern Trust Mutual Funds Board (2005-2007), Northern Trust Global Investments Board (2004-2007), Northern Trust Japan Board (2004-2007), Northern Trust Securities Inc. Board (2003-2007) and Northern Trust Hong Kong Board (1997-2004).	178	None

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Name, Address and Year of Birth	Position(s) Held with Fund	Term of Office and Length of Time Served[1]	Principal Occupation(s) During Past 5 Years	Number of Portfolios in Fund Complex Overseen by Board Member	Other Directorships Held by Board Member During the Past Five Years
Margaret L. Wolff c/o Nuveen 333 West Wacker Drive Chicago, Illinois 60606 1955	Board Member	Term: Class I Board Member until 2019 annual shareholder meeting Length of Service: Since 2016	Formerly, Of Counsel, Skadden, Arps, Slate, Meagher & Flom LLP (Mergers & Acquisitions Group) (2005-2014); Member of the Board of Trustees of New York-Presbyterian Hospital (since 2005); Member (since 2004) and Chair (since 2015) of the Board of Trustees of The John A. Hartford Foundation (a philanthropy dedicated to improving the care of older adults); formerly, Member (2005-2015) and Vice Chair (2011-2015) of the Board of Trustees of Mt. Holyoke College.	178	Member of the Board of Directors (since 2013) of Travelers Insurance Company of Canada and The Dominion of Canada General Insurance Company (each, a part of Travelers Canada, the Canadian operation of The Travelers Companies, Inc.).
Robert L. Young[5] c/o Nuveen 333 West Wacker Drive Chicago, IL 60606 1963	Board Member	Term: Class II Board Member until 2017 annual shareholder meeting Length of Service: Since July 1, 2017	Formerly, Chief Operating Officer and Director, J.P. Morgan Investment Management Inc. (2010-2016); formerly, President and Principal Executive Officer (2013-2016), and Senior Vice President and Chief Operating Officer (2005-2010) of J.P. Morgan Funds; formerly, Director and various officer positions for J.P. Morgan Investment Management Inc. (formerly, JPMorgan Funds Management, Inc. and formerly, One Group Administrative Services) and JPMorgan Distribution Services, Inc. (formerly, One Group Dealer Services, Inc.) (1999-2017).	176	None

Name, Address and Year of Birth	Position(s) Held with Fund	Term of Office and Length of Time Served[1]	Principal Occupation(s) During Past 5 Years	Number of Portfolios in Fund Complex Overseen by Board Member	Other Directorships Held by Board Member During the Past Five Years
Nominees/Board Members who are interested persons of the Funds					
Margo L. Cook[6] c/o Nuveen 333 West Wacker Drive Chicago, IL 60606 1964	Board Member	Term: Class III Board Member until 2018 annual shareholder meeting Length of Service: Since 2016	President (since 2017), formerly, Co-Chief Executive Officer and Co-President (2016-2017), formerly, Senior Executive Vice President of Nuveen Investments, Inc.; Executive Vice President (since February 2017) of Nuveen LLC; President (since August 2017), formerly, Co-President (October 2016-August 2017), formerly, Senior Executive Vice President (2015-2016) of Nuveen Fund Advisors, LLC (Executive Vice President since 2011); President, Global Products and Solutions (since July 2017), and Co-Chief Executive Officer (since 2015), formerly, Co-President (2015-2017) and Executive Vice President (2013 2015), of Nuveen Securities, LLC; President (since 2017), Nuveen Alternative Investments, LLC; Chartered Financial Analyst.	178	None

(1) Length of Time Served indicates the year in which the individual became a Board Member of a fund in the Nuveen fund complex.
(2) Mr. Schneider is one of several owners and managing members in two limited liability companies and a general partner and one member of the governing body of a general partnership, each engaged in real estate ownership activities. In connection with their ordinary course of investment activities, court appointed receivers have been named for certain individual properties owned by such entities. The individual properties for which a receiver has been appointed represent an immaterial portion of the portfolio assets owned by these entities.
(3) For California Value, California Value 2, New Jersey Value and Pennsylvania Value, Board Member Hunter serves as a Class I Board Member and Board Member Schneider serves as a Class III Board Member.
(4) Mr. Toth serves as a director on the Board of Directors of the Mather Foundation (the Foundation) and is a member of its investment committee. The Foundation is the parent of the Mather LifeWays organization, a non-profit charitable organization. Prior to Mr. Toth joining the Board of the Foundation, the Foundation selected Gresham Investment Management (Gresham), an affiliate of the Adviser, to manage a portion of the Foundation s investment portfolio, and pursuant to this selection, the Foundation has invested that portion of its investment portfolio in a private commodity pool managed by Gresham.
(5) Mr. Young is a Board Member of each of the Nuveen Funds except Nuveen Diversified Dividend and Income Fund and Nuveen Real Estate Income Fund.
(6) Board Member Cook is an interested person as defined in the 1940 Act by reason of her position with Nuveen, LLC and/or certain of its subsidiaries.

Board Member Investments in the Funds

In order to create an appropriate identity of interests between Board Members and shareholders, the Boards of Directors/Trustees of the Nuveen funds have adopted a governance principle pursuant to which each Board Member is expected to invest, either directly or on a deferred basis, at least the equivalent of one year of compensation in the funds in the Nuveen fund complex.

The dollar range of equity securities beneficially owned by each Board Member in each Fund and all Nuveen funds overseen by the Board Member as of July 31, 2017 is set forth in Appendix A. The number of shares of each Fund beneficially owned by each Board Member and by the Board Members and officers of the Funds as a group as of July 31, 2017 is also set forth in Appendix A. On July 31, 2017, Board Members and executive officers as a group beneficially owned approximately 1.3 million shares of all funds managed by the Adviser (including shares held by the Board Members through the Deferred Compensation Plan for Independent Board Members and by executive officers in Nuveen s 401(k)/profit sharing plan). As of September 18, 2017, each Board Member s individual beneficial shareholdings of each Fund constituted less than 1% of the outstanding shares of the Fund. As of September 18, 2017, the Board Members and executive officers as a group beneficially owned less than 1% of the outstanding shares of each Fund. As of September 18, 2017, no shareholder beneficially owned more than 5% of any class of shares of any Fund, except as provided in Appendix B.

Compensation

Prior to January 1, 2017, each Independent Board Member received a $170,000 annual retainer plus: (a) a fee of $5,550 per day for attendance in person or by telephone at regularly scheduled meetings of the Board; (b) a fee of $3,000 per meeting for attendance in person or by telephone at special, non-regularly scheduled meetings of the Board where in-person attendance was required and $2,000 per meeting for attendance by telephone or in person at such meetings where in-person attendance was not required; (c) a fee of $2,500 per meeting for attendance in person or by telephone at Audit Committee meetings where in-person attendance was required and $2,000 per meeting for attendance by telephone or in person at such meetings where in-person attendance was not required; (d) a fee of $2,500 per meeting for attendance in person or by telephone at Compliance, Risk Management and Regulatory Oversight Committee meetings where in-person attendance was required and $2,000 per meeting for attendance by telephone or in person at such meetings where in-person attendance was not required; (e) a fee of $1,000 per meeting for attendance in person or by telephone at Dividend Committee meetings; (f) a fee of $2,500 per meeting for attendance in person or by telephone at Closed-End Funds Committee meetings where in-person attendance was required and $2,000 per meeting for attendance by telephone or in person at such meetings where in-person attendance was not required, provided that no fees were received for meetings held on days on which regularly scheduled Board meetings were held; and (g) a fee of $500 per meeting for attendance in person or by telephone at all other committee meetings ($1,000 for shareholder meetings) where in-person attendance was required and $250 per meeting for attendance by telephone or in person at such committee meetings (excluding shareholder meetings) where in-person attendance was not required, and $100 per meeting when the Executive Committee acted as pricing committee for IPOs, plus, in each case, expenses incurred in attending such meetings, provided that no fees were received for meetings

held on days on which regularly scheduled Board meetings were held. In addition to the payments described above, the Chairman of the Board received $80,000, the chairpersons of the Audit Committee, the Dividend Committee, the Compliance, Risk Management and Regulatory Oversight Committee, the Closed-End Funds Committee and the Nominating and Governance Committee received $12,500 each as additional annual retainers. Independent Board Members also received a fee of $3,000 per day for site visits to entities that provided services to the Nuveen funds on days on which no Board meeting was held. When ad hoc committees were organized, the Nominating and Governance Committee would at the time of formation determine compensation to be paid to the members of such committee; however, in general, such fees were $1,000 per meeting for attendance in person or by telephone at ad hoc committee meetings where in-person attendance was required and $500 per meeting for attendance by telephone or in person at such meetings where in-person attendance was not required. The annual retainer, fees and expenses were allocated among the Nuveen funds on the basis of relative net assets, although management may, in its discretion, have established a minimum amount to be allocated to each fund.

Effective January 1, 2017, each Independent Board Member receives a $177,500 annual retainer plus (a) a fee of $5,750 per day for attendance in person or by telephone at regularly scheduled meetings of the Board; (b) a fee of $3,000 per meeting for attendance in person or by telephone at special, non-regularly scheduled Board Meetings where in-person attendance is required and $2,000 per meeting for attendance by telephone or in person at such meetings where in-person attendance is not required; (c) a fee of $2,500 per meeting for attendance in person or by telephone at Audit Committee meetings where in-person attendance is required and $2,000 per meeting for attendance by telephone or in person at such meetings where in-person attendance is not required; (d) a fee of $2,500 per meeting for attendance in person or by telephone at Compliance, Risk Management and Regulatory Oversight Committee meetings where in-person attendance is required and $2,000 per meeting for attendance by telephone or in person at such meetings where in-person attendance is not required; (e) a fee of $1,000 per meeting for attendance in person or by telephone at Dividend Committee meetings; (f) a fee of $500 per meeting for attendance in person or by telephone at all other committee meetings ($1,000 for shareholder meetings) where in person attendance is required and $250 per meeting for attendance by telephone or in person at such committee meetings (excluding shareholder meetings) where in-person attendance is not required and $100 per meeting when the Executive Committee acts as pricing committee for IPOs, plus, in each case, expenses incurred in attending such meetings, provided that no fees are received for meetings held on days on which regularly scheduled Board meetings are held and (g) a fee of $2,500 per meeting for attendance in person or by telephone at Closed-End Funds Committee meetings where in-person attendance is required and $2,000 per meeting for attendance by telephone or in person at such meetings where in-person attendance is not required; provided that no fees are received for meetings held on days on which regularly scheduled Board meetings are held. In addition to the payments described above, the Chairman of the Board receives $80,000, the chairpersons of the Audit Committee, the Dividend Committee, the Compliance, Risk Management and Regulatory Oversight Committee, the Closed-End Funds Committee and the Nominating and Governance Committee receive $12,500 each as additional retainers. Independent Board Members also receive a fee of $3,000 per day for site visits to entities that provide services to the Nuveen funds on days on which no Board meeting is held. When ad hoc committees are organized, the Nominating and Governance Committee will at the time of formation determine compensation to be paid to the members of such committee; however, in

general, such fees will be $1,000 per meeting for attendance in person or by telephone at ad hoc committee meetings where in-person attendance is required and $500 per meeting for attendance by telephone or in person at such meetings where in-person attendance is not required. The annual retainer, fees and expenses are allocated among the Nuveen funds on the basis of relative net assets, although management may, in its discretion, establish a minimum amount to be allocated to each fund. In certain instances fees and expenses will be allocated only to those Nuveen funds that are discussed at a given meeting.

The Funds do not have retirement or pension plans. Certain Nuveen funds (the Participating Funds) participate in a deferred compensation plan (the Deferred Compensation Plan) that permits an Independent Board Member to elect to defer receipt of all or a portion of his or her compensation as an Independent Board Member. The deferred compensation of a participating Independent Board Member is credited to a book reserve account of the Participating Fund when the compensation would otherwise have been paid to such Independent Board Member. The value of an Independent Board Member s deferral account at any time is equal to the value that the account would have had if contributions to the account had been invested and reinvested in shares of one or more of the eligible Nuveen funds. At the time for commencing distributions from an Independent Board Member s deferral account, the Independent Board Member may elect to receive distributions in a lump sum or over a period of five years. The Participating Fund will not be liable for any other fund s obligations to make distributions under the Deferred Compensation Plan.

The Funds have no employees. The officers of the Funds and the Board Members of each Fund who are not Independent Board Members serve without any compensation from the Funds.

The table below shows, for each Independent Board Member, the aggregate compensation paid by each Fund to the Independent Board Member/nominee for its last fiscal year.

	Aggregate Compensation from the Funds(*)										
Fund Name	**Jack B. Evans**	**William C. Hunter**	**David J. Kundert**	**Albin F. Moschner[1]**	**John K. Nelson**	**William J. Schneider**	**Judith M. Stockdale**	**Carole E. Stone**	**Terence J. Toth**	**Margaret L. Wolff**	**Robert L. Young[2]**
Arizona Quality	$ 734	$ 691	$ 707	$ 309	$ 757	$ 833	$ 682	$ 735	$ 724	$ 586	$
California AMT-Free	3,268	3,082	3,412	1,425	3,381	3,869	3,036	3,590	3,268	2,712	
California Quality	9,527	8,993	9,947	4,066	9,856	11,286	8,858	9,748	9,535	7,890	
California Value	803	757	837	349	831	958	746	821	795	662	
California Value 2	157	147	151	66	162	179	145	156	155	124	
Massachusetts Quality	584	542	563	374	603	768	544	583	676	531	
Michigan Quality	1,411	1,332	1,473	594	1,459	1,658	1,312	1,444	1,396	1,168	
New Jersey Quality	2,815	2,659	2,939	1,178	2,912	3,307	2,620	2,881	2,787	2,327	
New Jersey Value	70	66	67	30	72	80	65	70	69	55	
Ohio Quality	1,318	1,245	1,376	550	1,364	1,549	1,227	1,349	1,305	1,089	
Pennsylvania Quality	2,487	2,351	2,597	1,058	2,573	2,925	2,316	2,546	2,462	2,059	
Pennsylvania Value	55	52	53	23	57	63	51	55	54	44	
Texas Quality	656	618	632	274	677	738	610	655	648	523	
Total Compensation from Nuveen Funds Paid to Board Members/Nominees	**$ 23,884**	**$ 22,537**	**$ 24,754**	**$ 10,297**	**$ 24,702**	**$ 28,212**	**$ 22,211**	**$ 24,631**	**$ 23,875**	**$ 19,769**	**$**

(1) Board Member Moschner was appointed on June 22, 2016 to the Board of Trustees/Directors of the Funds effective July 1, 2016.
(2) Board Member Young was appointed to the Board of Trustees/Directors of the Funds effective July 1, 2017.

(*) Includes deferred fees. Pursuant to the Deferred Compensation Plan with certain Participating Funds, deferred amounts are treated as though an equivalent dollar amount has been invested in shares of one or more Participating Funds. Total deferred fees for the Participating Funds (including the return from the assumed investment in the Participating Funds) payable are:

Fund Name	Jack B. Evans	William C. Hunter	David J. Kundert	Albin F. Moschner[1]	John K. Nelson	William J. Schneider	Judith M. Stockdale	Carole E. Stone	Terence J. Toth	Margaret L. Wolff	Robert L. Young[2]
Arizona Quality	$ 1	$	$	$	$	$ 8	$	$ 3	$	$	$
California AMT-Free	319		3,412			3,869	300	1,953		954	
California Quality	931		9,947			11,286	877	4,979		2,778	
California Value	78		837			958	74	420		233	
California Value 2											
Massachusetts Quality											
Michigan Quality	138		1,473			1,658	130	738		411	
New Jersey Quality	276		2,939			3,307	260	1,472		820	
New Jersey Value											
Ohio Quality	129		1,376			1,549	122	689		384	
Pennsylvania Quality	243		2,597			2,925	229	1,301		725	
Pennsylvania Value											
Texas Quality											

Board Leadership Structure and Risk Oversight

The Board of each Fund oversees the operations and management of the Fund, including the duties performed for the Fund by the Adviser. The Board has adopted a unitary board structure. A unitary board consists of one group of board members who serves on the board of every fund in the complex. In adopting a unitary board structure, the Board Members seek to provide effective governance through establishing a board, the overall composition of which will, as a body, possess the appropriate skills, independence and experience to oversee the Funds business. With this overall framework in mind, when the Board, through its Nominating and Governance Committee discussed below, seeks nominees for the Board, the Board Members consider, not only the candidate s particular background, skills and experience, among other things, but also whether such background, skills and experience enhance the Board s diversity and at the same time complement the Board given its current composition and the mix of skills and experiences of the incumbent Board Members. The Nominating and Governance Committee believes that the Board generally benefits from diversity of background, experience and views among its members, and considers this a factor in evaluating the composition of the Board, but has not adopted any specific policy on diversity or any particular definition of diversity.

The Board believes the unitary board structure enhances good and effective governance, particularly given the nature of the structure of the investment company complex. Funds in the same complex generally are served by the same service providers and personnel and are governed by the same regulatory scheme which raises common issues that must be addressed by the Board Members across the fund complex (such as compliance, valuation, liquidity, brokerage, trade allocation or risk management). The Board believes it is more efficient to have a single board review and oversee common policies and procedures which increases the Board s knowledge and expertise with respect to the many aspects of fund operations that are complex-wide in nature. The unitary structure also enhances the Board s influence and oversight over the Adviser and other service providers.

In an effort to enhance the independence of the Board, the Board also has a Chairman that is an Independent Board Member. The Board recognizes that a chairman can perform an important role in setting the agenda for the Board, establishing the boardroom culture, establishing a point person on behalf of the Board for Fund management, and reinforcing the Board s focus on the long-term interests of shareholders. The Board recognizes that a chairman may be able to better perform these functions without any conflicts of interests arising from a position with Fund management. Accordingly, the Board Members have elected William J. Schneider as the independent Chairman of the Board. Specific responsibilities of the Chairman include: (i) presiding at all meetings of the Board and of the shareholders; (ii) seeing that all orders and resolutions of the Board Members are carried into effect; and (iii) maintaining records of and, whenever necessary, certifying all proceedings of the Board Members and the shareholders.

Although the Board has direct responsibility over various matters (such as advisory contracts, underwriting contracts and Fund performance), the Board also exercises certain of its oversight responsibilities through several committees that it has established and which report back to the full Board. The Board believes that a committee structure is an effective means to permit Board Members to focus on particular operations or issues affecting the Funds, including risk oversight. More specifically, with respect to risk oversight, the Board has delegated

matters relating to valuation and compliance to certain committees (as summarized below) as well as certain aspects of investment risk. In addition, the Board believes that the periodic rotation of Board Members among the different committees allows the Board Members to gain additional and different perspectives of a Fund s operations. The Board has established six standing committees: the Executive Committee, the Dividend Committee, the Audit Committee, the Compliance, Risk Management and Regulatory Oversight Committee, the Nominating and Governance Committee and the Closed-End Funds Committee. The Board may also from time to time create ad hoc committees to focus on particular issues as the need arises. The membership and functions of the standing committees are summarized below.

Executive Committee. The Executive Committee, which meets between regular meetings of the Board, is authorized to exercise all of the powers of the Board. The members of the Executive Committee are William J. Schneider, Chair, Margot L. Cook and Terence J. Toth. The number of Executive Committee meetings of each Fund held during its last fiscal year is shown in Appendix C.

Dividend Committee. The Dividend Committee is authorized to declare distributions on each Fund s shares including, but not limited to, regular and special dividends, capital gains and ordinary income distributions. The members of the Dividend Committee are William C. Hunter, Chair, Terence J. Toth and Margaret L. Wolff. The number of Dividend Committee meetings of each Fund held during its last fiscal year is shown in Appendix C.

Audit Committee. The Board has an Audit Committee, in accordance with Section 3(a)(58)(A) of the Securities Exchange Act of 1934 (1934 Act), that is composed of Independent Board Members who are also independent as that term is defined in the listing standards pertaining to closed-end funds of the NYSE. The Audit Committee assists the Board in: the oversight and monitoring of the accounting and reporting policies, processes and practices of the Funds, and the audits of the financial statements of the Funds; the quality and integrity of the financial statements of the Funds; the Funds compliance with legal and regulatory requirements relating to the Funds financial statements; the independent auditors qualifications, performance and independence; and the pricing procedures of the Funds and the internal valuation group of Nuveen. It is the responsibility of the Audit Committee to select, evaluate and replace any independent auditors (subject only to Board and, if applicable, shareholder ratification) and to determine their compensation. The Audit Committee is also responsible for, among other things, overseeing the valuation of securities comprising the Funds portfolios. Subject to the Board s general supervision of such actions, the Audit Committee addresses any valuation issues, oversees the Funds pricing procedures and actions taken by Nuveen s internal valuation group which provides regular reports to the Audit Committee, reviews any issues relating to the valuation of the Funds securities brought to its attention, and considers the risks to the Funds in assessing the possible resolutions of these matters. The Audit Committee may also consider any financial risk exposures for the Funds in conjunction with performing its functions.

To fulfill its oversight duties, the Audit Committee receives annual and semi-annual reports and has regular meetings with the external auditors for the Funds and the internal audit group at Nuveen. The Audit Committee also may review, in a general manner, the processes the Board or other Board committees have in place with respect to risk assessment and risk management as well as compliance with legal and regulatory matters relating to the Funds financial statements. The Audit Committee operates under a written Audit Committee Charter (the Charter)

adopted and approved by the Board, which Charter conforms to the listing standards of the NYSE. Members of the Audit Committee are independent (as set forth in the Charter) and free of any relationship that, in the opinion of the Board Members, would interfere with their exercise of independent judgment as an Audit Committee member. The members of the Audit Committee are Jack B. Evans, Chair, David J. Kundert, John K. Nelson, Carole E. Stone and Terence J. Toth, each of whom is an Independent Board Member of the Funds. A copy of the Charter is available at www.nuveen.com/CEF/Shareholder/FundGovernance. aspx. The number of Audit Committee meetings of each Fund held during its last fiscal year is shown in Appendix C.

Compliance, Risk Management and Regulatory Oversight Committee. The Compliance, Risk Management and Regulatory Oversight Committee (the Compliance Committee) is responsible for the oversight of compliance issues, risk management and other regulatory matters affecting the Funds that are not otherwise under or within the jurisdiction of the other committees. The Board has adopted and periodically reviews policies and procedures designed to address the Funds compliance and risk matters. As part of its duties, the Compliance Committee: reviews the policies and procedures relating to compliance matters and recommends modifications thereto as necessary or appropriate to the full Board; develops new policies and procedures as new regulatory matters affecting the Funds arise from time to time; evaluates or considers any comments or reports from examinations from regulatory authorities and responses thereto; and performs any special reviews, investigations or other oversight responsibilities relating to risk management, compliance and/or regulatory matters as requested by the Board.

In addition, the Compliance Committee is responsible for risk oversight, including, but not limited to, the oversight of risks related to investments and operations. Such risks include, among other things, exposures to: particular issuers, market sectors, or types of securities; risks related to product structure elements, such as leverage; and techniques that may be used to address those risks, such as hedging and swaps. In assessing issues brought to the Compliance Committee s attention or in reviewing a particular policy, procedure, investment technique or strategy, the Compliance Committee evaluates the risks to the Funds in adopting a particular approach or resolution compared to the anticipated benefits to the Funds and their shareholders. In fulfilling its obligations, the Compliance Committee meets on a quarterly basis, and at least once a year in person. The Compliance Committee receives written and oral reports from the Funds Chief Compliance Officer (CCO) and meets privately with the CCO at each of its quarterly meetings. The CCO also provides an annual report to the full Board regarding the operations of the Funds and other service providers compliance programs as well as any recommendations for modifications thereto. The Compliance Committee also receives reports from the investment services group of Nuveen regarding various investment risks. Notwithstanding the foregoing, the full Board also participates in discussions with management regarding certain matters relating to investment risk, such as the use of leverage and hedging. The investment services group therefore also reports to the full Board at its quarterly meetings regarding, among other things, Fund performance and the various drivers of such performance. Accordingly, the Board directly and/or in conjunction with the Compliance Committee oversees matters relating to investment risks. Matters not addressed at the committee level are addressed directly by the full Board. The Compliance Committee operates under a written charter adopted and approved by the Board. The members of the Compliance Committee are John K. Nelson, Chair, William C. Hunter, Albin F. Moschner, Judith M. Stockdale,

Margaret L. Wolff and Robert L. Young. The number of Compliance Committee meetings of each Fund held during its last fiscal year is shown in Appendix C.

Nominating and Governance Committee. The Nominating and Governance Committee is responsible for seeking, identifying and recommending to the Board qualified candidates for election or appointment to the Board. In addition, the Nominating and Governance Committee oversees matters of corporate governance, including the evaluation of Board performance and processes, the assignment and rotation of committee members, and the establishment of corporate governance guidelines and procedures, to the extent necessary or desirable, and matters related thereto. Although the unitary and committee structure has been developed over the years and the Nominating and Governance Committee believes the structure has provided efficient and effective governance, the Nominating and Governance Committee recognizes that, as demands on the Board evolve over time (such as through an increase in the number of funds overseen or an increase in the complexity of the issues raised), the Nominating and Governance Committee must continue to evaluate the Board and committee structures and their processes and modify the foregoing as may be necessary or appropriate to continue to provide effective governance. Accordingly, the Nominating and Governance Committee has a separate meeting each year to, among other things, review the Board and committee structures, their performance and functions, and recommend any modifications thereto or alternative structures or processes that would enhance the Board s governance over the Funds business.

In addition, the Nominating and Governance Committee, among other things: makes recommendations concerning the continuing education of Board Members; monitors performance of legal counsel and other service providers; establishes and monitors a process by which security holders are able to communicate in writing with Board Members; and periodically reviews and makes recommendations about any appropriate changes to Board Member compensation. In the event of a vacancy on the Board, the Nominating and Governance Committee receives suggestions from various sources, including shareholders, as to suitable candidates. Suggestions should be sent in writing to Lorna Ferguson, Manager of Fund Board Relations, Nuveen, 333 West Wacker Drive, Chicago, Illinois 60606. The Nominating and Governance Committee sets appropriate standards and requirements for nominations for new Board Members and each nominee is evaluated using the same standards. However, the Nominating and Governance Committee reserves the right to interview any and all candidates and to make the final selection of any new Board Members. In considering a candidate s qualifications, each candidate must meet certain basic requirements, including relevant skills and experience, time availability (including the time requirements for due diligence site visits to internal and external sub-advisers and service providers) and, if qualifying as an Independent Board Member candidate, independence from the Adviser, sub-advisers, underwriters or other service providers, including any affiliates of these entities. These skill and experience requirements may vary depending on the current composition of the Board, since the goal is to ensure an appropriate range of skills, diversity and experience, in the aggregate. Accordingly, the particular factors considered and weight given to these factors will depend on the composition of the Board and the skills and backgrounds of the incumbent Board Members at the time of consideration of the nominees. All candidates, however, must meet high expectations of personal integrity, independence, governance experience and professional competence. All candidates must be willing to be critical within the Board and with management and yet maintain a collegial and collaborative manner toward other Board Members. The Nominating and Governance Committee operates under a written charter adopted and approved by the Board, a copy of which is

available on the Funds website at www.nuveen.com/CEF/Shareholder/FundGovernance.aspx, and is composed entirely of Independent Board Members, who are also independent as defined by NYSE listing standards. The members of the Nominating and Governance Committee are William J. Schneider, Chair, Jack B. Evans, William C. Hunter, David J. Kundert, Albin F. Moschner, John K. Nelson, Judith M. Stockdale, Carole E. Stone, Terence J. Toth, Margaret L. Wolff and Robert L. Young. The number of Nominating and Governance Committee meetings of each Fund held during its last fiscal year is shown in Appendix C.

Closed-End Funds Committee. The Closed-End Funds Committee is responsible for assisting the Board in the oversight and monitoring of the Nuveen funds that are registered as closed-end management investment companies (Closed-End Funds). The Closed-End Funds Committee may review and evaluate matters related to the formation and the initial presentation to the Board of any new Closed-End Fund and may review and evaluate any matters relating to any existing Closed-End Fund. The Closed-End Funds Committee operates under a written charter adopted and approved by the Board. The members of the Closed-End Funds Committee are Carole E. Stone, Chair, Jack B. Evans, Albin F. Moschner, John K. Nelson, William J. Schneider, Terence J. Toth and Robert L. Young. The number of Closed-End Funds Committee meetings of each Fund held during its last fiscal year is shown in Appendix C.

Board Member Attendance. The number of regular quarterly meetings and special meetings held by the Board of each Fund during the Fund s last fiscal year is shown in Appendix C. During the last fiscal year, each Board Member attended 75% or more of each Fund s Board meetings and the committee meetings (if a member thereof) held during the period for which such Board Member was a Board Member. The policy of the Board relating to attendance by Board Members at annual meetings of shareholders of the Funds and the number of Board Members who attended the last annual meeting of shareholders of each Fund is posted on the Funds website at www.nuveen.com/CEF/Shareholder/FundGovernance.aspx.

Board Diversification and Board Member Qualifications. In determining that a particular Board Member was qualified to serve on the Board, the Board considered each Board Member s background, skills, experience and other attributes in light of the composition of the Board with no particular factor controlling. The Board believes that Board Members need to have the ability to critically review, evaluate, question and discuss information provided to them, and to interact effectively with Fund management, service providers and counsel, in order to exercise effective business judgment in the performance of their duties, and the Board believes each Board Member satisfies this standard. An effective Board Member may achieve this ability through his or her educational background; business, professional training or practice; public service or academic positions; experience from service as a board member or executive of investment funds, public companies or significant private or not-for-profit entities or other organizations; and/or other life experiences. Accordingly, set forth below is a summary of the experiences, qualifications, attributes, and skills that led to the conclusion, as of the date of this document, that each Board Member should serve in that capacity. References to the experiences, qualifications, attributes and skills of Board Members are pursuant to requirements of the Securities and Exchange Commission (SEC), do not constitute holding out the Board or any Board Member as having any special expertise or experience and shall not impose any greater responsibility or liability on any such person or on the Board by reason thereof.

Margo L. Cook

Ms. Cook, an interested Board Member of the Funds, is President of Nuveen Investments since April 2017, prior to which she had been Co-Chief Executive Officer and Co-President from 2016-2017, prior to which she had been Senior Executive Vice President since July 2015. Ms. Cook is a member of the Senior Leadership Team and Executive Vice President (since February 2017) of Nuveen, LLC, as well as co-chair of Nuveen Investments Management and Operating Committees. She is President (since August 2017), formerly, Co-President (October 2016-August 2017), formerly Senior Executive Vice President (2015-2016) of Nuveen Fund Advisors, LLC and President, Global Products and Solutions (since July 2017) and Co-Chief Executive Officer (since 2015), of Nuveen Securities, LLC. Since joining in 2008, she has held various leadership roles at Nuveen Investments, including as Head of Investment Services, responsible for investment-related efforts across the firm. Ms. Cook also serves on the Board of Nuveen Global Fund Investors. Before joining Nuveen Investments, she was the Global Head of Bear Stearns Asset Management s institutional business. Prior to that, she spent over 20 years within BNY Mellon s asset management business, including as Chief Investment Officer for Institutional Asset Management and Head of Institutional Fixed Income. Ms. Cook earned her Bachelor of Science degree in finance from the University of Rhode Island, her Executive MBA from Columbia University, and is a Chartered Financial Analyst. She serves as Vice Chair of the University of Rhode Island Foundation Board of Trustees, and Chair of the All Stars Project of Chicago Board. Ms. Cook joined the Board in 2016.

Jack B. Evans

President of The Hall-Perrine Foundation, a private philanthropic corporation, since 1996, Mr. Evans was formerly President and Chief Operating Officer of the SCI Financial Group, Inc., a regional financial services firm headquartered in Cedar Rapids, Iowa. Formerly, he was a member of the Board of the Federal Reserve Bank of Chicago, a Director of Alliant Energy and a Member and President Pro Tem of the Board of Regents for the State of Iowa University System. Mr. Evans is Chairman of the Board of United Fire Group, sits on the Board of The American Board of Orthopaedic Surgery as a Public Member Director (since 2015) and is a Life Trustee of Coe College. He has a Bachelor of Arts degree from Coe College and an MBA from the University of Iowa. Mr. Evans joined the Board in 1999.

William C. Hunter

Mr. Hunter became Dean Emeritus of the Henry B. Tippie College of Business at the University of Iowa on June 30, 2012. He was appointed Dean of the College on July 1, 2006. He was previously Dean and Distinguished Professor of Finance at the University of Connecticut School of Business from 2003 to 2006. From 1995 to 2003, he was the Senior Vice President and Director of Research at the Federal Reserve Bank of Chicago. While there he served as the Bank s Chief Economist and was an Associate Economist on the Federal Reserve System s Federal Open Market Committee (FOMC). In addition to serving as a Vice President in charge of financial markets and basic research at the Federal Reserve Bank in Atlanta, he held faculty positions at Emory University, Atlanta University, the University of Georgia and Northwestern University. A past Director of the Credit Research Center at Georgetown University, SS&C Technologies, Inc. (2005) and past President of the Financial Management Association

International, he has consulted with numerous foreign central banks and official agencies in Western, Central and Eastern Europe, Asia, Central America and South America. From 1990 to 1995, he was a U.S. Treasury Advisor to Central and Eastern Europe. He has been a Director of the Xerox Corporation since 2004 and Wellmark, Inc. since 2009. He is a past Director and past President of Beta Gamma Sigma, Inc., The International Business Honor Society. Mr. Hunter joined the Board in 2004.

David J. Kundert

Mr. Kundert retired in 2004 as Chairman of JPMorgan Fleming Asset Management, and as President and CEO of Banc One Investment Advisors Corporation, and as President of One Group Mutual Funds. Prior to the merger between Bank One Corporation and JPMorgan Chase and Co., he was Executive Vice President, Bank One Corporation and, since 1995, the Chairman and CEO, Banc One Investment Management Group. From 1988 to 1992, he was President and CEO of Bank One Wisconsin Trust Company. Mr. Kundert recently retired as a Director of the Northwestern Mutual Wealth Management Company (2006 to 2013). He started his career as an attorney for Northwestern Mutual Life Insurance Company. Mr. Kundert has served on the Board of Governors of the Investment Company Institute and he is currently a member of the Wisconsin Bar Association. He is on the Board of the Greater Milwaukee Foundation and chairs its Investment Committee. He is a Regent Emeritus and a Member of the Investment Committee of Luther College. He is also a Member of the Board of Directors (Milwaukee), College Possible and a Member of the Board of Trustees, Milwaukee Repertory Theater. He received his Bachelor of Arts degree from Luther College and his Juris Doctor from Valparaiso University. Mr. Kundert joined the Board in 2005.

Albin F. Moschner

Mr. Moschner is a consultant in the wireless industry and, in July 2012, founded Northcroft Partners, LLC, a management consulting firm that provides operational, management and governance solutions. Prior to founding Northcroft Partners, LLC, Mr. Moschner held various positions at Leap Wireless International, Inc., a provider of wireless services, where he was a consultant from February 2011 to July 2012, Chief Operating Officer from July 2008 to February 2011, and Chief Marketing Officer from August 2004 to June 2008. Before he joined Leap Wireless International, Inc., Mr. Moschner was President of the Verizon Card Services division of Verizon Communications, Inc. from 2000 to 2003, and President of One Point Services at One Point Communications from 1999 to 2000. Mr. Moschner also served at Zenith Electronics Corporation as Director, President and Chief Executive Officer from 1995 to 1996, and as Director, President and Chief Operating Officer from 1994 to 1995. Since 2012, Mr. Moschner has been a member of the Board of Directors of USA Technologies, Inc. and, from 1996 until 2016, he was a member of the Board of Directors of Wintrust Financial Corporation. In addition, he currently serves on the Advisory Boards of the Kellogg School of Management (since 1995) and the Archdiocese of Chicago Financial Council (since May 2012). Mr. Moschner received a Bachelor of Engineering degree in Electrical Engineering from The City College of New York in 1974 and a Master of Science degree in Electrical Engineering from Syracuse University in 1979. Mr. Moschner joined the Board in 2016.

John K. Nelson

Mr. Nelson currently serves on the Board of Directors of Core12 LLC (since 2008), a private firm which develops branding, marketing, and communications strategies for clients. He was formerly a senior external advisor to the financial services practice of Deloitte Consulting LLP. Mr. Nelson has served in several senior executive positions with ABN AMRO Holdings N.V. and its affiliated entities and predecessors, including LaSalle Bank Corporation from 1996 to 2008. From 2007 to 2008, Mr. Nelson was Chief Executive Officer of ABN AMRO N.V. North America, and Global Head of its Financial Markets Division. He was a member of the Foreign Exchange Committee of the Federal Reserve Bank of the United States, and during his tenure with ABN AMRO, served as the bank s representative on various committees of the Bank of Canada, European Central Bank, and the Bank of England. At Fordham University, he currently serves as a director of The Curran Center for Catholic American Studies and The President s Council. He is also a member of The Economic Club of Chicago and was formerly a member of The Hyde Park Angels and a Trustee at St. Edmund Preparatory School in New York City. He is former chair of the Board of Trustees of Marian University. Mr. Nelson received his MBA from Fordham University. Mr. Nelson joined the Board in 2013.

William J. Schneider

Mr. Schneider, the Board s Independent Chairman, is currently Chairman, formerly Senior Partner and Chief Operating Officer (retired, December 2004) of Miller-Valentine Partners Ltd., a real estate investment company. He is an owner in several other Miller-Valentine entities. He is currently a member of the Board of WDPR Public Radio Station. He was formerly a Director and Past Chair of the Dayton Development Coalition. He was formerly a member of the Community Advisory Board of the National City Bank in Dayton as well as a former member of the Business Advisory Council of the Cleveland Federal Reserve Bank. Mr. Schneider was also a member of the Business Advisory Council for the University of Dayton College of Business. He also served as Chair of the Miami Valley Hospital and as Chair of the Finance Committee of its parent holding company. Mr. Schneider was an independent trustee of the Flagship Funds, a group of municipal open-end funds. Mr. Schneider has a Bachelor of Science in Community Planning from the University of Cincinnati and a Masters of Public Administration from the University of Dayton. Mr. Schneider joined the Board in 1996.

Judith M. Stockdale

Ms. Stockdale retired at the end of 2012 as Executive Director of the Gaylord and Dorothy Donnelley Foundation, a private foundation working in land conservation and artistic vitality in the Chicago region and the Lowcountry of South Carolina. She is currently a board member of the U.S. Endowment for Forestry and Communities (since 2013) and rejoined the board of the Land Trust Alliance in June 2013. Her previous positions include Executive Director of the Great Lakes Protection Fund, Executive Director of Openlands, and Senior Staff Associate at the Chicago Community Trust. She has served on the Advisory Council of the National Zoological Park, the Governor s Science Advisory Council (Illinois) and the Nancy Ryerson Ranney Leadership Grants Program. She has served on the Boards of Brushwood Center and the Donors Forum. Ms. Stockdale, a native of the United Kingdom, has a Bachelor of Science degree

in geography from the University of Durham (UK) and a Master of Forest Science degree from Yale University. Ms. Stockdale joined the Board in 1997.

Carole E. Stone

Ms. Stone retired from the New York State Division of the Budget in 2004, having served as its Director for nearly five years and as Deputy Director from 1995 through 1999. Ms. Stone is currently on the Board of Directors of the Chicago Board Options Exchange, CBOE Holdings, Inc. and C2 Options Exchange, Incorporated. She has also served as the Chair of the New York Racing Association Oversight Board, as Chair of the Public Authorities Control Board, as a Commissioner on the New York State Commission on Public Authority Reform and as a member of the boards of directors of several New York State public authorities. Ms. Stone has a Bachelor of Arts in Business Administration from Skidmore College. Ms. Stone joined the Board in 2006.

Terence J. Toth

Mr. Toth is a Co-Founding Partner of Promus Capital (since 2008). From 2008 to 2013, he served as a Director of Legal & General Investment Management America, Inc. From 2004 to 2007, he was Chief Executive Officer and President of Northern Trust Global Investments, and Executive Vice President of Quantitative Management & Securities Lending from 2000 to 2004. He also formerly served on the Board of the Northern Trust Mutual Funds. He joined Northern Trust in 1994 after serving as Managing Director and Head of Global Securities Lending at Bankers Trust (1986 to 1994) and Head of Government Trading and Cash Collateral Investment at Northern Trust from 1982 to 1986. He currently serves on the Boards of Chicago Fellowship, Fulcrum IT Service LLC (since 2010), Quality Control Corporation (since 2012) and Catalyst Schools of Chicago. He is on the Mather Foundation Board (since 2012) and is Chair of its Investment Committee. Mr. Toth graduated with a Bachelor of Science degree from the University of Illinois, and received his MBA from New York University. In 2005, he graduated from the CEO Perspectives Program at Northwestern University. Mr. Toth joined the Board in 2008.

Margaret L. Wolff

Ms. Wolff retired from Skadden, Arps, Slate, Meagher & Flom LLP in 2014 after more than 30 years of providing client service in the Mergers & Acquisitions Group. During her legal career, Ms. Wolff devoted significant time to advising boards and senior management on U.S. and international corporate, securities, regulatory and strategic matters, including governance, shareholder, fiduciary, operational and management issues. Since 2013, she has been a Board member of Travelers Insurance Company of Canada and The Dominion of Canada General Insurance Company (each of which is a part of Travelers Canada, the Canadian operation of The Travelers Companies, Inc.). Ms. Wolff has been a trustee of New York-Presbyterian Hospital since 2005 and, since 2004, she has served as a trustee of The John A. Hartford Foundation (a philanthropy dedicated to improving the care of older adults) where she currently is the Chair. From 2005 to 2015, she was a trustee of Mt. Holyoke College and served as Vice Chair of the

Board from 2011 to 2015. Ms. Wolff received her Bachelor of Arts from Mt. Holyoke College and her Juris Doctor from Case Western Reserve University School of Law. Ms. Wolff joined the Board in 2016.

Robert L. Young

Mr. Young has more than 30 years of experience in the investment management industry. From 1997 to 2017, he held various positions with J.P. Morgan Investment Management Inc. (J.P. Morgan Investment) and its affiliates (collectively, J.P. Morgan). Most recently, he served as Chief Operating Officer and Director of J.P. Morgan Investment (from 2010 to 2016) and as President and Principal Executive Officer of the J.P. Morgan Funds (from 2013 to 2016). As Chief Operating Officer of J.P. Morgan Investment, Mr. Young led service, administration and business platform support activities for J.P. Morgan s domestic retail mutual fund and institutional commingled and separate account businesses, and co-led these activities for J.P. Morgan s global retail and institutional investment management businesses. As President of the J.P. Morgan Funds, Mr. Young interacted with various service providers to these funds, facilitated the relationship between such funds and their boards, and was directly involved in establishing board agendas, addressing regulatory matters, and establishing policies and procedures. Before joining J.P. Morgan, Mr. Young, a former Certified Public Accountant (CPA), was a Senior Manager (Audit) with Deloitte & Touche LLP (formerly, Touche Ross LLP), where he was employed from 1985 to 1996. During his tenure there, he actively participated in creating, and ultimately led, the firm s midwestern mutual fund practice. Mr. Young holds a Bachelor of Business Administration degree in Accounting from the University of Dayton and, from 2008 to 2011, he served on the Investment Committee of its Board of Trustees.

Board Member Terms. For each Fund, shareholders will be asked to elect Board Members as each Board Member s term expires, and with respect to Board Members elected by holders of Common Shares such Board Members shall be elected for a term expiring at the time of the third succeeding annual meeting of shareholders subsequent to their election or thereafter in each case when their respective successors are duly elected and qualified. These provisions could delay for up to two years the replacement of a majority of the Board.

The Officers

The following table sets forth information with respect to each officer of the Funds. Officers receive no compensation from the Funds. The officers are elected by the Board on an annual basis to serve until successors are elected and qualified.

Name, Address and Year of Birth	Position(s) Held with Fund	Term of Office and Length of Time Served[1]	Principal Occupation(s) During Past 5 Years[2]	Number of Portfolios in Fund Complex Served by Officer
Cedric H. Antosiewicz 333 West Wacker Drive Chicago, Illinois 60606 1962	Chief Administrative Officer	Term: Annual Length of Service: Since 2007	Senior Managing Director (since January 2017), formerly, Managing Director (2004-2017) of Nuveen Securities LLC; Senior Managing Director (since January 2017), formerly, Managing Director (2014-2017) of Nuveen Fund Advisors, LLC.	75
Lorna C. Ferguson 333 West Wacker Drive Chicago, Illinois 60606 1945	Vice President	Term: Annual Length of Service: Since 1998	Senior Managing Director (since February 2017), formerly, Managing Director (2004-2017) of Nuveen.	178
Stephen D. Foy 333 West Wacker Drive Chicago, Illinois 60606 1954	Vice President and Controller	Term: Annual Length of Service: Since 1993	Managing Director (since 2014), formerly, Senior Vice President (2013-2014) and Vice President (2005-2013) of Nuveen Fund Advisors, LLC; Chief Financial Officer of Nuveen Commodities Asset Management, LLC (since 2010); Managing Director (since 2016) of Nuveen Securities, LLC; Certified Public Accountant.	178
Nathaniel T. Jones 333 West Wacker Drive Chicago, Illinois 60606 1979	Vice President and Treasurer	Term: Annual Length of Service: Since 2016	Managing Director (since February 2017), formerly, Senior Vice President (2016-2017), formerly, Vice President (2011-2016) of Nuveen; Chartered Financial Analyst.	178
Walter M. Kelly 333 West Wacker Drive Chicago, Illinois 60606 1970	Chief Compliance Officer and Vice President	Term: Annual Length of Service: Since 2003	Managing Director (since February 2017), formerly, Senior Vice President (2008-2017) of Nuveen.	178
David J. Lamb 333 West Wacker Drive Chicago, Illinois 60606 1963	Vice President	Term: Annual Length of Service: since 2015	Managing Director (since February 2017), formerly, Senior Vice President of Nuveen (2006-2017), Vice President prior to 2006.	75

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Name, Address and Year of Birth	Position(s) Held with Fund	Term of Office and Length of Time Served[1]	Principal Occupation(s) During Past 5 Years[2]	Number of Portfolios in Fund Complex Served by Officer
Tina M. Lazar 333 West Wacker Drive Chicago, Illinois 60606 1961	Vice President	Term: Annual Length of Service: Since 2002	Managing Director (since January 2017), formerly, Senior Vice President (2014-2017) of Nuveen Securities, LLC.	178
Kevin J. McCarthy 333 West Wacker Drive Chicago, Illinois 60606 1966	Vice President and Assistant Secretary	Term: Annual Length of Service: Since 2007	Senior Managing Director (since February 2017) and Secretary and General Counsel (since 2016) of Nuveen Investments, Inc., formerly, Executive Vice President (2016-2017) and Managing Director and Assistant Secretary (2008-2016); Senior Managing Director (since January 2017) and Assistant Secretary (since 2008) of Nuveen Securities, LLC, formerly Executive Vice President (2016-2017) and Managing Director (2008-2016); Senior Managing Director (since February 2017), Secretary (since 2016) and Co-General Counsel (since 2011) of Nuveen Fund Advisors, LLC, formerly, Executive Vice President (2016- 2017), Managing Director (2008-2016) and Assistant Secretary (2007-2016); Senior Managing Director (since February 2017), Secretary (since 2016) and Associate General Counsel (since 2011) of Nuveen Asset Management, LLC, formerly Executive Vice President (2016-2017) and Managing Director and Assistant Secretary (2011- 2016); Senior Managing Director (since February 2017) and Secretary (since 2016) of Nuveen Investments Advisers, LLC, formerly Executive Vice President (2016-2017); Vice President (since 2007) and Secretary (since 2016), formerly, Assistant Secretary, of NWQ Investment Management Company, LLC, Symphony Asset Management LLC, Santa Barbara Asset Management, LLC and Winslow Capital Management, LLC (since 2010).	178

Name, Address and Year of Birth	Position(s) Held with Fund	Term of Office and Length of Time Served[1]	Principal Occupation(s) During Past 5 Years[2]	Number of Portfolios in Fund Complex Served by Officer
Michael A. Perry 333 West Wacker Drive Chicago, Illinois 60606 1967	Vice President	Term: Annual Length of Service: Since 2017	Executive Vice President (since February 2017) of Nuveen Fund Advisors, LLC, previously, Managing Director (October 2016 February 2017); Executive Vice President (since 2017) of Nuveen Securities, LLC, formerly, Managing Director (2015-2017) and of Nuveen Alternative Investments, LLC; formerly, Managing Director (2010-2015) of UBS Securities, LLC.	75
Kathleen L. Prudhomme 901 Marquette Avenue Minneapolis, Minnesota 55402 1953	Vice President and Assistant Secretary	Term: Annual Length of Service: Since 2011	Managing Director and Assistant Secretary of Nuveen Securities, LLC (since 2011); Managing Director, Assistant Secretary and Co-General Counsel (since 2011) of Nuveen Fund Advisors, LLC; Managing Director, Assistant Secretary and Associate General Counsel (since 2011) of Nuveen Asset Management, LLC; formerly, Deputy General Counsel, FAF Advisors, Inc. (2004 2010).	178
Christopher M. Rohrbacher 333 West Wacker Drive Chicago, Illinois 60606 1971	Vice President and Assistant Secretary	Term: Annual Length of Service: Since 2008	Managing Director (since February 2017), formerly, Senior Vice President (October 2016-February 2017) and Assistant Secretary (since October 2016) of Nuveen Fund Advisors, LLC; Managing Director (since January 2017) of Nuveen Securities LLC; Vice President and Assistant Secretary (since 2010) of Nuveen Commodities Asset Management, LLC.	178
William A. Siffermann 333 West Wacker Drive Chicago, Illinois 60606 1975	Vice President	Term: Annual Length of Service: Since 2017	Managing Director (since February 2017), formerly, Senior Vice President (2016-2017) and Vice President (2011-2016) of Nuveen.	178

Name, Address and Year of Birth	Position(s) Held with Fund	Term of Office and Length of Time Served[1]	Principal Occupation(s) During Past 5 Years[2]	Number of Portfolios in Fund Complex Served by Officer
Joel T. Slager 333 West Wacker Drive Chicago, Illinois 60606 1978	Vice President and Assistant Secretary	Term: Annual Length of Service: Since 2013	Fund Tax Director for Nuveen Funds (since 2013); previously, Vice President of Morgan Stanley Investment Management, Inc., Assistant Treasurer of the Morgan Stanley Funds (from 2010 to 2013).	178
Gifford R. Zimmerman 333 West Wacker Drive Chicago, Illinois 60606 1956	Vice President and Secretary	Term: Annual Length of Service: Since 1988	Managing Director (since 2002) and Assistant Secretary of Nuveen Securities, LLC; Managing Director (since 2002), Assistant Secretary (since 1997) and Co-General Counsel (since 2011) of Nuveen Fund Advisors, LLC; Managing Director (since 2004) and Assistant Secretary (since 1994) of Nuveen Investments, Inc.; Managing Director, Assistant Secretary and Associate General Counsel of Nuveen Asset Management, LLC (since 2011); Vice President (since February 2017), formerly, Managing Director (2003-2017) and Assistant Secretary (since 2003) of Symphony Asset Management LLC; Managing Director and Assistant Secretary (since 2002) of Nuveen Investments Advisers, LLC; Vice President and Assistant Secretary of NWQ Investment Management Company, LLC, Santa Barbara Asset Management, LLC (since 2006) and of Winslow Capital Management, LLC (since 2010); Chartered Financial Analyst.	178

(1) Length of Time Served indicates the year the individual became an officer of a fund in the Nuveen fund complex.
(2) Information as of September 30, 2017.

Audit Committee Report

The Audit Committee of each Board is responsible for the oversight and monitoring of (1) the accounting and reporting policies, processes and practices, and the audit of the financial statements, of each Fund, (2) the quality and integrity of the Fund s financial statements and (3) the independent registered public accounting firm s qualifications, performance and independence. In its oversight capacity, the Audit Committee reviews each Fund s annual financial statements with both management and the independent registered public accounting firm and the Audit Committee meets periodically with the independent registered public accounting firm and internal auditors to consider their evaluation of each Fund s financial and internal controls. The Audit Committee also selects, retains, evaluates and may replace each Fund s independent registered public accounting firm. The Audit Committee is currently composed of five Independent Board Members and operates under a written charter adopted and approved by each Board. Each Audit Committee member meets the independence and experience requirements of the NYSE, Section 10A of the 1934 Act and the rules and regulations of the SEC.

The Audit Committee, in discharging its duties, has met with and held discussions with management and each Fund s independent registered public accounting firm. The Audit Committee has also reviewed and discussed the audited financial statements with management. Management has represented to the independent registered public accounting firm that each Fund s financial statements were prepared in accordance with generally accepted accounting principles. The Audit Committee has also discussed with the independent registered public accounting firm the matters required to be discussed by Statement on Auditing Standards (SAS) No. 114 (The Auditor s Communication With Those Charged With Governance), which supersedes SAS No. 61 (Communication with Audit Committees). Each Fund s independent registered public accounting firm provided to the Audit Committee the written disclosure required by Public Company Accounting Oversight Board Rule 3526 (Communications with Audit Committees Concerning Independence), and the Audit Committee discussed with representatives of the independent registered public accounting firm their firm s independence. As provided in the Audit Committee Charter, it is not the Audit Committee s responsibility to determine, and the considerations and discussions referenced above do not ensure, that each Fund s financial statements are complete and accurate and presented in accordance with generally accepted accounting principles.

Based on the Audit Committee s review and discussions with management and the independent registered public accounting firm, the representations of management and the report of the independent registered public accounting firm to the Audit Committee, the Audit Committee has recommended that the audited financial statements be included in each Fund s Annual Report.

The current members of the Audit Committee are:

Jack B. Evans

David J. Kundert

John K. Nelson

Carole E. Stone

Terence J. Toth

Audit and Related Fees. The following tables provide the aggregate fees billed during each Fund s last two fiscal years by each Fund s independent registered public accounting firm for engagements directly related to the operations and financial reporting of each Fund including those relating (i) to each Fund for services provided to the Fund and (ii) to the Adviser and certain entities controlling, controlled by, or under common control with the Adviser that provide ongoing services to each Fund (Adviser Entities).

	Audit Fees[1]		Audit Related Fees[2]				Tax Fees[3]				All Other Fees[4]			
	Fund		Fund		Adviser and Adviser Entities		Fund		Adviser and Adviser Entities		Fund		Adviser and Adviser Entities	
	Fiscal Year Ended 2016	Fiscal Year Ended 2017	Fiscal Year Ended 2016	Fiscal Year Ended 2017	Fiscal Year Ended 2016	Fiscal Year Ended 2017	Fiscal Year Ended 2016	Fiscal Year Ended 2017	Fiscal Year Ended 2016	Fiscal Year Ended 2017	Fiscal Year Ended 2016	Fiscal Year Ended 2017	Fiscal Year Ended 2016	Fiscal Year Ended 2017
Arizona Quality	$ 26,375	$ 27,290	$ 0	$ 0	$ 0	$ 0	$ 0	$ 0	$ 0	$ 0	$ 193	$ 0	$ 0	$ 0
California AMT-Free	26,375	27,290	0	0	0	0	0	0	0	0	808	0	0	0
California Quality	26,375	27,290	0	10,000	0	0	0	0	0	0	2,889	0	0	0
California Value	23,270	24,090	4,000	4,000	0	0	0	0	0	0	50	0	0	0
California Value 2	23,270	24,090	0	0	0	0	0	0	0	0	64	0	0	0
Massachusetts Quality	23,270	23,950	0	0	0	0	0	0	0	0	79	0	0	0
Michigan Quality	26,375	27,290	0	0	0	0	0	0	0	0	172	0	0	0
New Jersey Quality[5]	23,270	24,090	0	0	0	0	0	0	0	0	157	0	0	0
New Jersey Value[5]	21,200	21,960	0	0	0	0	0	0	0	0	21	0	0	0
Ohio Quality	26,375	27,290	0	0	0	0	0	0	0	0	257	0	0	0
Pennsylvania Quality[5]	23,270	24,090	0	0	0	0	0	0	0	0	987	0	0	0
Pennsylvania Value[5]	21,200	21,960	0	0	0	0	0	0	0	0	7	0	0	0
Texas Quality	26,375	27,290	12,000	0	0	0	0	0	0	0	43	0	0	0

(1) Audit Fees are the aggregate fees billed for professional services for the audit of the Fund s annual financial statements and services provided in connection with statutory and regulatory filings or engagements.

(2) Audit Related Fees are the aggregate fees billed for assurance and related services reasonably related to the performance of the audit or review of financial statements that are not reported under Audit Fees. These fees include offerings related to the Fund s Common Shares and leverage.

(3) Tax Fees are the aggregate fees billed for professional services for tax advice, tax compliance, and tax planning. These fees include: all global withholding tax services; excise and state tax reviews; capital gain, tax equalization and taxable basis calculation performed by the principal accountant.

(4) All Other Fees are the aggregate fees billed for products and services other than Audit Fees , Audit-Related Fees and Tax Fees. These fees represent all Agreed-Upon Procedures engagements pertaining to the Fund s use of leverage.

(5) New Jersey Quality, New Jersey Value, Pennsylvania Quality and Pennsylvania Value each changed the fiscal year end from April to February starting in 2017.

	Total Non-Audit Fees Billed to Fund		Total Non-Audit Fees Billed to Advisers and Adviser Entities (Engagements Related Directly to the Operations and Financial Reporting of Fund)		Total Non-Audit Fees Billed to Advisers and Adviser Entities (All Other Engagements)		Total	
	Fiscal Year Ended 2016	Fiscal Year Ended 2017	Fiscal Year Ended 2016	Fiscal Year Ended 2017	Fiscal Year Ended 2016	Fiscal Year Ended 2017	Fiscal Year Ended 2016	Fiscal Year Ended 2017
Arizona Quality	$ 193	$ 0	$ 0	$ 0	$ 0	$ 0	$ 193	$ 0
California AMT-Free	808	0	0	0	0	0	808	0
California Quality	2,889	0	0	0	0	0	2,889	0
California Value	50	0	0	0	0	0	50	0
California Value 2	64	0	0	0	0	0	64	0
Massachusetts Quality	79	0	0	0	0	0	79	0
Michigan Quality	172	0	0	0	0	0	172	0
New Jersey Quality	157	0	0	0	0	0	157	0
New Jersey Value	21	0	0	0	0	0	21	0
Ohio Quality	257	0	0	0	0	0	257	0
Pennsylvania Quality	987	0	0	0	0	0	987	0
Pennsylvania Value	7	0	0	0	0	0	7	0
Texas Quality	43	0	0	0	0	0	43	0

Audit Committee Pre-Approval Policies and Procedures. Generally, the Audit Committee must approve each Fund s independent registered public accounting firm s engagements (i) with the Fund for audit or non-audit services and (ii) with the Adviser and Adviser Entities for non-audit services if the engagement relates directly to the operations and financial reporting of the Fund. Regarding tax and research projects conducted by the independent registered public accounting firm for each Fund and the Adviser and Adviser Entities (with respect to the operations and financial reporting of each Fund), such engagements will be (i) pre-approved by the Audit Committee if they are expected to be for amounts greater than $10,000; (ii) reported to the Audit Committee chairman for his verbal approval prior to engagement if they are expected to be for amounts under $10,000 but greater than $5,000; and (iii) reported to the Audit Committee at the next Audit Committee meeting if they are expected to be for an amount under $5,000.

The Audit Committee has approved in advance all audit services and non-audit services that the independent registered public accounting firm provided to each Fund and to the Adviser and Adviser Entities (with respect to the operations and financial reporting of each Fund). None of the services rendered by the independent registered public accounting firm to each Fund or the Adviser or Adviser Entities were pre-approved by the Audit Committee pursuant to the pre-approval exception under Rule 2.01(c)(7)(i)(C) or Rule 2.01(c)(7)(ii) of Regulation S-X.

Additional Information

Appointment of the Independent Registered Public Accounting Firm

The Board of each Fund has appointed KPMG LLP (KPMG) as independent registered public accounting firm to audit the books and records of the Fund for its current fiscal year. A representative of KPMG will be present at the Annual Meetings to make a statement, if such representative so desires, and to respond to shareholders questions. KPMG has informed each Fund that it has no direct or indirect material financial interest in the Funds, Nuveen, the Adviser or any other investment company sponsored by Nuveen.

Section 16(a) Beneficial Interest Reporting Compliance

Section 30(h) of the 1940 Act and Section 16(a) of the 1934 Act require Board Members and officers, the Adviser, affiliated persons of the Adviser and persons who own more than 10% of a registered class of a Fund s equity securities to file forms reporting their affiliation with that Fund and reports of ownership and changes in ownership of that Fund s shares with the SEC and the NYSE, as applicable. These persons and entities are required by SEC regulation to furnish the Funds with copies of all Section 16(a) forms they file. Based on a review of these forms furnished to each Fund, each Fund believes that its Board Members and officers, Adviser and affiliated persons of the Adviser have complied with all applicable Section 16(a) filing requirements during its last fiscal year. To the knowledge of management of the Funds, no shareholder of a Fund owns more than 10% of a registered class of a Fund s equity securities, except as provided in Appendix B.

Information About the Adviser

The Adviser, located at 333 West Wacker Drive, Chicago, Illinois 60606, serves as investment adviser and manager for each Fund. The Adviser is an indirect subsidiary of Nuveen, LLC, the investment management arm of Teachers Insurance and Annuity Association of America (TIAA). TIAA is a life insurance company founded in 1918 by the Carnegie Foundation for the Advancement of Teaching and is the companion organization of College Retirement Equities Fund.

Shareholder Proposals

To be considered for presentation at the annual meeting of shareholders for the Funds to be held in 2018, shareholder proposals submitted pursuant to Rule 14a-8 of the 1934 Act must be received at the offices of that Fund, 333 West Wacker Drive, Chicago, Illinois 60606, not later than June 11, 2018. A shareholder wishing to provide notice in the manner prescribed by Rule 14a-4(c)(1) of a proposal submitted outside of the process of Rule 14a-8 for the annual meeting must, pursuant to each Fund s By-Laws, submit such written notice to the Fund not later than August 25, 2018 or prior to August 10, 2018. Timely submission of a proposal does not mean that such proposal will be included in a proxy statement.

Shareholder Communications

Fund shareholders who want to communicate with the Board or any individual Board Member should write to the attention of Lorna Ferguson, Manager of Fund Board Relations, Nuveen, 333 West Wacker Drive, Chicago, Illinois 60606. The letter should indicate that you are a Fund shareholder and note the Fund or Funds that you own. If the communication is intended for a specific Board Member and so indicates, it will be sent only to that Board Member. If a communication does not indicate a specific Board Member, it will be sent to the Independent Chairman and the outside counsel to the Independent Board Members for further distribution as deemed appropriate by such persons.

Expenses of Proxy Solicitation

The cost of preparing, printing and mailing the enclosed proxy, accompanying notice and proxy statement and all other costs in connection with the solicitation of proxies will be paid by the Funds pro rata based on the number of shareholder accounts. Additional solicitation may be made by letter or telephone by officers or employees of Nuveen or the Adviser, or by dealers and their representatives. Any additional costs of solicitation will be paid by the Fund that requires additional solicitation.

Fiscal Year

The last fiscal year end for each Fund except Massachusetts Quality was February 28, 2017. The last fiscal year end for Massachusetts Quality was May 31, 2017.

Shareholder Report Delivery

Shareholder reports will be sent to shareholders of record of each Fund following the applicable period. Each Fund will furnish, without charge, a copy of its annual report and/or semi-annual report as available upon request. Such written or oral requests should be directed to such Fund at 333 West Wacker Drive, Chicago, Illinois 60606 or by calling 1-800-257-8787.

Important Notice Regarding the Availability of Proxy Materials for the Shareholder Meeting To Be Held on November 14, 2017:

Each Fund s proxy statement is available at http://www.nuveenproxy.com/Closed-End-Fund-Proxy-Information/. For more information, shareholders may also contact the applicable Fund at the address and phone number set forth above.

Please note that only one annual report, semi-annual report or proxy statement may be delivered to two or more shareholders of a Fund who share an address, unless the Fund has received instructions to the contrary. To request a separate copy of an annual report, semi-annual report or proxy statement, or for instructions as to how to request a separate copy of such documents or as to how to request a single copy if multiple copies of such documents are received, shareholders should contact the applicable Fund at the address and phone number set forth above.

General

Management does not intend to present and does not have reason to believe that any other items of business will be presented at the Annual Meetings. However, if other matters are properly presented to the Annual Meetings for a vote, the proxies will be voted by the persons acting under the proxies upon such matters in accordance with their judgment of the best interests of the Fund.

A list of shareholders entitled to be present and to vote at each Annual Meeting will be available at the offices of the Funds, 333 West Wacker Drive, Chicago, Illinois, for inspection by any shareholder during regular business hours beginning ten days prior to the date of the Annual Meeting.

Failure of a quorum to be present at any Annual Meeting will necessitate adjournment and will subject that Fund to additional expense. The persons named in the enclosed proxy may also move for an adjournment of any Annual Meeting to permit further solicitation of proxies with respect to the proposal if they determine that adjournment and further solicitation is reasonable and in the best interests of the Funds. Under each Fund s By-Laws, an adjournment of a meeting with respect to a matter requires the affirmative vote of a majority of the shares entitled to vote on the matter present in person or represented by proxy at the meeting.

IF YOU CANNOT BE PRESENT AT THE MEETING, YOU ARE REQUESTED TO FILL IN, SIGN AND RETURN THE ENCLOSED PROXY PROMPTLY. NO POSTAGE IS REQUIRED IF MAILED IN THE UNITED STATES.

Gifford R. Zimmerman

Vice President and Secretary

October 4, 2017

APPENDIX A

Beneficial Ownership

The following table lists the dollar range of equity securities beneficially owned by each Board Member nominee in each Fund and in all Nuveen funds overseen by the Board Member/nominee as of July 31, 2017. The information as to beneficial ownership is based on statements furnished by each Board Member/nominee.

	Dollar Range of Equity Securities							
Board Member/Nominees	**Arizona Quality**	**California AMT-Free**	**California Quality**	**California Value**	**California Value 2**	**Massachusetts Quality**	**Michigan Quality**	**New Jersey Quality**
Board Members/Nominees who are not interested persons of the Funds								
Jack B. Evans	None	None	None	None	None	None	None	None
William C. Hunter	None	None	None	None	None	None	None	None
David J. Kundert	None	None	None	None	None	None	None	None
Albin F. Moschner(2)	None	None	None	None	None	None	None	None
John K. Nelson	None	None	None	None	None	None	None	None
William J. Schneider	None	None	None	None	None	None	None	None
Judith M. Stockdale	None	None	None	None	None	None	None	None
Carole E. Stone	None	None	None	None	None	None	None	None
Terence J. Toth	None	None	None	None	None	None	None	None
Margaret L. Wolff	None	None	None	None	None	None	None	None
Robert L. Young	None	None	None	None	None	None	None	None
Board Members/Nominees who are interested persons of the Funds								
Margo L. Cook(2).	None	None	None	None	None	None	None	None

	Dollar Range of Equity Securities					
Board Member/Nominees	**New Jersey Value**	**Ohio Quality**	**Pennsylvania Quality**	**Pennsylvania Value**	**Texas Quality**	**Aggregate Range of Equity Securities in All Registered Investment Companies Overseen by Board Member Nominees in Family of Investment Companies[1]**
Board Members/Nominees who are not interested persons of the Funds						
Jack B. Evans	None	None	None	None	None	Over $100,000
William C. Hunter	None	None	None	None	None	Over $100,000
David J. Kundert	None	None	None	None	None	Over $100,000
Albin F. Moschner[2]	None	None	None	None	None	None
John K. Nelson	None	None	None	None	None	Over $100,000
William J. Schneider	None	None	None	None	None	Over $100,000
Judith M. Stockdale	None	None	None	None	None	Over $100,000
Carole E. Stone	None	None	None	None	None	Over $100,000
Terence J. Toth	None	None	None	None	None	Over $100,000
Margaret L. Wolff	None	None	None	None	None	Over $100,000
Robert L. Young[3]	None	None	None	None	None	None
Board Members/Nominees who are interested persons of the Funds						
Margo L. Cook[2].	None	None	None	None	None	Over $100,000

(1) The amounts reflect the aggregate dollar range of equity securities of the number of shares beneficially owned by the Board Member/nominee in the Funds and in all Nuveen funds overseen by each Board Member/nominee.

(2) Board Members Cook and Moschner were appointed on June 22, 2016 to the Board of Trustees/Directors of the Nuveen Funds, effective July 1, 2016.

(3) Board Member Young was appointed on May 25, 2017 to the Board of Trustees/Directors of the Nuveen funds, effective July 1, 2017.

The following table sets forth, for each Board Member/nominee and for the Board Member/nominees and officers as a group, the amount of shares beneficially owned in each Fund as of July 31, 2017. The information as to beneficial ownership is based on statements furnished by each Board Member/nominee and officer.

	Fund Shares Owned By Board Members And Officers[1]						
Board Member/Nominees	**Arizona Quality**	**California AMT-Free**	**California Quality**	**California Value**	**California Value 2**	**Massachusetts Quality**	**Michigan Quality**
Board Members/Nominees who are not interested persons of the Funds							
Jack B. Evans	0	0	0	0	0	0	0
William C. Hunter	0	0	0	0	0	0	0
David J. Kundert	0	0	0	0	0	0	0
Albin F. Moschner[2]	0	0	0	0	0	0	0
John K. Nelson	0	0	0	0	0	0	0
William J. Schneider	0	0	0	0	0	0	0
Judith M. Stockdale	0	0	0	0	0	0	0
Carole E. Stone	0	0	0	0	0	0	0
Terence J. Toth	0	0	0	0	0	0	0
Margaret L. Wolff	0	0	0	0	0	0	0
Robert L. Young	0	0	0	0	0	0	0
Board Members/Nominees who are interested persons of the Funds							
Margo L. Cook[2].	0	0	0	0	0	0	0
All Board Members/Nominees and Officers as a Group	0	0	0	0	0	0	0

Fund Shares Owned By Board Members And Officers[1]

Board Member/Nominees	New Jersey Quality	New Jersey Value	Ohio Quality	Pennsylvania Quality	Pennsylvania Value	Texas Quality
Board Members/Nominees who are not interested persons of the Funds						
Jack B. Evans	0	0	0	0	0	0
William C. Hunter	0	0	0	0	0	0
Albin F. Moschner[2]	0	0	0	0	0	0
David J. Kundert	0	0	0	0	0	0
John K. Nelson	0	0	0	0	0	0
William J. Schneider	0	0	0	0	0	0
Judith M. Stockdale	0	0	0	0	0	0
Carole E. Stone	0	0	0	0	0	0
Terence J. Toth	0	0	0	0	0	0
Margaret L. Wolff	0	0	0	0	0	0
Robert L. Young[3]	0	0	0	0	0	0
Board Members/Nominees who are interested persons of the Funds						
Margo L. Cook[2].	0	0	0	0	0	0
All Board Members/Nominees and Officers as a Group	0	0	0	0	0	0

(1) The numbers include share equivalents of certain Nuveen funds in which the Board Member/nominee is deemed to be invested pursuant to the Deferred Compensation Plan for Independent Board Members as more fully described in the Proxy Statement.

(2) Board Members Cook and Moschner were appointed on June 22, 2016 to the Board of Trustees/Directors of the Nuveen Funds, effective July 1, 2016.

(3) Board Member Young was appointed on May 25, 2017 to the Board of Trustees/Directors of the Nuveen funds, effective July 1, 2017.

APPENDIX B

List of Beneficial Owners Who Own More Than 5% of Any Class of Shares in Any Fund

The following chart lists each shareholder or group of shareholders who beneficially owned more than 5% of any class of shares for each Fund as of September 18, 2017*:

Fund and Class	Shareholder Name and Address	Number of Shares Owned	Percentage Owned
Arizona Quality VMTP Shares	Wells Fargo & Company[a] 420 Montgomery Street San Francisco, CA 94104	883	100%
	Wells Fargo Municipal Capital Strategies, LLC[a] 375 Park Avenue New York, NY 10152		
California AMT-Free Common Shares	First Trust Portfolios L.P.[b] First Trust Advisors L.P.[b] The Charger Corporation[b] 120 East Liberty Drive, Suite 400 Wheaton, IL 60187	2,419,948	5.07%
California AMT-Free VRDP Shares (Series 4)	Citigroup Global Markets Inc.[e]	160	14.7%
	Citigroup Financial Products Inc.[e]		
	Citigroup Global Markets Holdings Inc[e]		
	Citigroup Inc[e]		
	388 Greenwich Street		
	New York, NY 10013		
California Quality VMTP Shares	Wells Fargo & Company[a] 420 Montgomery Street San Francisco, CA 94104	1,450	100%
	Wells Fargo Municipal Capital Strategies, LLC[a] 375 Park Avenue New York, NY 10152		
California Value Common Shares	First Trust Portfolios L.P.[b] First Trust Advisors L.P.[b] The Charger Corporation[b] 120 East Liberty Drive, Suite 400 Wheaton, IL 60187	1,367,151	5.23%
Massachusetts Quality Common Shares	Gerald Fels[c] Marilyn Fels[c] 271 Thompson Road Webster, Massachusetts 05170	1,200,000	12.84%
Massachusetts Quality VRDP Shares (Series 1)	Wells Fargo & Company[a] 420 Montgomery Street San Francisco, CA 94104	740	100%

Wells Fargo Municipal Capital Strategies, LLC[(a)]
375 Park Avenue
New York, NY 10152

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Fund and Class	Shareholder Name and Address	Number of Shares Owned	Percentage Owned
Michigan Quality VMTP Shares	Wells Fargo & Company[d]	1,730	100%
	420 Montgomery Street		
	San Francisco, CA 94104		
	Wells Fargo Municipal Capital Strategies, LLC[d]		
	375 Park Avenue		
	New York, NY 10152		
	Wells Fargo Bank, National Association[d]		
	101 N. Phillips Street		
	Sioux Falls, SD 57104		
New Jersey Quality VRDP Shares (Series 2 and 3)	Wells Fargo & Company[a]	2,329	74.20%
	420 Montgomery Street		
	San Francisco, CA 94104		
	Wells Fargo Municipal Capital Strategies, LLC[a]		
	375 Park Avenue		
	New York, NY 10152		
New Jersey Quality Preferred Shares	Toronto Dominion Investments, Inc.	810	25.8%
	909 Fannin Street, STE 1700		
	Houston, TX 77010		
New Jersey Quality Common Shares	First Trust Portfolios L.P.[f]	2,925,045	6.87%
	First Trust Advisors L.P.[f]		
	The Charger Corporation[f]		
	120 East Liberty Drive, Suite 400		
	Wheaton, IL 60187		
New Jersey Quality Common Shares	Karpus Management, Inc., d/b/a Karpus Investment Management	505,750	14.43%
	183 Sully s Trail		
	Pittsford, NY 14534		

New Jersey Value Common Shares	First Trust Portfolios L.P.[f]	141,962	9.16%
	First Trust Advisors L.P.[f]		
	The Charger Corporation[f]		
	120 East Liberty Drive, Suite 400		
	Wheaton, IL 60187		
Ohio Quality VRDP Shares (Series 1)	Bank of America Corporation[g]	1,480	100%
	Bank of America Preferred Funding Corporation[g]		
	Bank of America Corporate Center		
	100 North Tryon Street		
	Charlotte, NC 28255		
Pennsylvania Quality VMTP Shares	Wells Fargo & Company[a]	870	100%
	420 Montgomery Street		
	San Francisco, CA 94104		
	Wells Fargo Municipal Capital Strategies, LLC[a]		
	375 Park Avenue		
	New York, NY 10152		

Fund and Class	Shareholder Name and Address	Number of Shares Owned	Percentage Owned
Pennsylvania Quality VRDP Shares (Series 2 and 3)	Wells Fargo & Company[a] 420 Montgomery Street San Francisco, CA 94104	3,045	100%
	Wells Fargo Municipal Capital Strategies, LLC[a] 375 Park Avenue New York, NY 10152		

* The information contained in this table is based on Schedule 13D and 13G filings made on or before September 18, 2017.

(a) Wells Fargo & Company and Wells Fargo Municipal Capital Strategies, LLC filed their Schedule 13D jointly and did not differentiate holdings as to each entity.

(b) First Trust Portfolios L.P., First Trust Advisors L.P. and The Charger Corporation filed their Schedule 13G jointly. First Trust Advisors L.P. and The Charger Corporation share voting power with respect to 8,330 Common Shares. First Trust Portfolios L.P. shares dispositive power with respect to 2,411,618 Common Shares and First Trust Advisors L.P. and the Charger Corporation each shares dispositive power with respect to 2,419,948 Common Shares.

(c) Gerald Fels and Marilyn Fels filed their Schedule 13G jointly and share voting power with respect to 1,200,000 Common Shares. In addition, Mr. Fels has sole voting power with respect to an additional 132,557 Common Shares and Mrs. Fels has sole voting power with respect to an additional 210,025 Common Shares.

(d) Wells Fargo & Company, Wells Fargo Municipal Capital Strategies, LLC and Wells Fargo, National Association filed their Schedule 13D jointly. Wells Fargo & Company has shared voting power with respect to 1,730 VMTP Shares, Wells Fargo Municipal Capital Strategies, LLC has shared voting power with respect to 851 VMTP Shares and Wells Fargo, National Association has shared voting power with respect to 879 VMTP Shares.

(e) Citigroup Global Markets Inc., Citigroup Financial Products Inc., Citigroup Global Markets Holdings Inc. and Citigroup Inc. filed their Schedule 13G jointly and did not differentiate holdings as to each entity.

(f) Bank of America Corporation and Bank of America Preferred Funding Corporation filed their Schedule 13D jointly and did not differentiate holdings as to each entity.

(g) First Trust Portfolios L.P., First Trust Advisors L.P. and The Charger Corporation filed their Schedule 13G jointly and did not differentiate holdings as to each entity.

VRDP Shares are designed to be eligible for purchase by money market funds. Based on information provided by remarketing agents for the VRDP Shares, money market funds within certain fund complexes may hold, in the aggregate, greater than 5% of the outstanding VRDP Shares of one or more Funds, and individual money market funds within such complexes may beneficially own an indeterminable amount of VRDP Shares exceeding 5% of the outstanding VRDP Shares of one or more Funds. Information with respect to aggregate holdings of these VRDP Shares associated with fund complexes identified by the remarketing agents as holding greater than 5% of the outstanding VRDP Shares of a Fund, including the number of VRDP Shares associated with the fund complex and percentage of total outstanding, is as follows: California AMT-Free (Series 2): Vanguard (355 shares (100%)); California AMT-Free (Series 3): JPMorgan (265 shares (62.06%)); California AMT-Free (Series 3): Vanguard (162 shares (37.94%)); California AMT-Free (Series 4): Vanguard (970 shares (88.99%)); California AMT-Free (Series 5): JPMorgan (491 shares (47.03%)); California AMT-Free (Series 5): Charles Schwab (503 shares (48.18%)); California AMT-Free (Series 5):

Vanguard (50 shares (4.78%)); California Quality (Series 1): JPMorgan (662 shares (48.60%)); California Quality (Series 1): Charles Schwab (600 shares (44.05%)); California Quality (Series 1): Deutsche Bank (100 shares (7.34%)); California Quality (Series 3): JPMorgan (268 shares (53.82%)); California

Quality (Series 3): Vanguard (200 shares (40.16%)); California Quality (Series 3): Wells Fargo Municipal Capital Strategies, LLC (30 shares (6.02%)); California Quality (Series 4): JPMorgan (755 shares (71.50%)); California Quality (Series 4): Vanguard (136 shares (12.88%)); California Quality (Series 4): Charles Schwab (110 shares (10.42%)); California Quality (Series 4): Deutsche Bank (55 shares (5.20%)); California Quality (Series 7): Charles Schwab (380 shares (38.78%)); California Quality (Series 7): Vanguard (300 shares (30.61%)); California Quality (Series 7): Deutsche Bank (285 shares (29.08%)); California Quality (Series 7): Morgan Stanley (15 shares (1.53%)); California Quality (Series 8): Vanguard (1,141 shares (71.31%)); California Quality (Series 8): MacKay Shields (160 shares (10.00%)); California Quality (Series 8): Charles Schwab (159 shares (9.94%)); California Quality (Series 8): JPMorgan (140 shares (8.75%)); Massachusetts Quality (Series 1): Wells Fargo Municipal Capital Strategies, LLC (1,730 shares (100%)); New Jersey Quality (Series 1): Toronto-Dominion Investments, Inc. (810 shares (100%)); New Jersey Quality (Series 2): Wells Fargo Municipal Credit Strategies, LLC (1,443 shares (100%)); New Jersey Quality (Series 3): Wells Fargo Municipal Credit Strategies, LLC (886 shares (100%)); Ohio Quality (Series 1): Banc of America Preferred Funding Corporation (1,480 shares (100%)); Pennsylvania Quality (Series 2): Wells Fargo Municipal Credit Strategies, LLC (1,125 shares (100%)); and Pennsylvania Quality (Series 3): Wells Fargo Municipal Credit Strategies, LLC (1,050 shares (100%)). The Funds have received no information from the remarketing agents regarding any shareholders or groups of shareholders that beneficially own greater than 5% of the outstanding VRDP Shares of California AMT-Free (Series 6), California Quality (Series 2), California Quality (Series 5) and California Quality (Series 6).

iMTP Shares are designed to be eligible for purchase by institutional investors. Based on information provided by the initial purchasers for the iMTP Shares, money market funds within certain fund complexes may hold, in the aggregate, greater than 5% of the outstanding iMTP Shares of a Fund, and individual money market funds within such complexes may beneficially own an indeterminable amount of iMTP Shares exceeding 5% of the outstanding iMTP Shares of a Fund. The Funds have received no information from the purchasers regarding any shareholders or groups of shareholders that beneficially own greater than 5% of the outstanding iMTP Shares of California AMT-Free or Texas Quality.

APPENDIX C

NUMBER OF BOARD AND COMMITTEE MEETINGS

HELD DURING EACH FUND S LAST FISCAL YEAR

Fund	Regular Board Meeting	Special Board Meeting	Executive Committee Meeting	Dividend Committee Meeting	Compliance, Risk Management and Regulatory Oversight Committee Meeting	Audit Committee Meeting	Nominating and Governance Committee Meeting	Closed-End Funds Committee
Arizona Quality	6	9	1	4	5	4	7	4
California AMT-Free	6	9	1	4	5	4	7	4
California Quality	6	9	1	4	5	4	7	4
California Value	6	7	0	4	5	4	7	4
California Value 2	6	7	0	4	5	4	7	4
Massachusetts Quality	6	10	1	4	5	4	7	4
Michigan Quality	6	9	1	4	5	4	7	4
New Jersey Quality	6	9	2	4	5	4	7	4
New Jersey Value	6	7	0	4	5	4	7	4
Ohio Quality	6	9	0	4	5	4	7	4
Pennsylvania Quality	6	9	1	4	5	4	7	4
Pennsylvania Value	6	7	0	4	5	4	7	4
Texas Quality	6	9	0	4	5	4	7	4

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