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June 30, 2019

1. SUMMARY OF SIGNIFICANT ACCOUNTING POLICIES

A. Basis of Presentation

The accompanying financial statements have been prepared in conformance with accounting principles generally accepted in the United States of America as prescribed by the Governmental Accounting Standards Board (GASB) and the Financial Accounting Standards Board (FASB).

B. Reporting Entity

For financial reporting purposes, the Commonwealth of Virginia's (the Commonwealth's) reporting entity consists of (1) the primary government, (2) component unit organizations for which the primary government is financially accountable or for which the resources of the component unit primarily benefit the primary government (blended component units), and (3) other component unit organizations for which the nature and significance of their relationship with the primary government is such that exclusion would cause the reporting entity's financial statements to be misleading, and they are financially accountable to the primary government (discrete component units). The funds of all agencies, boards, commissions, foundations, and authorities that have been identified as part of the primary government or a component unit have been included. GASB standards require the inclusion of numerous organizations that raise and hold funds for the direct benefit of the primary government.

Section 2100 of the GASB *Codification of Governmental Accounting and Financial Reporting Standards* (GASB Codification) describes the criteria for determining which organizations, functions, and activities should be considered part of the Commonwealth for financial reporting purposes. The basic criteria include appointing a voting majority of an organization's governing body, and the Commonwealth's ability to impose its will on that organization or the potential for the organization to provide specific financial benefits to, or impose specific financial burdens on, the Commonwealth. Additionally, in instances where the voting majority is not appointed, the above benefit/burden criteria apply. If the organization's assets are also held for, or can be accessed by, the Commonwealth, the organization is considered part of the reporting entity.

(1) Primary Government – A primary government consists of all the organizations that make up its legal entity. All funds, organizations, institutions, agencies, and departments are, for financial reporting purposes, part of the primary government.

(2) Blended Component Units – Though legally separate entities, these component units are, in substance, part of the primary government's operations. The blended component units serve or benefit the primary government almost exclusively. Financial information from these units is combined with that of the primary government. The Commonwealth's blended component units are:

Virginia Public Building Authority (nonmajor governmental fund) – The Authority was created as a body politic and corporate and is fiscally independent. A government instrumentality, the Authority finances the acquisition and construction of buildings for the use of the Commonwealth and other approved purposes. The Governor appoints the 7-member board, and the primary government is able to impose its will on the Authority. The Auditor of Public Accounts audits the Authority, and a separate report is issued from the Department of the Treasury, Post Office Box 1879, Richmond, Virginia 23218-1879.

Hampton Roads Transportation Accountability Commission (nonmajor governmental fund) – The Commission is a political subdivision of the Commonwealth of Virginia, created by the Hampton Roads Transportation Accountability Commission Act. The Commission has a 23-member board comprised primarily of representatives from participating localities in Planning District 23. Its primary function is determining how the Hampton Roads Transportation Fund regional sales and use tax and fuel tax monies will be invested in new construction projects to provide the greatest impact on reducing congestion for the greatest number of citizens residing within Planning District 23. Based on the projects that the Commission is presently funding, all capital assets constructed by the Commission are reported as Commonwealth assets by the Virginia Department of Transportation (VDOT) (part of primary government). Accordingly, while the Commonwealth is not obligated to pay the Commission's debt, it would be misleading to exclude the Commission from the Commonwealth's financial statements. The administrative offices of the Commission are located at 723 Woodlake Drive, Chesapeake, VA 23320. The Commission is audited by PB Mares, LLP.

Virginia Alcoholic Beverage Control Authority (nonmajor enterprise fund) – The Authority was created as an independent political subdivision of the Commonwealth, exclusive of the legislative, executive, or judicial branches of state

government. A government instrumentality, the Authority controls the possession, sale, transportation, distribution, and delivery of alcoholic beverages in the Commonwealth. The Governor appoints the 5-member board, and the primary government is able to impose its will on the Authority. Additionally, the Commonwealth receives all net profits. The administrative offices of the Authority are located at 2901 Hermitage Road, Richmond, VA 23220. The Auditor of Public Accounts audits the Authority and a separate report is issued.

(3) Discrete Component Units – Discretely presented component units are reported in a separate column in the government-wide financial statements to emphasize that they are legally separate from the primary government. They are financially accountable to the primary government, or have relationships with the primary government such that exclusion would cause the reporting entity's financial statements to be misleading. These discrete component units serve or benefit those outside of the primary government.

GASB statements generally require any organization that raises and holds economic resources for the direct benefit of the reporting entity to be reported as a component unit, even if the reporting entity is not financially accountable for the organization. The entities are included in the Commonwealth's reporting entity as nonprofit charitable organizations and exist solely to support the Commonwealth's higher education institutions and certain state agencies. The higher education institution nonprofit organizations are included in the applicable higher education institution's column in the accompanying financial statements. In all instances where separate disclosure of these nonprofit organizations is required in the accompanying footnotes, the entities' totals are aggregated and disclosed as "foundations."

The criteria for reporting certain component units as major component units focuses on the nature and significance of the component unit's relationship to the primary government versus other component units.

Discretely presented component units are:

Virginia Housing Development Authority (major) – The Authority was created as a political subdivision and instrumentality of the Commonwealth and is granted both politic and corporate powers by the *Code of Virginia*. The Governor appoints a majority of the Authority's board members and the remaining board members are ex-officio. The Commonwealth may make grants to the Authority including, but not limited to, reserve funds, which is a potential financial benefit/burden to the primary government. The Commonwealth is not legally obligated by the debt of the Authority. The Authority was created in the public interest to provide investment in and stimulate construction of low to moderate income housing which benefits the citizens of the Commonwealth. The administrative offices of the Authority are located at 601 South Belvidere Street, Richmond, Virginia 23220. KPMG, LLP audits the Authority, and a separate report is issued.

Virginia Public School Authority (major) – The Authority was created as a public body corporate, and an agency and instrumentality of the Commonwealth to finance capital projects of city and county school boards. The Governor appoints the board members, who serve at his pleasure. Therefore, the primary government is able to impose its will on the Authority. The Auditor of Public Accounts audits the Authority, and a separate report is issued from the Department of the Treasury, Post Office Box 1879, Richmond, Virginia 23218-1879.

Virginia Resources Authority (major) – The Authority was created as a public body corporate and a political subdivision of the Commonwealth to provide financing of infrastructure projects for water supply, wastewater, storm water, solid waste treatment, airports, public safety, brownfields remediation and redevelopment, and recycling. The Governor appoints the 11-member board and the Executive Director of the Authority. The primary government is able to impose its will on the Authority, and there is a financial benefit/burden to the primary government. The Commonwealth does not guarantee any bonds issued by the Authority. The administrative offices of the Authority are located at 1111 East Main Street, Suite 1920, Richmond, Virginia 23219. Clifton Larson Allen, LLP audits the Authority, and a separate report is issued.

The Authority issued bonds through the Virginia Green Communities Program (VGCP), which uses the Commonwealth's allocation of Qualified Energy Conservation Bonds to provide subsidized financing for energy efficiency, renewable energy, alternative fueling, and other qualified conservation purposes. The Authority is a conduit issuer for public borrowers with a third-party funding source providing financing for eligible projects. The terms of the VGCP bonds stipulate that the Authority does not guarantee repayment of principal and interest to the bondholders. The Authority has elected to show these bonds as liabilities and the associated loans from local borrowers as assets in their separately issued financial statements. Accordingly, the associated assets and liabilities are included in the accompanying financial statements.

Virginia College Building Authority (major) – The Authority was created as a public body corporate, a political subdivision, and an agency and instrumentality of the Commonwealth. The Governor appoints a majority of the board and members serve at his pleasure. Therefore, the primary government is able to impose its will on

the Authority. The Authority finances certain capital projects and equipment purchases of state-supported colleges and universities. The Auditor of Public Accounts audits the Authority, and a separate report is issued from the Department of the Treasury, Post Office Box 1879, Richmond, Virginia 23218-1879.

Only the activity of the Authority that relates to the financing of capital projects and equipment purchases by state-supported colleges and universities is included in the accompanying financial statements. The state-supported colleges and universities reported revenue from the Authority of $409.6 million as Program Revenue Capital Grants and Contributions for the 21st Century Program and $84.6 million as Program Revenue Operating Grants and Contributions for equipment. The Authority reported Operating Appropriations from Primary Government of approximately $403.2 million. In addition, the Authority reported approximately $30.0 million in payments from the state-supported colleges and universities for 21st Century and Equipment Program debt service costs and approximately $11.0 million in interest on Build America Bonds.

The Authority assists private institutions of higher education in the financing and refinancing of a broad range of facilities. The Authority is authorized to issue obligations and lend the proceeds to private institutions; however, such financings or refinancings are not obligations of the primary government nor the Authority, but are payable solely from the revenues pledged by the respective private institution. This indebtedness, totaling $697.5 million, is not included in the accompanying financial statements.

Higher Education Institutions (nonmajor) – The Commonwealth's higher education institutions are granted broad corporate powers by state statutes. The Governor appoints the members of each institution's board of trustees. In addition to the annual appropriations to support the institutions' operations, the Commonwealth provides funding for, and construction of, major academic plant facilities for the institutions. Institutions reported Operating Appropriations from Primary Government of approximately $1.9 billion. Therefore, there is a financial benefit/burden to the primary government. The higher education institutions are: the University of Virginia, including the University of Virginia Medical Center and the University of Virginia's College at Wise; Virginia Polytechnic Institute and State University; Virginia Commonwealth University, including the Virginia Commonwealth University Health System Authority; the College of William & Mary, including Richard Bland College and the Virginia Institute of Marine Science; Virginia Military Institute; Virginia State University; Norfolk State University; University of Mary Washington; James Madison University; Radford University; Old Dominion University; George Mason University; Virginia Community College System; Christopher Newport University; and Longwood University. The Southwest Virginia Higher Education Center, Roanoke Higher Education Authority, Institute for Advanced Learning and Research, Southern Virginia Higher Education Center, and New College Institute are also included as higher education institutions. The colleges and universities are funded through state appropriations, tuition, federal grants, and private donations and grants. As previously noted, certain foundations are considered component units of the higher education institutions, and are included in the accompanying financial statements as well as the higher education institutions' separately issued financial statements. The Auditor of Public Accounts (APA) does not audit the Roanoke Higher Education Authority, the Institute for Advanced Learning and Research, and the component units of the higher education institutions, including foundations, but relies on the reports issued by other auditors to render her opinion.

The APA audits the colleges and universities, and individual reports are issued under separate cover. Complete financial statements for each institution may be obtained from their respective administrative offices. The addresses for these institutions may be obtained from the Department of Accounts, 101 North 14th Street, Richmond, Virginia 23219-3638.

Innovation and Entrepreneurship Investment Authority (nonmajor) – The Authority is granted corporate powers by the *Code of Virginia*. The Authority serves to facilitate the marketing, organization, and development of scientific research and technology by the state's institutions of higher education and private industry in the Commonwealth. In addition, the Authority serves to promote the economic development of the Commonwealth by attracting and retaining high technology jobs and businesses in Virginia. The Governor and General Assembly appoint the 17-member board, and there is a financial benefit/burden to the primary government. The Authority's combined financial statements include the accounts of the Center for Innovative Technology (CIT) and subsidiaries after elimination of all significant intercompany balances and transactions. CIT is a non-stock, not-for-profit corporation, which acts as the operating arm of the Authority. The address for the administrative offices of the Authority is CIT Building, Suite 600, 2214 Rock Hill Road, Herndon, Virginia 20170-4228. The Auditor of Public Accounts audits the Authority, and a separate report is issued.

Virginia Economic Development Partnership (nonmajor) – The Partnership was created as a body corporate and operates to encourage, stimulate, and support the development and expansion of both domestic and international commerce in the Commonwealth. The Governor appoints the 17-member board, and there is a

financial benefit/burden to the primary government. The administrative offices are located at 901 East Cary Street, Suite 900, Richmond, Virginia 23219. The Auditor of Public Accounts audits the Partnership, and a separate report is issued.

Virginia Outdoors Foundation (nonmajor) – The Foundation was created as a body politic and is administratively assigned to the Department of Conservation and Recreation (part of primary government) and charged with promoting preservation through the acceptance of donated conservation easements and raising funds for the purchase of preservation land. The Governor appoints the 7-member board of trustees, and the primary government can impose its will on the Foundation. The administrative offices of the Foundation are located at 900 South Main Street, Blacksburg, Virginia 24060. Hicok, Brown & Company CPAs audits the Foundation, and a separate report is issued.

Virginia Port Authority (nonmajor) – The Authority was established as a corporate body and operates to serve the citizens and promote commerce through the harbors and ports of Virginia. The Governor appoints a majority of the 14-member board, and the primary government is able to impose its will on the Authority. There is also a financial benefit/burden to the primary government. The administrative offices of the Authority are located at 1431 Terminal Boulevard, Norfolk, Virginia 23505. PBMares, LLP, audits the Authority, and a separate report is issued.

Virginia Tourism Authority (nonmajor) – The Authority was created as a public body corporate and as a political subdivision of the Commonwealth. The Authority encourages, stimulates, and promotes tourism and film production industries of the Commonwealth. The Governor appoints all of the board members, and there is a financial benefit/burden to the primary government. The administrative offices are located at 901 East Cary Street, Suite 900, Richmond, Virginia 23219. The Auditor of Public Accounts audits the Authority.

Virginia Foundation for Healthy Youth (nonmajor) – The Foundation was created as a body corporate and as a political subdivision of the Commonwealth. The Foundation was established to determine the appropriate recipients of monies in the Virginia Tobacco Settlement Fund and to distribute monies in this fund for such efforts as restricting the use of tobacco products by minors and the enforcement of laws restricting the distribution of tobacco products to minors. The Governor appoints the majority of the board, and there is a financial benefit/burden to the primary government. The administrative offices are located at 701 East Franklin Street, Suite 500, Richmond, Virginia 23219. The Auditor of Public Accounts audits the Foundation.

Tobacco Region Revitalization Commission (nonmajor) – The Commission was created as a body corporate and as a political subdivision of the Commonwealth. The Commission was established to determine the appropriate recipients of the monies in the Tobacco Indemnification and Community Revitalization Fund. This fund is to provide payments to tobacco farmers as compensation for the adverse economic effects resulting from loss of investment in specialized tobacco equipment and barns, as well as lost tobacco production opportunities. It also provides monies to revitalize tobacco dependent communities. The Governor appoints the majority of the board, and there is a financial benefit/burden to the primary government. The administrative offices are located at 701 East Franklin Street, Suite 501, Richmond, Virginia 23219. The Auditor of Public Accounts audits the Commission.

Hampton Roads Sanitation District Commission (nonmajor) – The Commission was established as a political subdivision of the Commonwealth and a government instrumentality. The Commission, which is the governing board of the district, was granted corporate powers by the *Code of Virginia*. The Governor appoints the Commission members, who serve at his pleasure. Therefore, the primary government is able to impose its will on the Commission. The Commonwealth is not obligated by the debt of the Commission. The Commission was established to benefit the inhabitants of the district and operates a sewage system for 18 localities in the Chesapeake Bay area. The address for the administrative offices of the Commission is 1434 Air Rail Avenue, Virginia Beach, Virginia 23455. Cherry Bekaert, LLP, audits the Commission, and a separate report is issued.

Virginia Biotechnology Research Partnership Authority (nonmajor) – The Authority is a legally separate, political subdivision of the Commonwealth created by the General Assembly to assist in the development of a biotechnology research park. The Governor appoints the board members of the Authority, and there is a potential financial benefit/burden to the primary government. The administrative offices of the Authority are located at 800 East Leigh Street, Richmond, Virginia 23219. The Auditor of Public Accounts audits the Authority, and a separate report is issued.

The Authority issued Series 2002 and Series 2013 revenue bonds for specific customers. The Series 2002 revenue bonds were for a facility built specifically for the United Network for Organ Sharing. The Series 2013 revenue bonds were to assist the Institute for Transfusion Medicine (ITxM). The bonds are secured by a letter of credit and are payable solely from the payments made by the borrower under the loan agreement. None of these bonds constitutes a debt or pledge of the

Authority or the Commonwealth. Accordingly, the bonds are not reported as liabilities in the accompanying financial statements.

Virginia Small Business Financing Authority (nonmajor) – Section 2.2-2280 of the *Code of* Virginia established the Authority as a public body corporate and a political subdivision of the Commonwealth. The Governor appoints the 11-member board, and the primary government is able to impose its will on the Authority. The Authority was created to assist small businesses in the Commonwealth in obtaining financing for new businesses or the expansion of existing businesses. The Authority can provide financial assistance to small businesses by providing loans, guarantees, insurance, and other assistance, thereby encouraging the investment of private capital in small businesses in the Commonwealth. The Authority can loan money to local governments as defined by the *Code of Virginia* for economic development purposes. The Authority also guarantees loans made to small businesses by banks. The administrative offices of the Authority are located at 101 North 14th Street, 11th Floor, Richmond, Virginia 23218-0446. The Auditor of Public Accounts audits the Authority.

The Authority has issued Industrial Development Revenue Bonds to provide financial assistance to private sector entities for the acquisition and construction of industrial and commercial facilities deemed to be in the public interest. The bonds are secured by the property financed and are payable solely from payments received on the underlying mortgage loans. Upon repayment of the bonds, ownership of the acquired facilities transfers to the private sector entity served by the bond issuance. Neither the Authority nor the Commonwealth is obligated in any manner for repayment of the bonds. Accordingly, the bonds are not reported as liabilities on the accompanying financial statements.

Virginia School for the Deaf and Blind Foundation (nonmajor) – The Foundation operates as a nonprofit educational and fundraising organization solely in connection with, and exclusively for the benefit of, the Virginia School for the Deaf and Blind (part of primary government). The Foundation uses a December 31 calendar year-end. The administrative offices are located at Post Office Box 2069, Staunton, Virginia 24402.

Science Museum of Virginia Foundation (nonmajor) – The Foundation is a non-stock, nonprofit corporation established to implement and fund programs, projects, and operations that are authorized and approved by the trustees of the Science Museum of Virginia (part of primary government). There is a financial benefit/burden relationship to the primary government, and the economic resources of the Foundation are entirely for the direct benefit of the Commonwealth and its citizens. The administrative offices of the Foundation are located at 2500 West Broad Street, Richmond, Virginia, 23220. Keiter, CPAs, audits the Foundation, and a separate report is issued.

Virginia Commercial Space Flight Authority (nonmajor) – The Authority is a legally separate political subdivision of the Commonwealth created by the General Assembly to facilitate and coordinate scientific and technological research and development and to promote the industrial and economic development of the Commonwealth. The Governor appoints the 9-member board, and there is a potential financial benefit/burden to the primary government. The Commonwealth approved the conversion of a $5.0 million interest-free note to repair Pad 0A into a grant in March 2015. During fiscal year 2018, the Authority received $20.0 million appropriated by the Commonwealth for the construction of Mid-Atlantic Regional Spaceport Facilities. The Commonwealth plans to transfer $15.8 million to the Authority annually through fiscal year 2024. The administrative offices of the Authority are located at 4111 Monarch Way, Suite 303, Norfolk, Virginia 23508. Brown Edwards & Company, LLP, audits the Authority, and a separate report is issued.

Danville Science Center, Inc. (nonmajor) – The Center is a nonprofit corporation formed for the purpose of implementing and funding those programs, projects and operations which are authorized and approved by the trustees of the Science Museum of Virginia (part of primary government). There is a financial benefit/burden to the primary government, and the economic resources of the Center are entirely for the direct benefit of the Commonwealth and its citizens. The administrative offices of the Center are located at 677 Craghead Street, Danville, Virginia 24541. Harris, Harvey, Neal & Company, LLP, audits the Center, and a separate report is issued.

Virginia Museum of Fine Arts Foundation (nonmajor) – The Foundation operates as a nonprofit corporation under the laws of Virginia to fund exhibitions, programs, and capital asset expansion to ensure that the Virginia Museum of Fine Arts (part of primary government) has the space and resources for art to help improve the quality of life for many. There is a financial benefit/burden to the primary government, and the economic resources of the Foundation are entirely for the direct benefit of the Commonwealth and its citizens. The administrative offices of the Foundation are located at 200 Arthur Ashe Boulevard, Richmond, Virginia 23220. Dixon Hughes Goodman, LLP, audits the Foundation, and a separate report is issued.

A. L. Philpott Manufacturing Extension Partnership (nonmajor) – The Partnership has the mission to foster economic growth by enhancing the competitiveness of Virginia's manufacturers.

The Partnership provides manufacturing firms with fee-based technology consulting services, access to business modernization resources, and support for interfirm collaboration. Further, the Partnership provides direct assistance to increase sales, decrease costs, and improve quality, productivity, and competitiveness. The Partnership has a 23-member board of trustees currently serving. The board consists of the presidents of two public four-year institutions of higher education; three community college presidents; one president of a private four-year institution of higher education; the director of Virginia's Center for Innovative Technology; Virginia's Secretary of Commerce and Trade; and 15 citizen members, representing manufacturing industries, appointed by the Governor. There is also a financial benefit/burden to the primary government. The administrative office is located at 32 Bridge Street South, Suite 200B, Martinsville, Virginia 24112-6216. The Auditor of Public Accounts audits the Partnership.

Fort Monroe Authority (nonmajor) – The Authority is a legally separate, political subdivision of the Commonwealth created by the General Assembly to assist in formulating a reuse plan for Fort Monroe. The Governor appoints a majority of the 14-member board, and there is a potential financial benefit/burden to the primary government. The administrative offices of the Authority are located at 20 Ingalls Road, Fort Monroe, Virginia 23651. Brown Edwards audits the Authority, and a separate report is issued.

Assistive Technology Loan Fund Authority (nonmajor) – The Authority was created as a political subdivision and public body corporate by the *Code of Virginia*. The Governor appoints the board of directors as directed by the *Code* and the primary government is able to impose its will on the Authority. The Authority manages a fund to provide loans to individuals to acquire assistive technology, other equipment, or other authorized purposes designed to help disabled individuals become more independent. The administrative offices are located at 1602 Rolling Hills Drive, Suite 107, Richmond, Virginia 23229. The Auditor of Public Accounts audits the Authority.

Virginia Land Conservation Foundation (nonmajor) – The Foundation was created as a body politic and corporate to serve the Department of Conservation and Recreation (DCR) (part of primary government) by acquiring interests in preservation land and providing grants to other entities to acquire interests in preservation land. The Governor appoints the 19-member board, and the primary government can impose its will on the Foundation. The administrative offices of the Foundation are located at 600 East Main Street, 24th Floor, Richmond, Virginia 23219. The Auditor of Public Accounts audits the Foundation as part of DCR.

Virginia Arts Foundation (nonmajor) – The Foundation was created as a body politic and corporate to serve the Virginia Commission for the Arts (part of primary government) by promoting the arts in the Commonwealth. The Governor appoints the board of trustees for the Virginia Commission for the Arts, which also serves as the board for the Virginia Arts Foundation. The Director of the Virginia Commission for the Arts serves as the board chairman. In addition, the primary government can impose its will on the Foundation. The administrative offices of the Foundation are located at 600 East Main Street, Suite 330, Richmond, Virginia 23219. The Auditor of Public Accounts audits the Foundation as part of the Virginia Commission for the Arts.

Library of Virginia Foundation (nonmajor) – The Foundation was created as a private, nonprofit 501(c)(3) corporation supporting the Library of Virginia (part of primary government). The Foundation was established upon receipt of a major bequest. The articles of incorporation stipulate that the Foundation shall at all times be operated solely in connection with, and exclusively for the benefit of, the Library of Virginia. The Foundation is governed by a separate board of directors, and promotes and supports the Library of Virginia in all activities. The administrative offices of the Foundation are located at 800 East Broad Street, Richmond, Virginia 23219. Frank Barcalow CPA, PLLC, audits the Foundation, and a separate report is issued.

Virginia Health Workforce Development Authority (nonmajor) – The Authority is a legally separate public body corporate and a political subdivision of the Commonwealth created by the General Assembly. The Authority facilitates the development of a statewide health professions pipeline. The Governor appoints a majority of the board members, and the primary government is able to impose its will on the Authority. The administrative offices of the Authority are located at 3831 Westerre Parkway, Suite 2, Henrico, Virginia 23233. The Auditor of Public Accounts audits the Authority.

(4) Related Organizations – Organizations for which the primary government appoints a majority of the board, but is not financially accountable, are related organizations. Related organizations are:

Tobacco Settlement Financing Corporation – The Corporation was created by the Tobacco Settlement Financing Corporation Act, Chapters 482 and 488 of the Acts of the General Assembly during the 2002 General Assembly Session. The Corporation is a public body corporate entity and an independent instrumentality of the Commonwealth, managed by a 6-member board, including the State Treasurer. The Corporation purchased all of the future tobacco settlement revenue allocated to the Tobacco Region Revitalization Commission (nonmajor component

unit). Neither the Commonwealth's nor the Virginia Foundation for Healthy Youth's (nonmajor component unit) tobacco revenue was securitized. The administrative offices of the Corporation are located at 101 North 14th Street, 3rd Floor, Post Office Box 1879, Richmond, Virginia 23218-1879. Clifton Larson Allen, LLP, audits the Corporation, and a separate report is issued.

Virginia Recreational Facilities Authority – The Authority was created as a political subdivision and instrumentality of the Commonwealth and given separate corporate powers by the *Code of Virginia*. The Governor appoints 13 members of the board of directors to serve alongside two members of the Senate and four members of the House of Delegates. The Authority operates educational programs, tourism, and commerce in the Roanoke Valley. The address for the administrative offices of the Authority is 5204 Bernard Drive Southwest, Post Office Box 29800, Roanoke, Virginia 24018. Robinson, Farmer, Cox Associates audits the Authority, and a separate report is issued.

Jamestown-Yorktown Educational Trust – The Trust was created as a nonprofit corporation by the *Code of Virginia* to assist the Jamestown-Yorktown Foundation (Foundation). The Trust board consists of six members selected from the Foundation's board of trustees. Several Commonwealth officials serve as ex-officio members of the Foundation's board, and the Governor appoints 12 members. The Trust operates the Jamestown Settlement and Yorktown Victory Centers' gift shops and café. The address for the administrative offices of the Trust is Post Office Box 3605, Williamsburg, Virginia 23187. Keiter Certified Public Accountants audits the Trust, and a separate report is issued.

Virginia Birth-Related Neurological Injury Compensation Program – The Program was created to provide a no-fault alternative for birth-related neurological injuries. The Governor appoints the 9-member board. The administrative offices of the Program are located at 7501 Boulders View Drive, Suite 210, Richmond, Virginia 23225. KPMG, LLP, audits the Program, and a separate report is issued.

Chesapeake Bay Bridge and Tunnel Commission – The Commission was created to establish policy and administer operations of the Chesapeake Bay Bridge Tunnel District. Any of the 11 members of the Commission appointed or reappointed on or after July 1, 1998, shall be appointed by the Governor, subject to confirmation by each house of the General Assembly. The administrative offices of the Commission are located at 32386 Lankford Highway, Cape Charles, Virginia 23310. KPMG, LLP, audits the Commission, and a separate report is issued.

C. Government-wide and Fund Financial Statements

The government-wide financial statements, the Statement of Net Position and the Statement of Activities, report information on all nonfiduciary activities of the primary government and component units. For the most part, the effect of interfund activity has been removed from these statements. Governmental activities, which are normally supported by taxes and intergovernmental revenues, are reported separately from business-type activities, which rely to a significant extent on fees and charges for support. Also, the primary government activity is reported separately from the legally separate component units for which the Commonwealth is financially accountable.

The Statement of Activities demonstrates the degree to which direct expenses of a specific function or segment are offset by program revenues. Direct expenses are those that are clearly identifiable with a specific function, segment, or component unit. In addition, to the extent that indirect costs are allocated to the various functions, the program expenses will include both direct and indirect costs. Program revenues include charges to customers who purchase, use, or directly benefit from goods or services provided by a given function, segment, or component unit, as well as investment income generated by operations. Program revenues also include grants, contributions, and investment income that are restricted to meeting the operational or capital requirements of a particular function, segment, or component unit. Taxes and other items properly excluded from program revenues are reported as general revenues.

Fund equity is restricted when constraints are placed on them that are imposed by external parties or constitutional provisions. When both restricted and unrestricted resources are available for use, the Commonwealth's policy is to use the restricted resources first. Some component units may follow a different policy. When committed, assigned, and unassigned resources are available for use, the Commonwealth's policy is to use the committed resources first, assigned resources next, and unassigned resources last.

Separate financial statements are provided for governmental funds, proprietary funds, fiduciary funds, and component units. However, fiduciary funds are not included in the government-wide statements. Major governmental funds, enterprise funds, and component units are reported in separate columns in the fund financial statements, with nonmajor funds being aggregated into a single column.

D. Measurement Focus, Basis of Accounting, and Financial Statement Presentation

Government-wide Financial Statements – The government-wide financial statements are reported using the economic resources measurement focus and the full accrual basis of accounting. Revenues are recorded when earned and expenses are recognized

when a liability is incurred, regardless of the timing of related cash flows. Grants and similar items are recognized as revenue as soon as all eligibility requirements imposed by the provider have been met.

Governmental Fund Financial Statements – The governmental fund financial statements are reported using the current financial resources measurement focus and the modified accrual basis of accounting. Revenues are recognized as soon as they are both measurable and available. Revenues are considered to be available when they are collectible within the current period or soon enough thereafter to pay liabilities of the current period. For this purpose, the primary government considers revenues to be available if they are collected within 60 days of the end of the current fiscal year (or one year for Medicaid). Significant revenues subject to accrual include federal grants and income and sales taxes. Income tax revenues for tax underpayments are only recognized to the extent of the primary government's estimated refunds for tax overpayments received. Revenues that the primary government earns by incurring obligations are recognized in the same period as when the obligations are recognized.

Expenditures generally are recorded when a liability is incurred, as under full accrual accounting. However, expenditures related to debt service, compensated absences, and claims and judgments are recorded only when the payment is due.

The primary government reports the following major governmental funds:

General Fund – Accounts for the transactions related to resources received and used for those services traditionally provided by a state government, and which are not accounted for in any other fund. These services include general government, legislative and judicial activities, public safety, health and behavioral health programs, resources and economic development, licensing and regulation, and primary and secondary education.

Commonwealth Transportation Special Revenue Fund – Accounts for the revenues and expenditures associated with highway operations, maintenance, construction, and other transportation related activities. Funding for these programs is received from highway user taxes, fees, and funds received from the federal government.

Federal Trust Special Revenue Fund – Accounts for all federal dollars received by the Commonwealth except those received by the Commonwealth Transportation Fund, the Unemployment Compensation Fund, certain Medicaid reimbursements recorded in the General Fund, the Grant Anticipation Revenue Notes and Build America Bond Subsidies reported in the Debt Service Fund, and component units.

Literary Fund Special Revenue Fund – Accounts for revenues from fines, forfeitures, and proceeds from unclaimed property used primarily to support public education in the Commonwealth. This fund provides low interest loans to school divisions for construction, renovations, and expansion of school buildings.

Proprietary Funds, Fiduciary Funds, and Component Units Financial Statements – The financial statements of the proprietary funds, fiduciary funds, and component units are reported using the economic resources measurement focus and the full accrual basis of accounting. As with the government-wide statements, revenues are recorded when earned and expenses are recognized when a liability is incurred, regardless of the timing of related cash flows. Grants and similar items are recognized as revenue as soon as all eligibility requirements imposed by the provider have been met. Agency funds have no measurement focus since they only report assets and liabilities.

Proprietary funds distinguish operating revenues and expenses from nonoperating items. Operating revenues and expenses generally result from providing services and producing and delivering goods in connection with a proprietary fund's principal ongoing operations. Revenues and expenses not meeting this definition are reported as nonoperating.

Foundations' (component units) financial statements are prepared using the economic resources measurement focus and the full accrual basis of accounting. The financial statements are prepared under FASB rather than GASB standards. In some instances, activities of the foundations (component units) are reported separately within the footnotes because of the different reporting standards. Also, some foundations (component units) have a December 31st or March 31st year-end rather than a fiscal year-end. Foundations (component units) with different year-ends are included in these financial statements for the year ending August 31, 2018, December 31, 2018, or March 31, 2019. Significant intrafund activity/balances between each higher education institution and their foundations have been eliminated.

The following amounts could not be eliminated due to the differing year-ends:

- University of Virginia (nonmajor component unit):
  - institution revenue of $29.1 million
  - foundation assets of $1.7 million
  - foundation liabilities of $349,054
  - foundation expenses of $27.5 million
- Old Dominion University (nonmajor component unit):
  - institution liabilities of $51.6 million
  - foundation assets of $42.7 million

The primary government reports the following major enterprise funds:

Virginia Lottery Fund – Accounts for all receipts and expenses of the Virginia Lottery.

Virginia College Savings Plan Fund – Administers the Prepaid529 Program.

Unemployment Compensation Fund – Accounts for receipts from employers and expenses incurred to provide benefits to eligible unemployed workers.

Additionally, the primary government reports the following fund types:

Governmental Fund Types:

Special Revenue Funds – Account for transactions related to resources received and used for restricted, committed, or specific purposes.

Debt Service Funds – Account for transactions related to resources retained and used for the payment of interest and principal on long-term obligations. Additionally, this fund includes the activity of the Hampton Roads Transportation Accountability Commission (blended component unit).

Capital Project Funds – Account for transactions related to resources received and used for the acquisition, construction, or improvement of capital facilities not reported in the other governmental or proprietary funds with the exception of certain VPBA disbursements. The primary resource for these funds is the proceeds of bond issues and energy performance contracts. Principal uses are for construction and improvement of state office buildings, correctional and behavioral health facilities, and parks. Additionally, this fund includes the activity of the Hampton Roads Transportation Accountability Commission (blended component unit) for construction projects related to new or existing highways, bridges or tunnels in the localities comprising Planning District 23.

Permanent Funds – Account for transactions of the Commonwealth Health Research Fund and the Behavioral Health Endowment Funds whose principal must remain intact and whose income is used to benefit the Commonwealth's citizens and behavioral health patients.

Proprietary Fund Types:

Enterprise Funds – Account for transactions related to resources received and used for financing self-supporting activities of the primary government that offer products and services on a user-charge basis to external users.

Internal Service Funds – Account for transactions related to the financing and sale of goods or services provided by the agencies of the primary government to other agencies and institutions of the Commonwealth. Activities include the provision of information technology, manufacturing activities, insurance programs, fleet services, facilities and property management, engineering and payroll services.

Fiduciary Fund Types:

Private Purpose Trust Funds – Account for transactions of all other trust arrangements in which the principal and income benefit individuals, private organizations, or other governments. These trusts include those for the Commonwealth-sponsored educational savings plan and other purposes.

Pension and Other Employee Benefit Trust Funds – Account for transactions of the Commonwealth administered retirement systems and other employment benefits.

Investment Trust Funds – Account for the external portion of the Local Government Investment Pool (LGIP) and the LGIP Extended Maturity that is sponsored by the Commonwealth.

Agency Funds – Account for amounts held in trust by the primary government for others. Agency funds include those funds established to account for the collection of taxes and fees for distribution to localities and other states, employee benefits, deposits of insurance carriers, child support collections and other miscellaneous accounts.

E. Budgetary Process

Budgetary amounts shown in the Required Supplementary Information and Combining and Individual Fund Statements and Schedules sections represent the total of the original budgeted amounts and all supplemental appropriations. The Commonwealth's budget is prepared principally on a cash basis and represents appropriations as authorized by the General Assembly. Unexpended appropriations at the end of the fiscal year generally lapse. However, they may be reappropriated for expenditure in the following fiscal year. The Governor, as required by the *Code of Virginia*, submits a budget composed of all proposed expenditures for the Commonwealth, and of estimated revenues and borrowing for a biennium, to the General Assembly. Budgets are adopted for the General and Special Revenue Funds, except for the Literary (major special revenue) and Unclaimed Property (nonmajor special revenue) Funds. Formal budgetary integration is not employed for the Capital Projects (nonmajor governmental), Debt Service (nonmajor governmental), Permanent (nonmajor governmental), Literary (major special revenue) and Unclaimed Property (nonmajor special revenue) Funds because effective budgetary control is alternatively achieved

through the General Fund and the remaining special revenue funds.

The budget is prepared on a biennial basis; however, the budgets of the General and Special Revenue Funds contain separate appropriations for each year within the biennial budget, as approved by the General Assembly and signed into law by the Governor. For management control purposes, the lowest level of budgetary control is the program level. The Governor may transfer an appropriation within a state agency or from one state agency to another, provided that total fund appropriations, as contained within the budget, are not exceeded without further General Assembly action. Additionally, the Governor may reduce appropriations up to 15.0 percent without further General Assembly action. Increases in General Fund appropriations must be approved by the General Assembly.

Appropriations for programs funded from Special Revenue Funds may allow expenditures in excess of the original appropriations to the extent that revenues of the funds exceed original budget estimates and such additional expenditures are approved by the Governor through supplemental appropriations.

F. Cash, Cash Equivalents, Investments, and Derivatives

Cash

In order to maximize the Commonwealth's earning potential, the majority of the primary government's cash balances are pooled together in the general account for investment purposes. The amounts required for operations are liquidated as needed. Since all amounts not required for operations are held in investment securities, it is possible that the cash balances could be negative due to timing differences in liquidating the investments.

As of June 30, 2019, the General Fund had a negative cash balance of $6.2 billion. In order to properly reflect the general account position, this negative cash balance has been eliminated in the accompanying statements and offset against the primary government's cash equivalents and investments (see Note 8).

Cash Equivalents

Cash equivalents are investments with an original maturity of 90 days or less.

Investments

Investments are principally comprised of monies held by component units, Pension and Other Employee Benefit Trust Funds, and monies held by the State Treasurer in both the general account and other fiduciary accounts.

The primary government’s policy for managing interest rate risk, with the exception of the Virginia College Savings Plan (Virginia529) and the Virginia Retirement System (the System), uses the segmented time distribution method.

Virginia529, for its investment portfolio reported as Prepaid529 (major enterprise fund) and Invest529 (private purpose trust fund), and the System, for its investment portfolio reported as Pension and Other Employee Benefit Trust Funds, manage the interest rate risk using the effective duration methodology. To be consistent with management practices for each portfolio, the Commonwealth has elected to disclose the interest rate risk exposures, using the segmented time distribution for the primary government (excluding Prepaid529, Invest529, and Pension and Other Employee Benefit Trust Funds) and the effective duration method for Prepaid529, Invest529, and the Pension and Other Employee Benefit Trust Funds. The Commonwealth discloses the component unit's interest rate risk using the segmented time distribution method (see Note 8).

Governmental and proprietary funds, both primary government and component units, report investments in money market and in the Commonwealth sponsored investment pools at amortized cost which approximates fair value. All other investments, including investments in the Commonwealth sponsored Extended Maturity portfolio, are reported at fair value, in accordance with GASB Statement No. 31, *Accounting and Financial Reporting for Certain Investments and for External Investment Pools*, as amended by GASB Statement No. 72, *Fair Value Measurement and Application.* GASB Statement No. 72 provides guidance for determining fair value measurements using the level of fair value hierarchy and valuation techniques (see Note 8).

Investments administered by the System are reported at fair value, except for certain cash equivalents and other short-term, highly liquid investments are reported at amortized cost. The cost of investments sold is the average cost of the aggregate holding of the specific investment sold. Investments in affiliated organizations are accounted for on the equity method of accounting and the System’s share of their earnings (losses) for the period is included in investment income using the equity method.

Derivatives

Derivative instruments are financial contracts whose values depend on the values of one or more underlying assets, reference rates, or financial indexes (see Note 16).

G. Assets Held Pending Distribution

Assets held pending distribution include various assets that have been placed in safekeeping until final disposition has been determined.

H. Receivables

Receivables in the governmental funds consist primarily of the accrual of taxes, as well as receivables of the primary government's Medicaid program. Additionally, receivables include amounts to be received for debt service payments related to certain bonds. Receivables in the proprietary funds consist primarily of tuition contribution receivables and unemployment compensation. Receivables of fiduciary funds are primarily the accrual of security transactions in the Pension and Other Employee Benefit Trust Funds. Receivables of the component units consist primarily of mortgage receivables, loans receivable, local school bonds receivable, patient receivables, and student receivables. Receivables are recorded net of allowances for doubtful accounts (see Note 9).

I. Contributions Receivable, Net

Contributions Receivable reported by the foundations (component units) represents pledges or unconditional promises to give that have been discounted (see Note 10).

J. Internal Balances

Interfund receivables and payables have been eliminated from the Statement of Net Position, except for the residual amounts due between governmental and business-type activities (see Note 11).

K. Inventory

Inventories consist of materials and supplies and are reported as expenditures when consumed. These assets are classified as nonspendable fund balance. Inventories exceeding $1.0 million of the General and the Special Revenue Funds are maintained at cost using the first-in, first-out (FIFO) methodology, except for the following:

- Department of Health (VDH)
- Department of State Police (VSP)
- Virginia Department of Transportation (VDOT)

VDH supply inventories are recorded in the General (major), Federal Trust (major special revenue), and Health and Social Services (nonmajor special revenue) Funds using the FIFO methodology and are maintained at either cost or current market cost. VSP inventories are recorded in the General (major) and Other (nonmajor special revenue) Funds using the average cost methodology and are maintained at cost. VDOT inventories are recorded in the Commonwealth Transportation Fund (major special revenue) using the FIFO and average cost methodologies and are maintained at either cost or average cost.

In addition to inventories maintained as stated above, the following agencies reported donated inventory balances on hand as of June 30, 2019:

- Department of Behavioral Health and Developmental Services (DBHDS)
- Department of Health (VDH)
- Department of Juvenile Justice (DJJ)
- Frontier Culture Museum of Virginia (FCMV)

Inventories maintained by the Virginia Lottery (major enterprise fund) and the Virginia Industries for the Blind (nonmajor enterprise fund) are stated at cost using the average cost methodology.

Inventories maintained by the Virginia Museum of Fine Arts (nonmajor enterprise fund), the Science Museum of Virginia (nonmajor enterprise fund), and the Consolidated Laboratory (nonmajor enterprise fund) are stated at cost using FIFO.

Inventories maintained by the Alcoholic Beverage Control (nonmajor enterprise fund) are stated at average cost using the weighted average method.

Inventories maintained by Correctional Enterprises (internal service fund) are stated at the lower of cost or market using FIFO. Inventories maintained by the internal service funds except for Correctional Enterprises are stated at cost using FIFO.

Institutions of higher education (nonmajor component units) use several methods for inventory valuations, including cost using FIFO, the lower of cost or market using FIFO, or weighted average methods. Inventories maintained by the Virginia Port Authority (nonmajor component unit), the Hampton Roads Sanitation District Commission (nonmajor component unit), and the Danville Science Center (nonmajor component unit) are reported using the moving average unit cost methodology. Inventories at the gift shop run by the Library of Virginia Foundation (nonmajor component unit) are stated at lower of cost or market using the average cost methodology.

L. Prepaid Items

Prepaid assets for rent, insurance, and similar items are recognized when purchased and expensed when used.

M. Loans Receivable/Payable

Loans Receivable/Payable represents working capital advances between the primary government and component units (see Note 11).

N. Other Assets

Other Assets include those balances of a miscellaneous nature that are not specifically classified elsewhere. Additionally, it includes the Virginia Sickness and Disability Program Net Other Postemployment Benefit Plan Asset applicable to the proprietary and private purpose funds (see Note 12).

O. Capital Assets

Capital assets of governmental funds are recorded as expenditures at the time of purchase and capitalized in the governmental activities column of the Government-wide Statement of Net Position. Capital assets of the other funds and component units are capitalized in the fund in which they are utilized. All depreciable capital assets are depreciated on the straight-line basis over their useful lives (see Note 14).

Capital assets are stated at historical cost or, in some instances, estimated historical cost. Assets received pursuant to service concession arrangements and donated capital assets from entities external to the reporting entity are stated at acquisition value when they are placed in service or at the time of donation, respectively. Asset transfers or donations from within the reporting entity are recorded at the carrying value of the transferring entity as required by GASB Statement No. 48, *Sales and Pledges of Receivables and Future Revenues and Intra-Entity Transfers of Assets and Future Revenues*. The primary government capitalizes all equipment that has a cost or value greater than $50,000 and expected useful life of greater than two years. The primary government capitalizes all land, water rights/easements, buildings, infrastructure, and software that have a cost or value greater than $100,000 and an expected useful life of greater than two years. Selected agencies, business-type entities, and component units utilize a capitalization limit lower or higher than the primary government's established thresholds for various reasons. Accordingly, reported capital assets may include some items that cost less than those thresholds. Infrastructure, including highways, bridges, and rights-of-way, is capitalized using the historical approach and includes any assets acquired prior to fiscal year 1980.

The primary government's capitalization policy regarding works of art/historical treasures is that capitalization is encouraged, but not required, for works of art/historical treasures that meet the following conditions:

- The collection is held for public exhibition, education, or research in furtherance of public service, rather than financial gain;
- The collection is protected, kept unencumbered, cared for and preserved; and,
- The collection is subject to an organizational policy that requires the proceeds from sales of collection items to be used to acquire other items for the collection.

The primary government capitalizes construction-in-progress when project expenditures, including construction of intangible assets, exceed $100,000. Interest incurred during construction is not capitalized in governmental funds. Interest incurred during the construction of proprietary fund assets is included in the capitalized value of the asset. The total interest cost incurred during the fiscal year was $1.3 million. None of the interest cost incurred this fiscal year was capitalized.

Expenditures are classified as construction-in- progress if:

(1) They extend the asset life, improve productivity, or improve the quality of service; and,

(2) They fall into the planning, acquisition, construction, improvement, renovation, repair, replacement, relocation, or demolition phase of the asset life.

The estimated lives of capital assets are as follows:

	Years
Buildings	10–75
Equipment	2–50
Infrastructure	5–50
Software	5–35

Selected agencies, business-type entities, and component units may utilize estimated lives and policies that differ from the above for various reasons.

P. Deferred Outflows of Resources

Deferred outflows of resources are a consumption of assets by the government that is applicable to a future reporting period. Deferred outflows have a natural debit balance and, therefore increase net position similar to assets (see Notes 15, 16, 17, and 19).

Q. Accounts Payable

Accounts payable represent amounts, including salaries and wages, owed for goods and services received prior to year-end. In accordance with GASB Statement No. 33, *Accounting and Financial Reporting for Nonexchange Transactions*, accounts payable also includes payments for nonexchange transactions that met eligibility requirements prior to fiscal year-end (see Note 26).

R. Unearned Revenue

Unearned revenue represents monies received or revenues accrued but not earned as of June 30, 2019. The majority of unearned revenue is reported by higher education institutions (nonmajor component units), where it is primarily composed of revenue for student tuition accrued in advance of the semester and advance payments on grants and contracts.

In the special revenue funds, unearned revenue is composed primarily of prepaid toll revenue, contributions from localities and private sectors for highway construction projects, multi-year vehicle registrations recorded in the Commonwealth Transportation Fund (major), and multi-year motor vehicle safety inspections, emission inspections, mining permits, and hunting, fishing, and trapping licenses recorded in the Other and Health and Social Services Funds (nonmajor).

In the enterprise funds, a majority of unearned revenue represents online ticket monies received by the Virginia Lottery (major) for which corresponding drawings have not been held and test kits and certifications from Consolidated Labs (nonmajor) which are paid for prior to shipping and certification being performed.

Unearned revenue in the internal service funds primarily represents unearned premiums in the Risk Management Fund; advanced customer receipts in the Virginia Information Technologies Agency Fund; and prepaid rent and work orders in the Property Management Fund.

Unearned revenues in the other component units consist primarily of fees related to various activities.

S. Unearned Taxes

Unearned taxes represent income taxes related to the period January through June 2019. This amount is the estimate to be refunded (overpayments by taxpayers) reduced by the estimate to be received (underpayments from taxpayers) that will be finalized when income tax returns are filed in subsequent years. Individual income tax estimated overpayments total $1.0 billion and estimated underpayments total $1.1 billion. When underpayments exceed overpayments, revenue on the fund statements is only recognized to the extent of estimated overpayments. Since underpayments exceed overpayments for the individual income taxes, the unearned tax amount is zero for the fiscal year.

Corporate income tax estimated overpayments total $44.1 million and estimated underpayments total $70.1 million. When underpayments exceed overpayments, revenue on the fund statements is only recognized to the extent of estimated overpayments. Since underpayments exceed overpayments for the corporate income taxes, the unearned tax amount is zero for the fiscal year.

T. Obligations Under Securities Lending Program

In accordance with GASB Statement No. 28, *Accounting and Financial Reporting for Securities* Lending *Transactions*, liabilities resulting from these transactions have been recorded as obligations under securities lending transactions.

U. Due to Claimants, Participants, Escrows and Providers

Due to claimants, participants, escrows and providers represent monies that the Commonwealth is holding on behalf of third parties as of June 30, 2019. In governmental funds, the majority of the amount represents estimated unclaimed and escheat property that the Commonwealth is holding until claimed by the rightful owner.

In the enterprise funds, the amounts represent payments due to benefit claimants and employers for tax overpayments in the Unemployment Compensation Fund (major) and to participants of the Prepaid529 Program in the Virginia College Savings Plan (major).

In the private purpose trust funds, the amounts represent payments due to participants in the Invest529 Program offered by the Virginia College Savings Plan.

In the agency funds, these amounts represent funds used for employee benefits and child support enforcement, as well as accounts of inmates, residents, and patients of the Commonwealth's correctional, juvenile, veterans, and behavioral health facilities.

V. Other Liabilities

Other liabilities represent amounts owed for various governmental and proprietary activities. Some of these amounts will be paid shortly after fiscal year-end (see Note 27).

W. Claims Payable

Claims payable, reported in the proprietary funds of the primary government, represent both health and liability insurance claims payable as of June 30, 2019. This includes both actual claims submitted, as well as actuarially determined claims incurred but not reported. Claims relating to the primary government's liability insurance programs are reported in the Risk Management – internal service fund and the Risk Management – nonmajor enterprise fund. Also, health insurance claims are reported in the Health Care – internal service fund, the Local Choice Health Care – nonmajor enterprise fund and Line of Duty – internal service fund and nonmajor enterprise fund (see Notes 25.A. and 25.B.). Claims payable reported by the Virginia Commonwealth University Health System Authority (a blended component unit of the Virginia Commonwealth University – nonmajor component unit) represents estimated malpractice, workers' compensation, and medical claims payable amounts.

X. Long-term Liabilities

In the government-wide financial statements, long- term debt and other long-term obligations are reported as liabilities in the applicable governmental activities or business-type activities column. The governmental fund statements reflect the portion of long-term liabilities that will be paid from expendable resources that represent payments to employees for separations that occurred prior to June 30, 2019. The proprietary fund statements and discrete component unit statements reflect total long-term liabilities and distinguish between those portions payable within one year and those payable in future years (see Note 28).

Bond premiums and discounts are amortized over the life of the bond. Bonds payable are reported net of the applicable bond premium or discount. Bond issuance costs, excluding prepaid insurance, are expensed.

Expenditures for principal and interest payments for governmental fund general obligation bonds and revenue bonds are recognized in the Debt Service Fund

(nonmajor) when due. In the fund statements, governmental fund types recognize bond premiums and discounts, as well as bond issuance costs, during the current period. The face amount of debt issued is reported as other financing sources. Premiums received on debt issuances are reported as other financing sources while discounts on debt issuance are reported as other financing uses. Issuance costs, whether or not withheld from the actual debt proceeds received, are reported as debt service expenditures (see Note 28).

Y. Deferred Inflows of Resources

Deferred inflows of resources are an acquisition of assets by the government that is applicable to a future reporting period. Deferred inflows have a natural credit balance and, therefore decrease net position similar to liabilities (see Notes 15, 16, 17, 19, and 38).

Z. Nonspendable Fund Balances

Nonspendable fund balances indicate that portion of fund balance that cannot be spent because it is either not in spendable form or is legally or contractually required to be maintained intact.

AA. Restricted Fund Balances

Restricted fund balances are amounts that have constraints placed on the use of resources that are either (a) externally imposed by creditors (such as through debt covenants), grantors, contributors, or laws or regulations of other governments, or (b) imposed by law through constitutional provisions or enabling legislation.

BB. Committed Fund Balances

Committed fund balance includes amounts that must be spent for specific purposes that have been legislatively mandated by the Governor and General Assembly. Further action by the Governor and the General Assembly would be required to modify these commitments.

CC. Assigned Fund Balances

Assigned fund balances are amounts that are constrained by the government's intent to be used for specific purposes, but are neither restricted nor committed. Assignments are identified by Commonwealth management pursuant to the delegation of authority granted by the General Assembly and Governor specified in the Appropriation Act.

DD. Unassigned Fund Balances

Unassigned fund balance is the amount of fund balance that has not been assigned to other funds and has not been restricted, committed or assigned to specific purposes within the General Fund. The General Fund is the only fund that could potentially report a positive unassigned fund balance amount. Additionally, accrued liabilities exceed accrued assets on the modified accrual basis for the Unclaimed Property Fund (nonmajor special revenue) by $62.6 million. As there are no assigned balances in the fund to offset the negative fund balance restricted for specific purposes, the amount is reported as Unassigned Fund Balance.

EE. Cash Management Improvement Act

Included in Amounts Due to Other Governments is the Commonwealth's Cash Management Improvement Act (CMIA) interest liability to the federal government, which is calculated in accordance with the interest calculation and exchange provisions of the Federal Cash Management Improvement Act of 1990. The Commonwealth's interest liability is subject to review and final confirmation by the Bureau of the Fiscal Service (BFS) of the U.S. Treasury. If required, the payment is to be made on March 31 of the following year. Payment will be made from a sum sufficient appropriation authorized for this purpose by the Appropriation Act. The CMIA interest rate of exchange is based by law on the average of the bond equivalent rates of 13-week Treasury Bills auctioned during the annual reporting period as calculated by BFS.

FF. Investment Income

In accordance with GASB Statement No. 31, *Accounting and Financial Reporting for Certain Investments and for External Investment Pools*, all investment income reported in the accompanying financial statements include changes in the fair value of investments and the amount reported may be negative. Additionally, the Commonwealth's policy is to record all unrealized gains or losses for the State Treasurer's Portfolio in the General Fund.

GG. Intrafund Eliminations

Eliminations have been incorporated into the report to eliminate intrafund transactions within the related fund type. These eliminations prevent overstatement of financial activity.

HH. Interfund Activity

Generally, the effect of interfund activity has been eliminated from the government-wide statements, with the exception of interfund services provided and used between functions. Elimination of these activities would distort the direct costs and program revenues for the functions.

In the fund financial statements, transfers represent the movement of resources between funds. For example, transfers are recorded when a fund receives revenue and subsequently disburses the resources to another fund for expenditure.

2. RESTATEMENT OF BEGINNING BALANCES

The government-wide beginning balance restatements resulted from the following:

Government-wide Activities

Governmental Activities

- The Virginia Department of Transportation (VDOT) misstated deferred outflows of resources related to debt defeasance by $73.7 million which overstated prior year Net Position.
- Capital Asset balances were restated by a total of $2.7 million. This resulted primarily from errors by various agencies resulting in a $38.4 million overstatement of prior year Construction-in-Progress balances, offset by a $35.7 million understatement of prior year net depreciable capital assets.
- The Debt Service Fund (nonmajor) has been restated by $17.1 million to include loan receivables related to selected debt service payments previously omitted by VDOT.

Fund Statements

- The Debt Service Fund (nonmajor governmental) has been restated by $1.8 million as previously discussed.

Component Units

The government-wide and fund statements were restated for the following.

- The Virginia Commonwealth University (nonmajor) and George Mason University (nonmajor) have restated the beginning balance by $32.1 million, to include the following discrete component units of the universities: Dentistry@VCU and Mercatus Center, Inc., respectively. Previously, these entities were not considered discrete component units of the universities.

Beginning Balance Restatement

(Dollars in Thousands)

	Balance as of June 30, 2018	Change in Reporting Entity	Correction of Prior Year Errors	Balance as of June 30, 2018, as restated
Government-wide Activities:				
Primary Government:				
Governmental Activities	$ 22,330,226	$ —	$ (59,338)	$ 22,270,888
Business-type Activities	2,066,478	—	—	2,066,478
Total Primary Government	$ 24,396,704	$ —	$ (59,338)	$ 24,337,366
Component Units	$ 27,816,792	$ 32,131	$ —	$ 27,848,923
Fund Statements:				
Governmental Funds				
Major Governmental Funds:				
General	$ 843,454	$ —	$ —	$ 843,454
Special Revenue Funds:				
Commonwealth Transportation	2,327,278	—	—	2,327,278
Federal Trust	107,533	—	—	107,533
Literary	1,035	—	—	1,035
Nonmajor Governmental Funds	2,100,441	—	1,816	2,102,257
Total Governmental Funds	$ 5,379,741	$ —	$ 1,816	$ 5,381,557
Component Units:				
Virginia Housing Development Authority	$ 3,283,537	$ —	$ —	$ 3,283,537
Virginia Public School Authority	(10,059)	—	—	(10,059)
Virginia Resources Authority	1,615,168	—	—	1,615,168
Virginia College Building Authority	(4,071,206)	—	—	(4,071,206)
Nonmajor Component Units	26,999,352	32,131	—	27,031,483
Total Component Units	$ 27,816,792	$ 32,131	$ —	$ 27,848,923

3. NET POSITION/FUND BALANCE CLASSIFICATIONS

Fund Balance

GASB Statement No. 54, *Fund Balance Reporting and Governmental Fund Type Definitions,* improved the reporting of fund balance so that classifications are more easily understood and can be applied consistently between information reported in the government-wide financial statements and the governmental fund financial statements. The governmental fund balance classifications defined in GASB Statement No. 54 are: Nonspendable, Restricted, Committed, Assigned, and Unassigned.

Nonspendable fund balance includes inventories, prepaid items, and the principal of a permanent fund. These funds are not available for expenditure in the current or following period.

Restricted fund balance includes amounts that have constraints placed on the use of resources by the Constitution of Virginia or a party external to the Commonwealth.

Committed fund balance includes amounts that must be spent for specific purposes that have been legislatively mandated by the Governor and General Assembly.

Assigned fund balance represents amounts that the Commonwealth has identified for planned purposes but for which the intended use is not legislatively mandated. The assignments are identified by Commonwealth management pursuant to the delegation of authority granted by the General Assembly and Governor specified in the Appropriation Act. The following schedule includes committed and assigned amounts that share the same purpose and title. The distinction between these classifications results from whether there is a statutory restriction on certain amounts contained within the fund.

Unassigned fund balance for the General Fund (major) is the residual classification. The General Fund is the only fund that could potentially report a positive unassigned fund balance amount. Additionally, a negative amount indicates that restricted and committed amounts exceed the available modified accrual basis fund balance. Unassigned fund balance for the Unclaimed Property Fund (nonmajor special revenue) indicates that the amount restricted for specific purposes exceeds the modified accrual basis fund balance available for these specific purposes.

The governmental fund balance classifications and amounts as of June 30, 2019, are shown in the following table.

Governmental Fund Balance Classifications

(Dollars in Thousands)

	General Fund	Commonwealth Transportation	Federal Trust	Literary	Nonmajor Governmental	Total
Nonspendable						
Inventory	$ 28,797	$ 95,483	$ 23,813	$ —	$ 7,174	$ 155,267
Prepaid Items	73,888	14,453	6,136	—	9,964	104,441
Permanent Funds	—	—	—	—	39,073	39,073
Total Nonspendable	102,685	109,936	29,949	—	56,211	298,781
Restricted						
Agriculture and Forestry	—	—	—	—	9,181	9,181
Capital Projects/Construction/Capital Acquisition	—	—	—	—	1,366,654	1,366,654
Contract and Debt Administration	—	—	—	—	656	656
Debt Service	—	—	—	—	45,694	45,694
Economic and Technological Development	—	—	—	—	37	37
Educational and Training Programs	—	—	—	—	3,480	3,480
Environmental Quality and Natural Resource Preservation	—	—	—	—	22,639	22,639
Gifts and Grants	—	6	97,726	—	2,648	100,380
Government Operations:						
Administrative Services	—	—	—	—	1,814	1,814
Health and Public Safety	—	—	—	—	73,059	73,059
Literary Fund	—	—	—	17,834	—	17,834
Lottery Proceeds Fund	37,659	—	—	—	—	37,659
Revenue Stabilization Fund	629,654	—	—	—	—	629,654
Transportation Activities	—	501,614	—	—	—	501,614
Virginia Water Supply Assistance Grant Fund	2,154	—	—	—	—	2,154
Total Restricted	669,467	501,620	97,726	17,834	1,525,862	2,812,509
Committed						
Agriculture and Forestry	23	—	—	—	24,091	24,114
Amount Required for Mandatory Reappropriation	108,175	—	—	—	—	108,175
Amount Required for Reappropriation of 2019 Unexpended Balances for Capital Outlay and Restoration Projects	6,739	—	—	—	—	6,739
Capital Projects/Construction/Capital Acquisition	1,895	—	—	—	677	2,572
Central Capital Planning Fund	7,023	—	—	—	—	7,023
Commonwealth's Development Opportunity Fund	26,051	—	—	—	—	26,051
Contract and Debt Administration	—	10,554	—	—	805	11,359
Economic and Technological Development	121,911	—	—	—	46,517	168,428
Educational and Training Programs	1,159	1,597	—	—	9,202	11,958
Environmental Quality and Natural Resource Preservation	28,587	—	—	—	106,173	134,760
Government Operations:						
Administrative Services	94	—	—	—	89,851	89,945
Legislative Services	—	—	—	—	228	228
Health and Public Safety	23,066	4,493	—	—	254,187	281,746
Local Government Fiscal Distress	750	—	—	—	—	750
Natural Disaster Sum Sufficient	21,328	—	—	—	—	21,328
Regulatory Oversight	—	—	—	—	141,849	141,849
Revenue Reserve Fund	502,590	—	—	—	—	502,590
Taxpayer Relief Fund	30,684	—	—	—	—	30,684
Transportation Activities	—	2,254,518	—	—	4,410	2,258,928
Virginia Communication Sales and Use Tax	5,940	—	—	—	—	5,940
Virginia Health Care Fund	53,614	—	—	—	—	53,614
Virginia Water Quality Improvement Fund	34,337	—	—	—	—	34,337
Virginia Water Quality Improvement Fund-Part A	87,645	—	—	—	—	87,645
Virginia Water Quality Improvement Fund-Part B	33,139	—	—	—	—	33,139
Total Committed	1,094,750	2,271,162	—	—	677,990	4,043,902
Assigned						
Agriculture and Forestry	—	—	—	—	43	43
Economic and Technological Development	—	—	—	—	2,193	2,193
Educational and Training Programs	—	—	—	—	8,814	8,814
Environmental Quality and Natural Resource Preservation	—	—	—	—	7,604	7,604
Government Operations:						
Administrative Services	—	—	—	—	530	530
Health and Public Safety	—	—	—	—	14,826	14,826
Regulatory Oversight	—	—	—	—	3	3
Total Assigned	—	—	—	—	34,013	34,013
Unassigned	(264,229)	—	—	—	(62,620)	(326,849)
Total Fund Balance	$ 1,602,673	$ 2,882,718	$ 127,675	$ 17,834	$ 2,231,456	$ 6,862,356

4. DEFICIT FUND BALANCES/NET POSITION

The Unclaimed Property (nonmajor special revenue fund) ended the year with a deficit net position balance of $62.1 million. This deficit was a result of the accrued liabilities estimated to be paid to claimants exceeding the assets remaining in the fund as of June 30.

The Virginia Lottery (major enterprise fund), Alcoholic Beverage Control (nonmajor enterprise fund), the Virginia Museum of Fine Arts Gift Shop (nonmajor enterprise fund), the Personnel Management Information System Fund (internal service fund), and the Payroll Service Bureau (internal service fund) ended the year with deficit net positions of $32.2 million, $90.7 million, $734,430, $412,280, and $2.3 million, respectively. This was solely attributable to the net pension liability resulting from GASB Statement No. 68, *Accounting and Financial Reporting for Pensions – an amendment of GASB Statement No. 27,* and the other postemployment benefits (OPEB) obligation resulting from GASB Statement No. 75, *Accounting and Financial Reporting for Postemployment Benefits Other Than Pensions.*

The Risk Management Fund (nonmajor enterprise fund) ended the year with a deficit net position balance of $14.7 million. The deficit was a result of previous increases in claims liability for constitutional officers' programs exceeding premiums collected. Further, there are noncurrent liabilities related to net pension liabilities and other postemployment benefit obligations.

The Department of General Services' Consolidated Laboratory Services Fund (nonmajor enterprise fund) ended the year with a deficit net position balance of $5.1 million. The deficit was a result of increased costs for the Newborn Screening Program and noncurrent liabilities related to net pension liabilities and other post employment benefit obligations.

The Department of Environmental Quality's Title V Air Pollution Permit Fund (nonmajor enterprise fund) ended the year with a deficit net position balance of $10.2 million. The deficit was a result of accumulated deficits from prior years for decreasing revenues for Title V permits. Further, there are noncurrent liabilities related to net pension liabilities and other postemployment benefit obligations.

The Virginia Information Technologies Agency (internal service fund) ended the year with a deficit net position balance of $26.3 million. The deficit was a result of accumulated deficits from prior years, additional expenses for the transition from Northrup Grumman to multiple suppliers, and noncurrent liabilities related to net pension liabilities and other postemployment benefit obligations.

The Enterprise Application Fund (internal service fund) ended the year with a deficit net position balance of $15.2 million. The deficit was a result of working capital advances for the Human Capital Management replacement project and noncurrent liabilities related to net pension liabilities and other postemployment benefit obligations.

The Property Management Fund (internal service fund) ended the year with a deficit net position balance of $19.9 million. This deficit was the result of the purchase of a leasehold interest in a state-owned building in fiscal year 2006. Also, the Property Management Fund incurred additional capital lease liabilities due to transfers of leases from other state agencies in fiscal year 2009. Additionally, in fiscal year 2012, the Property Management Fund entered into three energy leases where the asset is reported in the governmental fund and the liability is recorded in the internal service fund. In fiscal year 2018, the Property Management Fund entered into a new energy performance contract where the asset is reported in the governmental fund and the liability is recorded in the internal service fund. Further, there are noncurrent liabilities related to net pension liabilities and other postemployment benefit obligations.

The Risk Management Fund (internal service fund) ended the year with a deficit net position balance of $570.5 million. The deficit was the result of the Worker's Compensation Program having estimated claims payable exceeding the available equity in the fund. Claims are paid on a pay-as-you-go basis. To the extent that claims exceed current resources, they will ultimately become a liability of the fund from which the claim originated. Further, there are noncurrent liabilities related to net pension liabilities and other postemployment benefit obligations.

The Virginia College Building Authority (major component unit) ended the year with a deficit net position balance of $4.3 billion. This deficit occurs because the Authority issued bonds for the 21st Century College and Equipment programs subject to future appropriations from the General Fund of the Commonwealth without any other security. These future appropriations are not included as assets of the Authority.

The Southern Virginia Higher Education Center (nonmajor component unit) ended the year with a deficit net position balance of $1.2 million. This deficit is solely attributable to net pension liabilities and other postemployment benefit obligations.

The Virginia Economic Development Partnership (nonmajor component unit) ended the year with a deficit net position balance of $4.6 million. This deficit is related to net pension liabilities and other postemployment benefit obligations.

The Virginia Tourism Authority (nonmajor component unit) ended the year with a deficit net position balance of $1.8 million. This deficit is related to net pension liabilities and other postemployment benefit obligations.

5. REVENUE STABILIZATION FUND

In accordance with Article X, Section 8 of the *Constitution of Virginia*, the amount estimated as required for deposit to the Revenue Stabilization Fund must be appropriated for that purpose by the General Assembly.

Under the provisions of Article X, Section 8 of the Constitution of Virginia, a deposit of $262.9 million is required during fiscal year 2020 based on fiscal year 2018 revenue collections. Further, a deposit of $77.4 million is required during fiscal year 2021 based on fiscal year 2019 revenue collections reduced by the taxpayer refunds required by Chapter 854. For additional information, see Note 7. Both the $262.9 million and the $77.4 million deposits are reported as restricted components of fund balance.

In addition, Chapter 854, 2019 Acts of Assembly, appropriates an additional $97.5 million to be deposited in fiscal year 2020.

Section 2.2-1829(b) of the *Code of Virginia* requires an additional deposit into the Fund when specific criteria have been met. No such deposit is required since the specified criteria were not met for fiscal year 2019.

The Revenue Stabilization Fund has principal and interest on deposit of $289.3 million restricted as a part of the General Fund balance. Pursuant to the constitutional amendment of Article X, Section 8, effective January 1, 2011, the amount on deposit cannot exceed 15.0 percent of the Commonwealth's average annual tax revenues derived from taxes on income and retail sales for the preceding three fiscal years. As of June 30, 2019, the Constitutional maximum is $2.8 billion.

6. REVENUE RESERVE FUND

Section 2.2-1831.2 of the *Code of Virginia* established the Revenue Reserve Fund. As of June 30, 2019, the fund has principal and interest on deposit of $502.6 million committed as a part of the General Fund balance.

This fund was established to mitigate certain anticipated revenue shortfalls when appropriations based on previous revenue forecasts exceed expected revenues in subsequent forecasts. Annually, revenue collections are evaluated to determine whether deposits are required to the fund. While no statutory deposit is required when there is a constitutionally mandated deposit to the Revenue Stabilization Fund, the Department of Planning and Budget has identified a planned voluntary deposit during fiscal year 2020 of $270.8 million.

Pursuant to Section 2.2-1831.3 of the *Code of Virginia*, any required annual deposit cannot exceed 1.0 percent of the total general fund revenues for the prior fiscal year. Additionally, the combined balance of the Revenue Reserve Fund and the Revenue Stabilization Fund cannot exceed 15.0 percent of the total Commonwealth's average annual tax revenues derived from taxes on income and retail sales for the preceding three fiscal years. As of June 30, 2019, the calculated maximum balance for the Revenue Reserve Fund is $2.5 billion.

7. TAXPAYER RELIEF FUND

The Taxpayer Relief Fund was established in accordance with Chapter 854, 2019 Acts of Assembly, Item 3-5.21. The revenues generated by the individual reform provisions of the federal Tax Cuts and Jobs Act that exceed revenue collections reasonably expected due to general economic growth absent the federal policy change, less revenues needed to implement the policy changes, for fiscal years 2019 through 2025, will be reported in this fund. For the fiscal year ended June 30, 2019, $455.0 million was deposited to the fund. Pursuant to the fourth enactment of Chapters 17 and 18, 2019 Acts of Assembly, certain taxpayers received refunds totaling $424.3 million subsequent to June 30. This amount is reported as a liability in the accompanying financial statements. The remaining balance of $30.7 million is committed as part of the General Fund balance.

8. CASH, CASH EQUIVALENTS, AND INVESTMENTS

As of June 30, 2019, the carrying amount of cash for the primary government (including pension and other employee benefit trust funds) was $5.6 billion and the bank balance was $372.6 million. The carrying amount of cash for component units was $2.0 billion and the bank balance was $841.1 million. Cash equivalents are investments with an original maturity of 90 days or less. Cash and cash equivalents for foundations (component units) totaled $504.2 million as of year-end. A portion of this amount and some balances during the year exceeded Federal Deposit Insurance Corporation (FDIC) insurance coverage. Foundation investments are disclosed in the Interest Rate Risk section of this note. Note 8 includes investment derivatives for the primary government and excludes derivatives for the component units. For additional information concerning derivative instruments, see Note 16.

For purposes of this note, primary government includes governmental, business-type activities, and fiduciary funds. The deposits of the primary government and the component units, excluding foundations (component units), are secured in accordance with the provisions of the Virginia Security for Public Deposits Act, Section 2.2- 4400 et seq. of the *Code of Virginia*. The act requires any public depository that receives or holds public deposits to pledge collateral to the Treasury Board to cover public deposits in excess of Federal deposit insurance. The required collateral percentage is determined by the Treasury Board and ranges from 50.0 percent to 100.0 percent for financial institutions choosing the pooled method of collateralization, and from 105.0 percent to 130.0 percent for financial institutions choosing the dedicated method of collateralization. As stated in Note 1.FF, unrealized gains or losses for the State Treasurer's Portfolio are recorded in the General Fund. Public Depositors are required to secure their deposits pursuant to several applicable provisions of the law.

The Local Government Investment Pool Act, Section 2.2-4600 of the *Code of Virginia*, created the Local Government Investment Pool (Pool) program for the benefit of public entities of the Commonwealth. The Treasury Board of Virginia is granted administration of the Local Government

Investment Pool (LGIP) and Local Government Investment Pool – Extended Maturity (LGIP EM) on behalf of the participating public entities of the Commonwealth. Participation in this pool is voluntary. Both LGIP and LGIP EM offer two professionally managed investment portfolios in accordance with the Investment of Public Funds Act. The LGIP portfolio is a diversified portfolio structured to provide public entities an investment alternative that seeks to minimize the risk of principal loss while offering daily liquidity, a stable Net Asset Value (NAV), and a competitive rate of return. The LGIP is not registered with the Securities Exchange Commission (SEC) as an investment company. The LGIP EM portfolio is a diversified portfolio with fluctuating NAV structured to provide an investment alternative to public entities who wish to invest monies not needed for daily liquidity. The fair value of the Commonwealth's position in the Pool is the same as the value of the Pool shares for all except for the LGIP EM whose shares fluctuate with changes in the market value of the portfolio.

Certain deposits are held by trustees in accordance with the Trust Subsidiary Act, Section 6.2-1057 of the *Code of Virginia*. The act requires that cash held by trustees while awaiting investment or distribution is not to be used by an affiliate bank of the trustee in the conduct of its business unless the affiliate bank delivers securities to the trust department as collateral that is at least equal to the fair value of the trust funds held on deposit in excess of amounts insured by the FDIC.

The Commonwealth is authorized, in accordance with the guidelines set forth in Section 2.2-4500 et seq. of the *Code of Virginia*, to invest public funds in the following:

- U.S. Treasury and agency securities
- Corporate debt securities
- Asset–backed securities
- Mortgage–backed securities
- Municipal securities
- AAA rated obligations of foreign governments
- Bankers' acceptances and bank notes
- Negotiable certificates of deposit
- Repurchase agreements
- Money market funds

Permitted investments include agency mortgage-backed securities, corporate or private label mortgage-backed securities, and asset-backed securities which by definition usually expose the investor to prepayment risk. Prepayment risk, or the prepayment option granted the borrower, can create uncertainty concerning cash flows, can affect the price of the security causing negative convexity, and can expose the investor to reinvestment risk. Similarly, many agency and corporate securities are callable after some predetermined date at a predetermined price. The call options in regular agency debentures and some corporate securities can be open ended and may significantly impact cash flows, security pricing, and reinvestment risks of these securities.

As of June 30, 2019, the State Treasurer held no security that was in default as to principal or interest and had no securities that were out of compliance with guidelines.

Public funds held by the Commonwealth, public officers, municipal corporations, political subdivisions, and any other public body of the Commonwealth shall be held in trust for the citizens of the Commonwealth. Any investment of such funds shall be made solely in the interest of the citizens of the Commonwealth and with the care, skill, prudence, and diligence under the circumstances then prevailing that a prudent person acting in a like capacity and familiar with such matters would use in the conduct of an enterprise of a like character and with like aims.

Certain investments held in trust by the State Treasurer in accordance with bond indentures and resolutions may have more restrictive investment policies. Investment policies of component units are established by the entity's governing boards.

The information presented for the external investment pools was obtained from audited financial statements. Copies of the LGIP and LGIP EM report may be obtained from the Department of the Treasury website at www.trs.virginia.gov.

The Board of Trustees (the Board) of the Virginia Retirement System (the System) (part of primary government) has full power to invest and reinvest the trust funds in accordance with Section 51.1-124.30 of the *Code of Virginia*, as amended. This section requires the Board to discharge its duties solely in the interests of members, retirees, and beneficiaries. It also requires the Board to invest the assets with the care, skill, prudence, and diligence under the circumstances then prevailing that a prudent person acting in a like capacity and familiar with such matters would use in the conduct of an enterprise of a like character and with like aims. The Board must also diversify such investments so as to minimize the risk of large losses, unless under the circumstances, it is clearly prudent not to do so. The Board does not have investment policies that place specific restrictions on investments related to custodial risk, interest rate risk, credit risk, or foreign currency risk. The System's investment portfolio is intended to be managed through diversification and prudent judgment, rather than through specific policy restrictions.

Custodial Credit Risk

Custodial credit risk for deposits is the risk that, in the event of a depository bank failure, the Commonwealth may not be able to recover deposits or collateral securities that are in the possession of an outside party. Custodial credit risk for investments is the risk that, in the event of the failure of the counterparty, the Commonwealth may not be able to recover the value of its investment or collateral securities that are in the possession of an outside party.

Policies related to custodial credit risk pertaining to the Commonwealth's securities lending program are found in the securities lending section of this note.

As of June 30, 2019, the primary government (excluding pension and other employee benefit trust funds) had $766,124 in bank balances that were uninsured and uncollateralized. There is no deposit policy that addresses custodial credit risk.

As of June 30, 2019, investment securities for the System (excluding cash equivalents and repurchase agreements held as securities lending collateral) were registered and

held in the name of the System for the benefit of the System's trust funds and were not exposed to custodial credit risk. It is the standard practice and policy of the System, through the relevant provisions in its contracts and agreements with third parties, to minimize all known custodial credit risks.

As of June 30, 2019, component units had $73.6 million in bank balances that were uninsured and uncollateralized, and $16.2 million in bank balances that were uninsured and collateralized with securities held by the pledging financial institution. In addition, the Virginia Housing Development Authority (major component unit) held $293.7 million of investments, primarily commercial paper, that were uninsured and held by the counterparty as of June 30, 2019.

Interest Rate Risk

Interest rate risk is the risk that changes in interest rates of debt investments will adversely affect the fair value of an investment. As discussed in Note 1.F., the Commonwealth discloses the risk for its debt investments using the segmented time distribution method for the primary government (excluding the Virginia College Savings Plan's Prepaid529 and Invest529 programs, and pension and other employee benefit trust funds) and component units, and the effective duration method for Virginia College Savings Plan (Prepaid529 and Invest529 programs) and the System (pension and other employee benefit trust funds).

The State Treasurer's guidelines limit the following maximum durations for any single security of the following investment types:

Security Type	Maximum Duration
Corporate Security	15 years
Asset-Backed Securities	5 years
Sovereign Government Obligations (excluding U.S.)	5 years
Negotiable Certificates of Deposit and Negotiable Bank Notes	5 years

The State Treasurer's guidelines further describe target durations for the overall general account portfolio of 1.7 years.

The Virginia College Savings Plan (Virginia529) manages the risk for fixed income investment securities held in Prepaid529 and Invest529 programs using the effective duration methodology. Virginia529's Statements of Investment Policy and Guidelines do not limit investment maturities as a mean of managing its exposure to fair value losses arising from increasing interest rates. Although not an explicit requirement, duration of fixed income portfolios, if applicable, is expected to be within 20.0 percent of each portfolio's designated benchmark.

The System also manages the risk within its portfolio using the effective duration methodology. It is widely used in the management of fixed income portfolios in that it quantifies, to a much greater degree, the risk of interest rate changes. The methodology takes into account optionality on bonds and scales the risk of price changes on bonds depending on the degree of change in rates and the slope of the yield curve. All of the System's fixed- income portfolios are managed in accordance with the System's investment guidelines, most of which are specific as to the degree of interest rate risk that can be taken.

As of June 30, 2019, the System's investments included $2.4 billion, primarily in corporate bonds and notes, U.S. Treasury and agency securities, supranational and non-U.S. Government bonds and notes, municipal securities, and collateralized mortgage obligations, which are highly sensitive to interest rate fluctuations in that they are subject to early payment in a period of declining interest rates and/or because they have an option adjusted duration of greater than ten years. The resulting reduction in expected total cash flows affects the fair value of these securities.

As of June 30, 2019, the Commonwealth's investments subject to interest rate risk had the following maturities and weighted average effective durations.

Primary Government Investments

(Excluding Virginia College Savings Plan and Pension and Other Employee Benefit Trust Funds)

(Dollars in Thousands)

Investment Type	June 30, 2019	Investment Maturities (in years) Less Than 1	1-5	6-10	More Than 10
Debt Securities					
U. S. Treasury and Agency Securities	$ 803,779	$ 186,995	$ 414,067	$ 122,344	$ 80,373
Corporate Bonds and Notes	662,746	230,157	255,174	122,077	55,338
Supranational and Non-U.S. Government Bonds and Notes	229,035	226,750	2,285	—	—
Commercial Paper	4,222,646	4,222,646	—	—	—
Negotiable Certificates of Deposit	4,875,634	4,867,122	8,512	—	—
Repurchase Agreements	2,285,067	2,285,067	—	—	—
Municipal Securities	19,224	2,135	3,222	—	13,867
Asset-Backed Securities	210,286	241	93,977	34,566	81,502
Agency Mortgage-Backed Securities	249,263	455	13,839	17,008	217,961
Agency Unsecured Bonds and Notes	3,973,859	2,992,399	924,689	54,304	2,467
Mutual and Money Market Funds (Includes SNAP)	1,263,617	1,263,617	—	—	—
Fixed Income and Commingled Funds	7,598	—	7,598	—	—
Total	$ 18,802,754	$ 16,277,584	$ 1,723,363	$ 350,299	$ 451,508

Primary Government - Virginia College Savings Plan Investments

(Dollars in Thousands)

Investment Type	Prepaid529 (Major Enterprise Fund) June 30, 2019	Prepaid529 Weighted Avg. Effective Duration (in years)	Invest529 (Private Purpose Trust Fund) June 30, 2019	Invest529 Weighted Avg. Effective Duration (in years)
Debt Securities				
U. S. Treasury and Agency Securities	$ 247	6.3	$ —	—
Corporate Bonds and Notes	454,950	2.0	117,503	3.9
Convertible Bonds and Notes	117,440	3.3	—	—
Asset Backed Securities	78,136	1.4	10,753	0.1
Agency Mortgage Backed Securities	30,859	1.7	—	—
Mutual and Money Market Funds	64,918	0.1	67,087	<0.1
Guaranteed Investment Contracts	125,734	3.0	1,115,737	3.1
Fixed Income and Commingled Funds*	297,669	1.7	815,843	6.3
International and Emerging Markets Funds	280,961	7.6	243,665	5.7
Total	$ 1,450,914	3.1	$ 2,370,588	4.5

*Effective duration is calculated using a methodology that takes into account the duration impact of equity warrants and rate-sensitive instruments.

Primary Government - Virginia Retirement System Investments
(Pension and Other Employee Benefit Trust Funds)
(Dollars in Thousands)

Investment Type	June 30, 2019	Weighted Avg. Effective Duration (in years)
Debt Securities		
U. S. Treasury and Agency Securities	$ 4,181,473	6.0
Corporate Bonds and Notes	10,532,729	3.4
Collateralized Mortgage Obligations	415,354	2.2
Commercial Mortgages	439,299	3.9
Supranational and Non-U.S. Government Bonds and Notes	2,144,283	6.5
Mutual and Money Market Funds	168,196	4.5
Commercial Paper	1,990,765	0.1
Negotiable Certificates of Deposit	435,576	0.2
Repurchase Agreements	1,401,054	< 0.1
Municipal Securities	138,049	6.2
Asset Backed Securities	907,154	1.8
Agencies	3,494,047	2.0
Fixed Income and Commingled Funds	1,346,297	5.1
Fixed Income Derivatives	12,637	21.8
Time Deposits	116,000	< 0.1
Debt Securities - No Effective Duration		
Corporate Bonds and Notes	96,090	N/A
Commercial Mortgages	1,972	N/A
Supranational and Non-U.S. Government Bonds and Notes	1,550	N/A
Mutual and Money Market Funds	20,393	N/A
Asset Backed Securities	17,238	N/A
Agencies	46,495	N/A
Fixed Income and Commingled Funds	15	N/A
Fixed Income Derivatives	4,412	N/A
Total	$ 27,911,078	3.0

Component Unit Investments
(Dollars in Thousands)

Investment Type	June 30, 2019	Investment Maturities (in years)			
		Less Than 1	1-5	6-10	More Than 10
Debt Securities					
U. S. Treasury and Agency Securities	$ 755,483	$ 183,299	$ 230,470	$ 158,788	$ 182,926
Supranational and Non-U.S. Government Bonds and Notes	37,262	37,262	—	—	—
Corporate Bonds and Notes	499,534	151,939	323,777	20,937	2,881
Commercial Paper	348,484	348,484	—	—	—
Negotiable Certificates of Deposit	63,246	48,799	14,447	—	—
Repurchase Agreements	402,650	402,650	—	—	—
Municipal Securities	201,967	8,653	61,633	75,547	56,134
Asset-Backed Securities	284,861	17,954	227,695	16,913	22,299
Agency Unsecured Bonds and Notes	337,163	307,777	29,386	—	—
Agency Mortgage-Backed Securities	762,910	9,004	68,654	9,063	676,189
Mutual and Money Market Funds (Includes SNAP)	1,043,500	938,447	101,178	3,875	—
Guaranteed Investment Contracts	36,038	2,520	16,537	15,020	1,961
Fixed Income and Commingled Funds	124,271	7,837	65,241	—	51,193
Other Debt Securities	21,814	21,598	146	70	—
Total	$ 4,919,183	$ 2,486,223	$ 1,139,164	$ 300,213	$ 993,583

Foundation Investments
(Dollars in Thousands)

Investment Type	Fair Value
U.S. Treasury and Agency Securities	$ 856,844
Common & Preferred Stocks	1,049,178
Corporate Bonds and Notes	289,094
Negotiable Certificates of Deposit	21,275
Municipal Securities	16,005
Repurchase Agreements	376,563
Agency Mortgage Backed	18,939
Mutual and Money Market Funds	794,452
Bankers' Acceptance	95,243
Real Estate	505,000
Index Funds	271,908
Hedge Funds	2,369,604
Partnerships	2,782,986
Venture Capital	642,754
Other	5,260,172
Total	$ 15,350,017

Note: Foundations represent FASB reporting entities defined in Note 1.B. A portion of these amounts is reported at cost rather than fair value because fair value was not available or readily determinable.

Credit Risk

Credit risk is the risk that an issuer or other counterparty to an investment will not fulfill its obligations. The State Treasurer places emphasis on securities of high credit quality and marketability. At the time of purchase, the following limitations are in place:

- Bankers acceptances: P-1, Moody's Investors Service (Moody's) and A-1, Standard & Poor's (S&P)
- Negotiable CDs and bank notes:
  - maturities of one year or less: P-1, Moody's and A-1, S&P
  - maturities over one year: Aa, Moody's and AA, S&P
- Commercial paper: P-1, Moody's and A-1, S&P
- Corporate Notes and Bonds: A3/A- or equivalent by two nationally recognized rating agencies, one of which must be Moody's or S&P. However, each external investment manager may invest up to 10.0 percent of their portfolio in Baa2/BBB rated bonds which, at a minimum, must be rated Baa2/BBB by two nationally recognized rating agencies, one of which must be either Moody's or S&P.
- Municipal Bonds: A3/A- or equivalent by two nationally recognized rating agencies, one of which must be Moody's or S&P
- Asset-backed securities: AAA by two nationally recognized rating agencies, one of which must be Moody's or S&P
- Dollar denominated obligations of sovereign governments: Aaa, Moody's and AAA, S&P
- Commercial Mortgage-Backed Securities (CMBS) and Collateralized Mortgage Obligations (CMOs): AAA by two nationally recognized rating agencies, one of which must be Moody's or S&P

The System's policy for credit risk is based on the concept of a risk budget rather than specific limitations related to the rating of an individual security. The System's risk budget is allocated among the different investment strategies.

Credit risk for derivative instruments held by the Commonwealth results from counterparty risk assumed by the Commonwealth. This is essentially the risk that the borrower will be unable to meet its obligation. Information regarding the Commonwealth's credit risk related to derivatives is found in Note 16.

Policies related to credit risk pertaining to the Commonwealth's securities lending program are found in the Securities Lending section of this note.

The following tables present the credit ratings for the investments of the primary government (excluding pension and other employee benefit trust funds), the System (pension and other employee benefit trust funds), and component units as of June 30, 2019. The ratings presented are using Moody's, S&P, and Fitch rating scales. They are displayed from short-term to long-term.

Primary Government (Excluding Pension and Other Employee Benefit Trust Funds)

(Dollars in Thousands)

Investment Type (1)	P-1 / A-1 / F1	Percent of Portfolio	P-2 / A-2 / F2	Percent of Portfolio	P-3 / A-3 / F3	Percent of Portfolio	Aaa / AAA
Agency Mortgage Backed Securities	$ —	0.0%	$ —	0.0%	$ —	0.0%	$ 633
Agency Unsecured Bonds and Notes	2,458,636	11.6%	—	0.0%	—	0.0%	8,941
Asset Backed Securities	—	0.0%	—	0.0%	279	0.0%	237,732
Commercial Paper	4,222,646	19.8%	—	0.0%	—	0.0%	—
Convertible Bonds and Notes	—	0.0%	7,433	0.1%	4,102	0.0%	—
Corporate Bonds and Notes	160,467	0.8%	275	0.0%	192	0.0%	5,161
Fixed Income and Commingled Funds	—	0.0%	—	0.0%	—	0.0%	—
Guaranteed Investment Contracts	—	0.0%	—	0.0%	—	0.0%	—
International and Emerging Markets Funds	—	0.0%	—	0.0%	—	0.0%	—
Municipal Securities	—	0.0%	—	0.0%	—	0.0%	629
Mutual and Money Market Funds (Includes SNAP)	—	0.0%	—	0.0%	—	0.0%	1,391,473
Negotiable Certificates of Deposit	4,867,122	22.9%	—	0.0%	—	0.0%	—
Repurchase Agreements	525,000	2.5%	—	0.0%	—	0.0%	—
Supranational and Non-U.S. Government Bonds and Notes	199,777	0.9%	—	0.0%	—	0.0%	29,258
Total	$ 12,433,648	58.5%	$ 7,708	0.1%	$ 4,573	0.0%	$ 1,673,827

Primary Government – Virginia Retirement System (Pension and Other Employee Benefit Trust Funds)

(Dollars in Thousands)

Investment Type (1)	P-1 / A-1 / F1	Percent of Portfolio	P-2 / A-2 / F2	Percent of Portfolio	Aaa / AAA	Percent of Portfolio	Aa / AA
Corporate Bonds and Notes	$ 244,718	1.1%	$ —	0.0%	$ 38,705	0.2%	$ 1,341,423
Collateralized Mortgage Obligations	—	0.0%	—	0.0%	168,026	0.7%	84,963
Commercial Mortgages	—	0.0%	—	0.0%	323,589	1.4%	44,176
Supranational and Non-U.S. Government Bonds and Notes	—	0.0%	—	0.0%	167,679	0.7%	59,534
Mutual and Money Market Funds	—	0.0%	—	0.0%	—	0.0%	—
Commercial Paper	444,897	2.0%	1,514,033	6.7%	—	0.0%	—
Negotiable Certificates of Deposit	75,380	0.3%	15,000	0.1%	—	0.0%	25,019
Repurchase Agreements	—	0.0%	—	0.0%	—	0.0%	—
Municipal Securities	—	0.0%	—	0.0%	10,761	0.1%	117,725
Asset Backed Securities	—	0.0%	—	0.0%	350,094	1.6%	182,387
Agencies	—	0.0%	—	0.0%	35,873	0.2%	1,808,835
Fixed Income and Commingled Funds	—	0.0%	—	0.0%	—	0.0%	2,335
Fixed Income Derivatives	—	0.0%	—	0.0%	—	0.0%	—
Time Deposits	—	0.0%	—	0.0%	—	0.0%	—
Total	$ 764,995	3.4%	$ 1,529,033	6.8%	$ 1,094,727	4.9%	$ 3,666,397

Component Units

(Dollars in Thousands)

Investment Type (1)	P-1 / A-1 / F1	Percent of Portfolio	P-2 / A-2 / F2	Percent of Portfolio	P-3 / A-3 / F3	Percent of Portfolio	Aaa / AAA
Agency Mortgage Backed Securities	$ 3,685	0.1%	$ —	0.0%	$ —	0.0%	$ 700,755
Agency Unsecured Bonds and Notes	44,812	1.1%	—	0.0%	—	0.0%	292,351
Asset Backed Securities	4,369	0.1%	—	0.0%	149	0.0%	255,431
Commercial Paper	344,696	8.4%	—	0.0%	—	0.0%	—
Corporate Bonds and Notes	6,578	0.2%	9,354	0.2%	6,130	0.2%	25,424
Fixed Income and Commingled Funds	—	0.0%	—	0.0%	—	0.0%	—
Municipal Securities	—	0.0%	—	0.0%	—	0.0%	32,314
Mutual and Money Market Funds (Includes SNAP)	1,338	0.0%	—	0.0%	—	0.0%	872,394
Negotiable Certificates of Deposit	26,470	0.6%	—	0.0%	—	0.0%	—
Other Debt Securities	—	0.0%	—	0.0%	—	0.0%	—
Repurchase Agreements	14,567	0.4%	—	0.0%	—	0.0%	—
Supranational and Non-U.S. Government Bonds and Notes	—	0.0%	—	0.0%	—	0.0%	34,784
Total	$ 446,515	10.9%	$ 9,354	0.2%	$ 6,279	0.2%	$ 2,213,453

(1) Excludes investments of $1.4 billion for primary government (excluding pension and other employee benefit trust funds), $5.4 billion for the System (pension and other employee benefit trust funds), and $795.9 million for component units because obligations of the U. S. Government, obligations explicitly guaranteed by the U. S. Government, or repurchase agreements held by the VRS which are collateralized by equity securities but not considered obligations of the U.S. Government are not considered to have credit risk.

Amount by Credit Rating - Moody's / S&P / Fitch

Percent of Portfolio	Aa / AA	Percent of Portfolio	A	Percent of Portfolio	Baa / BBB	Percent of Portfolio	Less Than Investment Grade	Percent of Portfolio	Unrated	Percent of Portfolio	Grand Total
0.0%	$ 277,497	1.3%	$ —	0.0%	$ —	0.0%	$ —	0.0%	$ 1,992	0.0%	$ 280,122
0.0%	1,506,132	7.2%	10	0.0%	67	0.0%	—	0.0%	73	0.0%	3,973,859
1.1%	22,071	0.1%	16,159	0.1%	9,144	0.0%	6,218	0.0%	7,572	0.0%	299,175
0.0%	—	0.0%	—	0.0%	—	0.0%	—	0.0%	—	0.0%	4,222,646
0.0%	—	0.0%	17,096	0.1%	29,674	0.1%	3,507	0.0%	55,628	0.3%	117,440
0.0%	79,801	0.4%	264,869	1.3%	188,454	0.9%	527,206	2.5%	8,774	0.0%	1,235,199
0.0%	—	0.0%	—	0.0%	—	0.0%	—	0.0%	1,121,110	5.3%	1,121,110
0.0%	—	0.0%	—	0.0%	—	0.0%	—	0.0%	1,241,471	5.9%	1,241,471
0.0%	—	0.0%	—	0.0%	—	0.0%	—	0.0%	524,626	2.5%	524,626
0.0%	8,196	0.0%	7,498	0.0%	17	0.0%	—	0.0%	2,884	0.0%	19,224
6.7%	—	0.0%	—	0.0%	—	0.0%	—	0.0%	4,149	0.0%	1,395,622
0.0%	8,512	0.1%	—	0.0%	—	0.0%	—	0.0%	—	0.0%	4,875,634
0.0%	900,000	4.2%	—	0.0%	—	0.0%	—	0.0%	260,066	1.2%	1,685,066
0.1%	—	0.0%	—	0.0%	—	0.0%	—	0.0%	—	0.0%	229,035
7.9%	$ 2,802,209	13.3%	$ 305,632	1.5%	$ 227,356	1.0%	$ 536,931	2.5%	$ 3,228,345	15.2%	$ 21,220,229

Amount by Credit Rating - Moody's / S&P / Fitch

Percent of Portfolio	A	Percent of Portfolio	Baa / BBB	Percent of Portfolio	Less Than Investment Grade	Percent of Portfolio	Unrated	Percent of Portfolio	Grand Total
6.0%	$ 3,704,917	16.5%	$ 2,427,612	10.8%	$ 1,394,262	6.2%	$ 1,477,182	6.6%	$ 10,628,819
0.4%	5,681	0.0%	11,874	0.1%	42,459	0.2%	102,351	0.4%	415,354
0.2%	—	0.0%	6,988	0.0%	43,906	0.2%	22,612	0.1%	441,271
0.3%	207,715	0.9%	510,542	2.3%	1,110,723	4.9%	89,640	0.4%	2,145,833
0.0%	8,247	0.0%	—	0.0%	61,147	0.3%	119,195	0.5%	188,589
0.0%	15,000	0.1%	—	0.0%	—	0.0%	16,835	0.1%	1,990,765
0.1%	65,250	0.3%	—	0.0%	—	0.0%	254,927	1.1%	435,576
0.0%	—	0.0%	—	0.0%	—	0.0%	178,153	0.8%	178,153
0.5%	9,563	0.0%	—	0.0%	—	0.0%	—	0.0%	138,049
0.8%	121,783	0.5%	73,697	0.3%	172,545	0.8%	23,886	0.1%	924,392
8.0%	1,246	0.0%	—	0.0%	—	0.0%	1,694,588	7.5%	3,540,542
0.0%	—	0.0%	—	0.0%	1,564	0.0%	1,342,413	6.0%	1,346,312
0.0%	—	0.0%	—	0.0%	—	0.0%	17,049	0.1%	17,049
0.0%	—	0.0%	—	0.0%	—	0.0%	116,000	0.5%	116,000
16.3%	$ 4,139,402	18.3%	$ 3,030,713	13.5%	$ 2,826,606	12.6%	$ 5,454,831	24.2%	$ 22,506,704

Amount by Credit Rating - Moody's / S&P / Fitch

Percent of Portfolio	Aa / AA	Percent of Portfolio	A	Percent of Portfolio	Baa / BBB	Percent of Portfolio	Less Than Investment Grade	Percent of Portfolio	Unrated	Percent of Portfolio	Grand Total
16.9%	$ 57,454	1.3%	$ 1,016	0.0%	$ —	0.0%	$ —	0.0%	$ —	0.0%	$ 762,910
7.1%	—	0.0%	—	0.0%	—	0.0%	—	0.0%	—	0.0%	337,163
6.2%	17,328	0.4%	1,437	0.0%	—	0.0%	2,579	0.2%	3,568	0.1%	284,861
0.0%	—	0.0%	—	0.0%	—	0.0%	—	0.0%	3,788	0.1%	348,484
0.6%	134,700	3.3%	282,378	6.9%	34,694	0.8%	276	0.0%	—	0.0%	499,534
0.0%	6,867	0.2%	—	0.0%	1,462	0.0%	—	0.0%	111,522	2.6%	119,851
0.8%	116,306	2.9%	47,928	1.2%	2,132	0.1%	3,282	0.1%	5	0.0%	201,967
21.1%	99,976	2.5%	89	0.0%	—	0.0%	—	0.0%	69,703	1.7%	1,043,500
0.0%	16,012	0.3%	—	0.0%	—	0.0%	—	0.0%	20,764	0.5%	63,246
0.0%	60	0.0%	156	0.0%	—	0.0%	—	0.0%	21,598	0.5%	21,814
0.0%	—	0.0%	—	0.0%	365,000	8.9%	—	0.0%	23,083	0.6%	402,650
0.7%	—	0.0%	2,478	0.1%	—	0.0%	—	0.0%	—	0.0%	37,262
53.4%	$ 448,703	10.9%	$ 335,482	8.2%	$ 403,288	9.8%	$ 6,137	0.3%	$ 254,031	6.1%	$ 4,123,242

Concentration of Credit Risk

Primary Government

Concentration of credit risk is related to the risk of loss that may be attributed to the magnitude of a government's investment in a single issuer. The State Treasury and the System have individual investment policies limiting the amounts that may be invested in any single issuer.

It is the State Treasurer's policy that each portfolio will be diversified with no more than 4.0 percent of the value of the fund invested in the securities of any single issuer. This limitation shall not apply to the U.S. Government, or agency thereof, or U.S. Government sponsored corporation securities and fully insured and/or collateralized certificates of deposit. Certain portfolios are limited to amounts less than 4.0 percent of the value of the fund invested in the securities of any single issuer. As of June 30, 2019, more than 5.0 percent of the Commonwealth's governmental fund investments were in the Federal Home Loan Bank, Federal Farm Credit Bank, and Federal Home Loan Mortgage Corporation. These investments totaled $1.6 billion, $355.1 million, and $298.9 million, respectively. Since these securities are exempted from the State Treasury investment policies, all investments are compliant with investment policies.

The System's investment guidelines for each specific portfolio also limit investments in any corporate entity to no more than 5.0 percent of the market value of the account for both the internally and externally managed portfolios. The System has no investments in any commercial or industrial organization whose fair value equals 5.0 percent or more of the System's fiduciary net position.

Foreign Currency Risk

Primary Government

Foreign currency risk is the risk that changes in exchange rates will adversely impact the fair value of an investment. All primary government investments exposed to foreign currency risk were part of the System, the Virginia College Savings Plan's (Virginia529) Prepaid529 program (major enterprise fund), and the Unclaimed Property portfolios as of June 30, 2019. There is no investment policy related to foreign currency risk for the Unclaimed Property portfolio. Virginia529 has direct exposure to foreign currency risk through investments managed by Advent Capital Management, LLC, which uses currency forward contracts to hedge risks associated with currency fluctuations pursuant to a formal exception to Virginia529's investment policy.

The System's foreign currency risk exposures, or exchange rate risk, primarily exist in the international and global equity investment holdings. The Commonwealth's exposure to foreign currency risk as of June 30, 2019 is highlighted in the following tables.

Component Units

All nonmajor component unit investments exposed to foreign currency risk were part of James Madison University and the Virginia Economic Development Partnership as of June 30, 2019. None of these entities have investment policies related to foreign currency risk.

Foreign Currency Exposures by Asset Class - Primary Government
(Excluding Pension and Other Employee Benefit Trust Funds)
(Dollars in Thousands)

Currency	Deposits	Common and Preferred Stocks	Equity Index and Pooled Funds	Corporate Bonds	Total
Euro Currency Unit	$ 8	$ 126	$ —	$ 19,143	$ 19,277
Hong Kong Dollar	—	4	—	8,571	8,575
Japanese Yen	2	—	—	4,745	4,747
Swiss Franc	186	10	—	4,447	4,643
British Pound Sterling	—	52	—	1,493	1,545
Canadian Dollar	—	1,429	—	—	1,429
US Dollar	—	—	1,335	—	1,335
Chinese Yuan	—	—	—	1,157	1,157
Mexican Peso	—	1	—	—	1
Total	$ 196	$ 1,622	$ 1,335	$ 39,556	$ 42,709

Foreign Currency Exposures by Asset Class
Primary Government - Virginia Retirement System
(Pension and Other Employee Benefit Trust Funds)
(Dollars in Thousands)

Currency	Cash and Short-term Investments	Equity	Fixed Income	Private Equity	Real Assets	International Funds	Forward Contracts	Total
U.S. Dollar	$ —	$ —	$ —	$ —	$ —	$ 1,923,144	$ —	$ 1,923,144
Euro Currency Unit	132,496	2,133,693	52,877	771,932	340,555	—	(1,535,035)	1,896,518
Japanese Yen	18,704	1,884,573	(29)	—	2,619	246,997	(772,978)	1,379,886
Hong Kong Dollar	8,746	1,058,015	—	—	3,712	—	(144,382)	926,091
Pound Sterling	5,535	1,154,114	1,084	—	90,586	—	(736,940)	514,379
South Korean Won	3,596	404,648	—	—	808	—	(17,780)	391,272
Swiss Franc	27,178	596,807	—	—	754	—	(264,511)	360,228
New Zealand Dollar	238	17,749	—	—	1,279	—	333,422	352,688
Canadian Dollar	22,513	808,123	—	—	24,126	—	(518,788)	335,974
Brazil Real	2,925	169,228	81,253	—	5,457	—	5,037	263,900
Australian Dollar	7,809	592,176	—	—	5,229	—	(348,580)	256,634
Indian Rupee	1,096	223,835	5,093	—	—	—	10,676	240,700
South African Rand	1,940	138,199	67,646	—	524	—	(19,921)	188,388
New Taiwan Dollar	2,226	180,385	—	—	—	—	(4,240)	178,371
Thailand Baht	2,204	98,200	24,831	—	—	—	8,948	134,183
Swedish Krona	2,226	217,102	—	—	1,781	—	(107,413)	113,696
Indonesian Rupiah	2,337	50,418	75,442	—	—	—	(17,418)	110,779
Mexican Peso	1,009	47,995	26,089	—	1,017	—	29,887	105,997
Turkish Lira	607	75,051	17,219	—	267	—	3,976	97,120
Polish Zloty	685	29,607	40,996	—	1,326	—	16,101	88,715
Russian Ruble (New)	562	21,052	62,891	—	—	—	(11,059)	73,446
Malaysian Ringgit	1,438	36,014	29,081	—	—	—	6,291	72,824
Danish Krone	2,436	118,473	—	—	875	—	(63,282)	58,502
Colombian Peso	542	2,889	29,838	—	—	—	18,618	51,887
Peruvian Sol	176	—	55,302	—	—	—	(7,030)	48,448
Czech Koruna	899	1,939	1,180	—	—	—	35,543	39,561
Hungarian Forint	360	11,379	29,103	—	—	—	(4,359)	36,483
Chinese Yuan Renminbi	547	72,490	—	—	—	—	(46,327)	26,710
Israeli Shekel	42	43,125	701	—	2,620	—	(21,688)	24,800
Chilean Peso	505	19,764	7,070	—	—	—	(5,330)	22,009
Nigerian Naira	12,598	—	—	—	—	—	9,082	21,680
Egyptian Pound	5,189	6,029	—	—	—	—	8,727	19,945
Philippines Peso	229	8,575	1,327	—	—	—	3,440	13,571
Dominican Republic Peso	—	—	11,983	—	—	—	—	11,983
UAE Dirham	(159)	9,591	—	—	—	—	1,697	11,129
Argentine Peso	537	—	6,552	—	—	—	719	7,808
Kazakhstan Tenge	—	—	6,370	—	—	—	331	6,701
Qatari Riyal	390	4,537	—	—	—	—	—	4,927
Uruguayan Peso	—	—	3,534	—	—	—	—	3,534
Ukraine Hryvnia	748	—	—	—	—	—	1,180	1,928
Romanian Leu	108	—	5,006	—	—	—	(4,437)	677
Sri Lanka Rupee	—	—	599	—	—	—	—	599
Chinese R Yuan HK	—	—	—	—	—	—	189	189
Moroccan Dirham	1	—	—	—	—	—	—	1
Saudi Arabian Riyal	—	—	(83)	—	—	—	—	(83)
Omani Rial	—	—	—	—	—	—	(5,080)	(5,080)
Singapore Dollar	2,834	199,276	—	—	—	—	(332,684)	(130,574)
Norwegian Krone	2,761	102,505	—	—	362	—	(308,403)	(202,775)
Total	$ 276,813	$ 10,537,556	$ 642,955	$ 771,932	$ 483,897	$ 2,170,141	$ (4,803,801)	$ 10,079,493

Foreign Currency Exposures by Asset Class - Component Units
(Dollars in Thousands)

Currency	Deposits
British Pound Sterling	$ 1,076
Euro Currency Unit	2,461
Chinese RMB	5
Total	$ 3,542

Fair Value Measurements

Primary Government

GASB Statement No. 72, *Fair Value Measurement and Application*, requires disclosures to be made about fair value measurements, the level of fair value hierarchy, and valuation techniques. The fair value hierarchy is based on the valuation inputs used to measure the fair value of assets.

- Level 1 inputs are quoted prices in active markets for identical assets;
- Level 2 inputs are significant other observable inputs and may include quoted prices for similar assets in active markets, quoted prices for identical or similar assets in inactive markets, or model-driven valuations;
- Level 3 inputs are derived using valuation techniques that have significant unobservable inputs.

Investments that do not have a readily determinable fair value are excluded from the fair value hierarchy and instead are valued by using the net asset value (NAV) per share (or its equivalent). In instances where inputs used to measure fair value fall into different levels in the fair value hierarchy, fair value measurements in their entirety are categorized based on the lowest level input that is significant in the valuation.

The following tables summarize recurring fair value measurements for the cash equivalents and investments reported by the primary government (excluding pension and other employee benefit trust funds) and the System (pension and other employee benefit trust funds) as of June 30, 2019.

Fair Value Measurements - Primary Government
(Excluding Pension and Other Employee Benefit Trust Funds)
(Dollars in Thousands)

	Fair Value	Quoted Prices In Active Markets for Identical Assets (Level 1)	Significant Other Observable Inputs (Level 2)	Significant Unobservable Inputs (Level 3)
Fair Value Measured Using Fair Value Hierarchy				
Debt Securities (1)				
U. S. Treasury and Agency Securities	$ 604,402	$ 526,960	$ 77,442	$ —
Corporate Bonds and Notes	1,153,296	1,337	1,151,959	—
Supranational and Non-U.S. Government Bonds and Notes	229,035	—	229,035	—
Commercial Paper	2,140,836	—	2,140,836	—
Convertible Bonds and Notes	117,440	—	117,440	—
Negotiable Certificates of Deposit	2,698,309	—	2,698,309	—
Municipal Securities	19,225	2,901	16,219	105
Asset Backed Securities	299,176	359	298,817	—
Agency Mortgage Backed Securities	280,122	—	280,122	—
Agency Unsecured Bonds and Notes	2,182,363	8,941	2,173,422	—
Mutual and Money Market Funds (Includes SNAP)	3,638	3,638	—	—
Fixed Income and Commingled Funds	823,442	823,442	—	—
International and Emerging Markets Funds	326,332	326,332	—	—
Total Debt Securities	10,877,616	1,693,910	9,183,601	105
Equity Securities (2)				
Common and Pref erred Stocks	474,237	467,646	6,590	1
Foreign Currencies	1,622	1,622	—	—
Equity Index and Pooled Funds	83,509	83,499	—	10
Index Funds	2,081,306	2,081,306	—	—
Real Estate	9,026	1,176	—	7,850
International and Emerging Markets Funds	867,940	867,940	—	—
Other Equity Securities	73,369	73,369	—	—
Total Equity Securities	3,591,009	3,576,558	6,590	7,861
Total by Fair Value Level	14,468,625	$ 5,270,468	$ 9,190,191	$ 7,966
Total Fair Value Established Using the Net Asset Value (NAV) (3)	1,123,373			
Total Fair Value	$ 15,591,998			

(1) Debt securities are classified as follows:
- Level 1 - valued using unadjusted quoted prices in active markets for those securities.
- Level 2 - valued using a matrix pricing model and observable prices using dealer quotes for similar securities traded in active markets.

(2) Equity securities are classified as follows:
- Level 1 - valued using unadjusted quoted prices in active markets for those securities.
- Level 2 - valued using dealer quotes for similar securities traded in active markets.
- Level 3 - valued using independent appraisals.

(3) Investments reported at fair value established using the NAV were all part of the Virginia College Savings Plan's (Virginia529) Prepaid529 and Invest529 programs. The following tables (dollars in thousands) summarizes Prepaid529 and Invest529's investments measured at the NAV and related disclosures as of June 30, 2019. Additional information is available in the Virginia529 individually published financial statements, which may be obtained at www.virginia529.com.

Description of Prepaid529 Investments Measured at the NAV:

Investments Measured at NAV	Fair Value	Unfunded Commitments	Redemption Frequency (if Currently Eligible)	Redemption Notice Period
Hedge Funds				
Blackstone - Hedge Fund of Funds	$ 137,873	$ —	Semi-Annual	95 Days
Equity Real Estate				
UBS Realty Investors	51,406	—	Quarterly	60 Days
Private Debt & Private Equity Funds of Funds				
Golub Capital	21,000	14,000		
Private Advisors	35,537	8,883		
Adams Street Partners	146,641	66,086		
LGT Capital Partners	4,268	6,480		
Neuberger Berman	19,922	14,804		
Aether Investment Partners	26,652	21,848		
Common fund	18,381	2,670		
Horseley Bridge Partners	1,296	18,552		
Common Trust Funds & Other				
Wellington Management	198,294	—	Monthly	10 Days
State Street Global Advisors	135,367	—	Daily	2 Days
Ferox Capital	78,144	—	Daily	2 Days
Black Rock	84,158	—	Daily	3 Days
Sands Capital	47,421	—	Monthly	10 Days
Total Investments Measured at the NAV	$ 1,006,360			

- **Hedge Funds** – This investment type includes one hedge fund. The Blackstone Partners Offshore Fund is diversified, multi-strategy hedge fund of funds. Underlying investment strategies include a range of asset classes and the funds are not restricted from participating in any market, strategy or investment. The fair value of investments in this type has been determined using the NAV per share of the investments.
- **Equity Real Estate** – This investment type includes one limited partnership. The UBS Trumbull Property Fund's investment strategy is to invest primarily through direct equity-owned real estate assets. The fund also has flexibility to invest in joint venture and debt investments. Investments are generally acquired on an all-cash basis, however debt may be used where UBS determines leverage is prudent and is expected to enhance total return without undue risk. The fair values of investments in this type have been determined using the NAV per share of Virginia529's ownership of the partnership.
- **Private Debt and Private Equity Funds of Funds** – This investment type includes private equity funds of funds managed by seven managers and one private debt fund. These investments cannot be redeemed from the fund. Capital is generally expected to be called during the initial 4 to 5 years and is expected to be returned through liquidations of underlying fund investments during the 3rd through 15th years. Secondaries funds of funds may have an accelerated capital call and return of capital profile. Virginia529 invests in multiple funds with three of its private equity investment managers and is also diversified by vintage year with respect to these investments. The fair values of investments in this type have been determined using the March 31, 2019 NAV of Virginia529's ownership of the partnership, adjusted for cash flows (capital calls) through June 30, 2019.
- **Common Trust Funds & Other** – This investment type includes four common trust funds and one limited partnership. The fair value of investments in this type have been determined using the NAV per share of the investments.

Description of Invest529 Investments Measured at the NAV:

Investments Measured at NAV	Fair Value	Unfunded Commitments	Redemption Frequency (if Currently Eligible)	Redemption Notice Period
Equity Real Estate				
UBS Realty Investors	$ 69,318	$ —	Quarterly	60 Days
Blackstone Property Partners	47,695	—	Quarterly	90 Days
Total Investments Measured at the NAV	$ 117,013			

- **Equity Real Estate** – This investment type includes two limited partnerships. The UBS Trumbull Property Fund's investment strategy is to invest primarily through direct equity-owned real estate assets. The fund also has flexibility to invest in joint venture and debt investments. Investments are generally acquired on an all-cash basis, however debt may be used where UBS determines leverage is prudent and is expected to enhance total return without undue risk. Blackstone Property Partners is an open ended commingled fund seeking core plus real estate investments in the U.S. and Canada. The fair values of investments in this type have been determined using the NAV per share of Virginia529's ownership of the partnership.

Fair Value Measurements
Primary Government - Virginia Retirement System
(Pension and Other Employee Benefit Trust Funds)
(Dollars in Thousands)

	Fair Value	Quoted Prices In Active Markets for Identical Assets (Level 1)	Significant Other Observable Inputs (Level 2)	Significant Unobservable Inputs (Level 3)
Fair Value Measured Using Fair Value Hierarchy				
Debt Securities (1)				
U. S. Treasury and Agency Securities	$ 4,102,838	$ 3,359,846	$ 742,992	$ —
Corporate Bonds and Notes	7,505,553	—	7,505,553	—
Collateralized Mortgage Obligations	415,354	—	415,354	—
Commercial Mortgages	441,271	—	441,271	—
Supranational and Non-U.S. Government Bonds and Notes	2,136,551	—	2,136,551	—
Mutual and Money Market Funds	168,196	168,196	—	—
Negotiable Certificates of Deposit	107,746	—	107,746	—
Municipal Securities	138,049	—	138,049	—
Asset Backed Securities	924,392	—	924,392	—
Agencies	3,540,542	—	3,540,542	—
Fixed Income and Commingled Funds	20,323	—	—	20,323
Fixed Income Derivatives	17,049	8,301	8,748	—
Total Debt Securities	19,517,864	3,536,343	15,961,198	20,323
Equity Securities (2)				
Common and Preferred Stocks	24,697,438	24,588,461	107,770	1,207
Equity Index and Pooled Funds	26,229	—	—	26,229
Real Assets	823,559	—	—	823,559
Equity Futures and Sw aps	25,545	17,896	7,649	—
Private Equity	4,143	—	—	4,143
Total Equity Securities	25,576,914	24,606,357	115,419	855,138
Total by Fair Value Level	45,094,778	$ 28,142,700	$ 16,076,617	$ 875,461
Total Fair Value Established Using the Net Asset Value (NAV) (3)	37,036,480			
Total Fair Value	$ 82,131,258			

(1) Debt securities are classified as follows:

- Level 1 - valued using unadjusted quoted prices in active markets for those securities.
- Level 2 - valued using a proprietary matrix pricing technique. This pricing technique defines a primary source and secondary sources to be used if the primary pricing source does not provide a value. Typically, these securities are valued using bid evaluations. The valuation techniques may include market participants' assumptions, quoted prices for similar assets, benchmark yield curves, market corroborated inputs, and other data inputs.
- Level 3 - valued using proprietary information.

(2) Equity securities are classified as follows:

- Level 1 - valued using unadjusted quoted prices in active markets for those securities.
- Level 2 - valued using quoted prices for similar instruments in active markets; quoted prices for identical or similar instruments in markets that are not active; or model-driven valuations in which all significant inputs are observable.
- Level 3 - valued using proprietary information. When observable inputs are not available, this results in using one or more valuation techniques, such as the market approach, the income approach, and/or the cost approach, for which sufficient and reliable data is available. Within this level, the use of the market approach generally consists of using comparable market transactions or other data, while the use of the income approach generally consists of the net present value of estimated future cash flows. The cost approach is often based on the amount that would currently be required to replace an asset with one of comparable utility.

(3) The following table (dollars in thousands) summarizes the System's investments measured at the NAV per share (or its equivalent) and related disclosures as of June 30, 2019. It excludes $537,987 (dollars in thousands) related to Defined Contribution Plan investments for which the System has limited administrative and investment responsibility. Additional information is available in the System's separately issued financial statements, which may be obtained at www.varetire.org.

Description of Investments Measured at the NAV:

	Fair Value	Unfunded Commitments	Redemption Frequency (if Currently Eligible)	Redemption Notice Period
Hedge funds				
Equity long/short funds	$ 4,495,242	$ —	Monthly, quarterly, semi-annually, annually	45-90 days
Equity long only funds	1,774,781	—	Daily, quarterly, annually	14-90 days
Credit funds	765,672	—	Quarterly, annually	45-90 days
Multi-strategy funds	1,800,099	—	Monthly, quarterly, semi-annually	30-90 days
Total hedge funds	8,835,794	—		
Credit strategies funds				
Bank loan and direct lending funds	1,846,954	1,397,660		
Distressed debt funds	695,018	636,531		
Mezzanine debt funds	429,050	465,024		
Multi-strategy funds	1,085,684	1,595,625		
Opportunistic funds	1,501,383	232,487		
Total credit strategies funds	5,558,089	4,327,327		
Private equity funds				
Buyout funds	5,023,821	2,590,662		
Energy funds	701,245	255,246		
Grow th funds	1,055,431	751,653		
International buyout funds	1,200,400	810,058		
Special situations funds	935,717	862,472		
Subordinated debt funds	76,655	265,319		
Turnaround funds	469,383	193,567		
Venture capital funds	58,755	15,754		
Total private equity funds	9,521,407	5,744,731		
Equity international commingled funds	2,080,203	—		
Fixed-income commingled funds	1,322,090	—		
Real estate and real asset funds				
Infrastructure funds	1,750,510	590,367		
Natural resources funds	1,328,116	551,870		
Private investment real estate funds	5,761,136	822,172		
Private real estate investment trusts	213,878	—		
Total real estate and real asset funds	9,053,640	1,964,409		
U. S. Equity commingled funds	127,270	—		
Total investments measured at the NAV	$ 36,498,493	$ 12,036,467		

- **Equity Long/Short Hedge Funds** – This type included investments in eleven hedge funds as of June 30, 2019, which invest in global long and short equity positions. Management of each hedge fund has the ability to invest from value to growth strategies, from small to large capitalization stocks and may vary net exposure considerably. The fair values of the investments in this type have been determined using the NAV per share of the investments. Investments representing approximately 66.0 percent of the value of the investments in this type of fund cannot be redeemed because the investments include restrictions that do not allow redemption in the first 12 to 60 months after acquisition. The remaining restriction period for these investments was less than 12 months as of June 30, 2019.

- **Equity Long-Only Hedge Funds** – This type included an investment in four hedge funds as of June 30, 2019, which invest in global long-only equity positions. These hedge funds are generally fully invested and only very occasionally may take short positions for hedging purposes. The fair value of the investment in this type has been determined using the NAV per share of the investments. Investments representing approximately 67.0 percent of the value of the investments in this type of fund cannot be redeemed because the investments include restrictions that do not allow redemption in the first 12 to 48 months after acquisition. The remaining restriction period for these investments was less than 12 months as of June 30, 2019.
- **Credit Hedge Funds** – This type included investments in two hedge funds as of June 30, 2019, which invest in event-driven, distressed and special situation credit opportunities. The fair values of the investments in this type have been determined using the NAV per share of the investments. Investments representing approximately 12.0 percent of the value of the investments in this type of fund cannot be redeemed because the investments include restrictions that do not allow redemption in the next 12 months. The restriction period for redemptions in regard to 88.0 percent of investments in this type was less than 12 months as of June 30, 2019.
- **Multi-Strategy Hedge Funds** – This type included investments in six hedge funds as of June 30, 2019, which invest in multiple asset classes, combining exposure to balance risks. Such exposure can include traditional and alternative investments. The fair values of the investments in this type have been determined using the NAV per share of the investments. Investments representing approximately 33.0 percent of the value of the investments in this type of fund cannot be redeemed because the investments include restrictions that do not allow redemption in the first 60 months after acquisition. The remaining restriction period for these investments was 1 to 12 months as of June 30, 2019.
- **Credit Strategies Funds** – This type consists of many fund categories, including bank loan and direct lending funds, distressed debt funds, mezzanine debt funds, multi-strategy funds, and opportunistic funds. The fair value of the investments in these funds have been determined using the NAV per share of the investments. The nature of the investments in this type is that distributions are received through the liquidation of the underlying assets in the fund. If these investments were held, it is expected that the underlying assets in the fund would be liquidated over 3 to 5 years.
- **Private Equity Funds** – This type consists of many fund categories including Venture Capital, Buyout, Subordinated Debt, Growth Capital, Turnaround, Energy and Special Situations. The fair value of the investments in these funds have been determined using the NAV per share of the investments. The nature of the investments involves receiving distributions through liquidation of the underlying fund assets. It is expected that hold periods for the underlying fund assets will range from 3 to 8 years.
- **Equity International Commingled Funds** – This type includes investments in ten institutional investment funds as of June 30, 2019, which invest in international equities. These funds employ a variety of investment strategies in global developed and emerging markets. The fair values of the investments in these funds have been determined using the NAV per share of the investments. Redemptions can be made from these funds, given the appropriate notice, any regular trading day on the NYSE.
- **Fixed Income Commingled Funds** – This type consists of nine institutional investment funds that invest in U.S. and multi-national fixed income markets. The fair values of the investments in these funds have been determined using the NAV per share of the investments.
- **U.S. Equity Commingled Funds** - This type includes investments in five institutional investment funds as of June 30, 2019, which invest in domestic equities. These funds employ a variety of investment strategies in small-, mid-, and large- cap U.S. stocks. The fair values of the investments in these funds have been determined using the NAV per share of the investments. Redemptions can be made from these funds, given the appropriate notice, any regular trading day on the NYSE.
- **Real Assets** – This type includes investments in many fund categories including Private Investment Real Estate, Private Real Estate Investment Trusts, Infrastructure and Natural Resources. The fair value of the investments in these funds have been determined using the NAV per share of the investments. The nature of the investments in this type is that distributions are received through income as well as the liquidation of the underlying assets in the fund. If these investments were held, it is expected that the underlying assets of the funds would be liquidated over 1 to 14 years.

Component Units

The following table summarizes fair value measurements for the cash equivalents and investments reported by the component units as of June 30, 2019. The table excludes cash equivalents and investments measured at fair value by the foundations that follow FASB standards.

Fair Value Measurements - Component Units
(Dollars in Thousands)

	Fair Value	Quoted Prices In Active Markets for Identical Assets (Level 1)	Significant Other Observable Inputs (Level 2)	Significant Unobservable Inputs (Level 3)
Fair Value Measured Using Fair Value Hierarchy				
Debt Securities (1)				
U. S. Treasury and Agency Securities	$ 517,859	$ 341,898	$ 175,961	$ —
Corporate Bonds and Notes	499,535	30,361	469,174	—
Supranational and Non-U.S. Government Bonds and Notes	2,478	2,478	—	—
Commercial Paper	25,595	5,847	19,748	—
Negotiable Certificates of Deposit	63,246	17,320	45,926	—
Repurchase Agreements	37,650	—	37,650	—
Municipal Securities	201,967	284	201,683	—
Asset-Backed Securities	284,860	7,660	277,200	—
Agency Mortgage-Backed Securities	762,910	31,863	731,047	—
Agency Unsecured Bonds and Notes	247,667	55,986	191,681	—
Mutual and Money Market Funds	331,579	328,964	2,615	—
Fixed Income and Commingled Funds	36,476	36,476	—	—
Other Debt Securities	92,705	92,291	414	—
Total Debt Securities	3,104,527	951,428	2,153,099	—
Equity Securities (2)				
Common and Preferred Stocks	43,650	43,650	—	—
Equity Index and Pooled Funds	163,593	163,593	—	—
Index Funds	9,580	9,580	—	—
Real Estate	3,074	3,040	—	34
Other Equity Securities	3,921	618	3,295	8
Total Equity Securities	223,818	220,481	3,295	42
Total by Fair Value Level	3,328,345	$ 1,171,909	$ 2,156,394	$ 42
Fair Value Established Using the Net Asset Value (NAV) (3)				
Fixed Income and Commingled Funds	87,794			
Other Debt Securities	20,343			
Equity Index and Pooled Funds	101,122			
Index Funds	6,952			
Real Estate	960			
Other Equity Securities	1,197,419			
Total Fair Value Established Using the NAV	1,414,590			
Total Fair Value	$ 4,742,935			

(1) Debt securities are classified as follows:

- Level 1 - valued using unadjusted quoted prices in active markets for those securities.
- Level 2 - valued based on quoted prices for similar securities in active markets or quoted prices for identical or similar securities in markets that are not active.

(2) Equity securities are classified as follows:

- Level 1 - valued using unadjusted quoted prices in active markets for those securities.
- Level 2 - valued using significant other observable inputs.
- Level 3 - valued using unobservable inputs and may include assumptions of management.

(3) The following nonmajor component units reported investments at fair value established using the NAV: Old Dominion University, Virginia Commonwealth University (VCU), Virginia Commonwealth University Health System Authority (blended component unit of VCU), College of William and Mary, Virginia Military Institute, Virginia State University, Virginia Biotechnology Research Partnership Authority, Virginia Outdoors Foundation, and Virginia Polytechnic Institute and State University. Additional information is available in the separately issued financial statements.

Securities Lending

The State Treasury's securities lending program is managed by Deutsche Bank AG, New York (Deutsche Bank), under a contract dated March 28, 2014. The enabling legislation for the securities lending program is Section 2.2-4506 of the *Code of Virginia*. No violations of legal or contractual provisions were noted during the year.

All securities lending loans are on an open-ended or one-day basis and may be terminated by the State Treasury with a 24-hour notice or are term loans with the right of substitution. While all securities may be recalled on a daily basis, securities are often on loan for much longer periods. Generally cash reinvestments security maturities do not match the maturities of loans. Per the contract with Deutsche Bank, all cash collateral reinvestment securities attributable to loans made on the Commonwealth's behalf shall be maintained by Deutsche Bank, and the State Treasury cannot pledge or sell such collateral absent a default.

The State Treasury's contract with Deutsche Bank provides for loss indemnification against insolvency default with respect to lending transactions and in the case of reverse transactions (Repurchase Agreements) as defined in the applicable Agency Securities Lending and Repurchase Agreement. In March, 2018 Deutsche Bank announced it put in place a custom insurance solution written by a (AA-rated by S&P) specialty casualty insurer that backstops Deutsche Bank's indemnification obligation. Additionally, Deutsche Bank AG is liable for any losses experienced from reinvestment of cash collateral in investments not authorized by the provisions of the investment guidelines for the Commonwealth of Virginia agreed upon by both parties and made a part of the Agency Securities Lending and Repurchase Agreement. There were no realized losses resulting from default during this reporting period.

When securities are loaned, the collateral received is at least 100.0 percent of fair value of the securities loaned and must be maintained at 100.0 percent or greater. There are no stated restrictions on the amount of securities that may be loaned, but the basic composition of the general account portfolio effectively restricts the maximum percentage of the portfolio that may be loaned. During the last fiscal year, approximately 9.7 percent of the general account securities were on loan.

During the past year, a combination of U.S. Treasury, agency, agency mortgage and corporate securities have been loaned, with the majority of the loaned securities being U.S. Treasury and agency securities. As of June 30, 2019, all collateral received was in the form of cash.

Securities loaned for the State Treasurer's cash collateral reinvestment pool, which consisted of 92.6 percent general account funds and 7.4 percent Virginia Lottery funds as of June 30, 2019, had a carrying value of $734.9 million and a fair value of $776.0 million. The fair value of the collateral received was $784.2 million providing for coverage of 101.1 percent. At year-end, the State Treasury's securities lending program had no credit risk exposure to borrowers because the amounts it owed the borrowers exceeded the amounts the borrowers owed Treasury's securities lending program. All securities are marked to market daily. The carrying value of the cash collateral reinvestment pool received was $785.1 million and the cost of the investments purchased with the cash collateral was $785.1 million. As of June 30, 2019, the State Treasurer's cash collateral reinvestment pool had an unrealized gain of $863,000, and is recorded in the General Fund as stated in Note 1.FF. This amount is included in the total State Treasurer's Portfolio discussed earlier in this note.

Cash collateral reinvestment guidelines were amended effective April 16, 2014. Approved investment instruments include Indemnified Repurchase Agreements marked to market daily and preapproved Government Money Market Funds. Term repurchase agreements are limited to 93 days. As of June 30, 2019,100.0 percent of cash collateral reinvestments were in indemnified repurchase agreements.

As of June 30, 2019, the cash collateral reinvestment portfolio had a weighted average maturity to reset date of one day. Using the expected maturity date, the weighted average maturity was 26 days and using the final maturity date, which assumes no pay downs on any asset-backed or mortgage-backed securities, the weighted average maturity was 26 days.

As of June 30, 2019, the cash collateral reinvestment portfolio was in compliance with the State Treasury's current cash collateral reinvestment guidelines.

Under authorization of the Board, the System lends its fixed income and equity securities to various broker-dealers on a temporary basis. This program is administered through an agreement with the System's custodial agent bank. All security loan agreements are collateralized by cash, securities, or an irrevocable letter of credit issued by a major bank, and have a fair value equal to at least 102.0 percent of the fair value for domestic securities and 105.0 percent for international securities. Securities received as collateral cannot be pledged or sold by the System unless the borrower defaults. Contracts require the lending agents to indemnify the System if the borrowers fail to return the securities lent and related distributions and if the collateral is inadequate to replace the securities lent. All securities loans can be terminated on demand by either the System or the borrowers. The majority of loans are open loans, meaning the rebate is set daily. This results in a maturity of one or two days on average, although securities are often on loan for longer periods. The maturity of loans generally does not match the maturity of collateral investments, which averages 18 days. At year-end, the System had no credit risk exposure to borrowers because the amounts it owes the borrowers exceeded the amounts the borrowers owe the System. All securities are marked to market daily and carried at fair value. The fair value of securities on loan as of June 30, 2019, was $8.6 billion. The June 30, 2019, balance was composed of U.S. Government and agency securities of $2.7 billion, corporate and other bonds of $1.2 billion, common and preferred stocks of $4.6 billion and supranational and non-U.S. government bonds of $113.0 million. The value of collateral (cash and non-cash) as of June 30, 2019, was $9.0 billion.

As of June 30, 2019, the invested cash collateral had a cost of $4.7 billion and was composed of negotiable certificates of deposit of $60.4 million, floating rate notes of $3.1 billion, commercial paper of $92.1 million, and repurchase agreements of $1.4 billion.

9. RECEIVABLES

The following schedule (dollars in thousands) details the accounts, loans, local school bonds, interest, taxes, prepaid tuition contributions, security transactions, and other receivables presented in the major funds, aggregated nonmajor funds by type, internal service funds, fiduciary funds, major component units, and aggregated nonmajor component units, as of June 30, 2019.

	Accounts Receivable	Loans / Mortgage Receivable	Local School Bonds Receivable	Interest Receivable	Taxes Receivable
Primary Government:					
General (1)	$ 1,237,559	$ 191	$ —	$ 443,306	$ 2,099,223
Major Special Revenue Funds:					
Commonwealth Transportation (2)	170,488	189,750	—	451	205,240
Federal Trust	1,589,810	787	—	—	—
Literary	298,067	98,829	—	45,608	—
Nonmajor Governmental Funds (2)	234,889	7,379	—	21,054	8,436
Major Enterprise Funds:					
Virginia Lottery	72,486	—	—	—	—
Virginia College Savings Plan	12,370	—	—	5,768	—
Unemployment Compensation	96,798	—	—	—	—
Nonmajor Enterprise Funds	59,698	—	—	—	—
Internal Service Funds	35,692	—	—	—	—
Private Purpose Trust Funds	316	—	—	3,935	—
Pension and Other Employee Benefit Trust Funds (3)	249,372	—	—	276,679	—
Investment Trust Fund	—	—	—	9,474	—
Agency Funds	674	—	—	—	116,463
Total Primary Government (4)	$ 4,058,219	$ 296,936	$ —	$ 806,275	$ 2,429,362
Discrete Component Units:					
Virginia Housing Development Authority (5)	$ —	$ 5,807,362	$ —	$ 26,587	$ —
Virginia Public School Authority (6)	—	—	3,293,365	58,023	—
Virginia Resources Authority	—	4,307,341	—	29,777	—
Virginia College Building Authority	—	—	—	24,053	—
Nonmajor Component Units (7)	1,908,400	146,308	—	8,659	7,058
Total Component Units	$ 1,908,400	$ 10,261,011	$ 3,293,365	$ 147,099	$ 7,058

Note (1): The General Fund (major) reports pending investment transactions of $41,566 (dollars in thousands) as Other Receivables.

Note (2): The loans receivable in the Commonwealth Transportation Fund (major) includes $156.0 million from the Virginia Infrastructure Bank as discussed in Note 22.D. In the nonmajor governmental funds, it represents the amounts to be received for current debt service requirements. The amount to be received for long-term debt service requirements of $76.5 million is included in the government-wide statements but excluded from the above amounts.

Note (3): In the Pension and Other Employee Benefit Trust Funds, Interest Receivable of $276,679 (dollars in thousands) also includes dividends receivable. Additionally, Other Receivables of $130,475 (dollars in thousands) are made up of $98,893 (dollars in thousands) in pending investment transactions, which includes $79,003 (dollars in thousands) in futures margins receivable, $17,897 (dollars in thousands) in futures contracts receivable, and $1,993 (dollars in thousands) in securities lending; and $31,582 (dollars in thousands) in other receivables related to benefit plans.

Note (4): Fiduciary net receivables in the amount of $1,728,734 (dollars in thousands) are not included in the Government-wide Statement of Net Position.

Note (5): The Virginia Housing Development Authority (major component unit) reports $5,470,456 (dollars in thousands) as Restricted Loans/ Mortgage Receivable, $24,153 (dollars in thousands) as Restricted Interest Receivable, and $18,869 as Restricted Other Receivables.

Note (6): The Virginia Public School Authority (major component unit) reports $3,293,365 (dollars in thousands) as Local School Bonds Receivable. This amount will be used to repay the Authority's bonds.

Note (7): Other Receivables of the nonmajor component units are primarily comprised of pledges receivable of $115,744 (dollars in thousands) reported by the University of Virginia; premium receivables of $165,327 (dollars in thousands) and third-party settlements and non-patient receivables of $127,022 (dollars in thousands) reported by Virginia Commonwealth University Health System Authority (blended component unit of Virginia Commonwealth University); $60,025 (dollars in thousands) reported by foundations of the higher education institutions representing FASB reporting entities defined in Note 1.B.; and $82,476 (dollars in thousands) reported by the Virginia Port Authority, $13,255 (dollars in thousands) reported by the Virginia Biotechnology Research Partnership Authority.

Prepaid Tuition Contributions Receivable	Security Transactions	Other Receivables	Allowance for Doubtful Accounts	Net Accounts Receivable	Amounts to be Collected Greater than One Year
$ —	$ —	$ 41,566	$ (1,710,260)	$ 2,111,585	$ 514,314
—	—	—	(40,988)	524,941	190,757
—	—	—	(4,871)	1,585,726	22,079
—	—	—	(307,230)	135,274	87,443
—	—	87	(95,885)	175,960	571
—	—	—	—	72,486	—
209,669	—	4,541	—	232,348	159,635
—	—	—	(19,159)	77,639	—
—	—	—	(1,740)	57,958	—
—	—	—	(156)	35,536	—
—	—	1,122	—	5,373	—
—	995,675	130,475	—	1,652,201	—
—	—	—	—	9,474	—
—	—	—	(55,451)	61,686	10,290
$ 209,669	$ 995,675	$ 177,791	$ (2,235,740)	$ 6,738,187	$ 985,089
$ —	$ —	$ 19,319	$ (178,642)	$ 5,674,626	$ 5,446,197
—	—	—	—	3,351,388	3,140,991
—	—	6,559	(686)	4,342,991	4,023,694
—	—	—	—	24,053	—
—	—	581,432	(858,516)	1,793,341	260,575
$ —	$ —	$ 607,310	$ (1,037,844)	$ 15,186,399	$ 12,871,457

10. CONTRIBUTIONS RECEIVABLE, NET

The following schedule details the contributions receivable for foundations(1) included with the nonmajor component units, as of June 30, 2019. The major component units reported no contributions receivable for fiscal year 2019.

(Dollars in Thousands)

	Due in Less Than One Year	Due Between One and Five Years	Due in More Than Five Years	Subtotal	Present Value Discount (2)	Allowance for Doubtful Accounts	Contributions Receivable, Net
Discrete Component Units:							
Nonmajor Component Units	$ 229,453	$ 342,394	$ 155,671	$ 727,518	$ (67,579)	$ (28,851)	$ 631,088
Total Component Units	$ 229,453	$ 342,394	$ 155,671	$ 727,518	$ (67,579)	$ (28,851)	$ 631,088

Note (1): Foundations represent FASB reporting entities defined in Note 1.B.
Note (2): The discount rate used to determine present value ranges from 0.1 percent to 7.0 percent.

11. INTERFUND AND INTER-ENTITY ASSETS / LIABILITIES

Due from/to Other Funds

Due from Other Funds are amounts to be received from one fund by another fund for goods sold or services rendered. Due to Other Funds are amounts owed by one fund to another fund for goods purchased or services obtained.

The following line items are included in the category "Due from Other Funds":

- Due from Other Funds
- Due from Internal Parties (Governmental Funds and Business-type Activities)
- Due from External Parties (Fiduciary Funds)

The following line items are included in the category "Due to Other Funds":

- Due to Other Funds
- Due to Internal Parties (Governmental Funds and Business-type Activities)
- Due to External Parties (Fiduciary Funds)

The following schedule shows the Due from/to Other Funds as of June 30, 2019.

Schedule of Due from/to Other Funds

June 30, 2019

(Dollars in Thousands)

Due From	Amount	Due To	Amount
Primary Government		**Primary Government**	
General Fund	$ 44,048	Major Special Revenue Funds:	
		Commonwealth Transportation	$ 2,044
		Federal Trust	349
		Nonmajor Governmental Funds	51
		Major Enterprise Funds:	
		Virginia Lottery	26,868
		Nonmajor Enterprise Funds	13,484
		Internal Service Funds	1,252
Major Special Revenue Funds:			
Commonwealth Transportation	64,838	Nonmajor Governmental Funds	64,838
Federal Trust	171	General Fund	3
		Major Enterprise Funds:	
		Unemployment Compensation	168
Literary	2,420	Major Enterprise Funds:	
		Virginia Lottery	2,420
Nonmajor Governmental Funds	47,860	General Fund	1,103
		Major Special Revenue Funds:	
		Commonwealth Transportation	44,231
		Federal Trust	1,642
		Major Enterprise Funds:	
		Unemployment Compensation	150
		Nonmajor Enterprise Funds	709
		Internal Service Funds	25
Major Enterprise Funds:			
Unemployment Compensation	816	General Fund	590
		Major Special Revenue Funds:	
		Commonwealth Transportation	20
		Federal Trust	151
		Nonmajor Governmental Funds	27
		Major Enterprise Funds:	
		Virginia Lottery	2
		Nonmajor Enterprise Funds	14
		Internal Service Funds	12
Nonmajor Enterprise Funds	998	General Fund	162
		Major Special Revenue Funds:	
		Commonwealth Transportation	543
		Federal Trust	213
		Nonmajor Governmental Funds	61
		Nonmajor Enterprise Funds	19
Internal Service Funds	70,474	General Fund	38,255
		Major Special Revenue Funds:	
		Commonwealth Transportation	14,991
		Federal Trust	7,556
		Nonmajor Governmental Funds	4,498
		Major Enterprise Funds:	
		Virginia Lottery	215
		Virginia College Savings Plan	92
		Nonmajor Enterprise Funds	3,904
		Internal Service Funds	963
Pension and Other Employee Benefit Trust Funds	4,014	Pension and Other Employee Benefit Trust Funds	4,014
Investment Trust Funds	10,453	Investment Trust Funds	10,453
Total Primary Government	$ 246,092	Total Primary Government	$ 246,092

Schedule of Due from/to Internal/External Parties
June 30, 2019

(Dollars in Thousands)

Due From	Amount	Due To	Amount
Primary Government		**Primary Government**	
General Fund	$ 3,773	Investment Trust Funds	$ 2
		Agency Funds	3,771
Major Special Revenue Funds:			
Federal Trust	21,537	Pension and Other Employee Benefit Trust Funds	21,537
Nonmajor Governmental Funds	40,726	Pension and Other Employee Benefit Trust Funds	40,481
		Agency Funds	245
Internal Service Funds	247	Pension and Other Employee Benefit Trust Funds	247
Pension and Other Employee Benefit Trust Funds	30,398	General Fund	19,085
		Major Special Revenue Funds:	
		Commonwealth Transportation	5,156
		Federal Trust	2,421
		Nonmajor Governmental Funds	2,317
		Major Enterprise Funds:	
		Virginia Lottery	194
		Virginia College Savings Plan	83
		Nonmajor Enterprise Funds	711
		Internal Service Funds	431
Total Primary Government	$ 96,681	Total Primary Government	$ 96,681

Interfund Receivables/Payables

Interfund Receivables/Payables are loans made by one fund to another.

The following schedule shows the Interfund Receivables/Payables for the primary government as of June 30, 2019. There were no Interfund Receivables/Payables for the component units as of June 30, 2019.

Interfund Receivables/Payables
June 30, 2019

(Dollars in Thousands)

Receivable From	Amount	Payable To	Amount
Primary Government		**Primary Government**	
Nonmajor Government Funds	$ 271,152	General Fund	$ 2,535
		Major Special Revenue Funds:	
		Commonwealth Transportation	3,401
		Federal Trust	25,619
		Nonmajor Enterprise Funds	44,995
		Internal Service Funds	194,602
Total Primary Government	$ 271,152	Total Primary Government	$ 271,152

Due from/to Primary Government and Component Units

Included in this category is activity between the Commonwealth and its component units, as well as activity between component units.

A due from primary government amount that is due from the Federal Trust Fund (major special revenue) to the Virginia College Building Authority (major component unit) of $3.4 million is for interest on Build America Bonds (BABs).

A $14.4 million due from primary government amount that is due from the General Fund (major governmental) to the higher education institutions (nonmajor component units) is for payments awaiting disbursements and appropriations available for capital projects and other programs. The General Fund reports $392,510 in the fund financial statements and an additional $14.0 million in the government-wide financial statements.

A $27,402 due from primary government amount represents an amount due from a nonmajor governmental fund related to the Department of the Treasury's reimbursement programs to George Mason University and the Virginia Community College System (nonmajor component units).

A due from primary government amount that is due from the Virginia Public Building Authority (capital projects fund) to the Virginia Port Authority (nonmajor component unit) of $12.8 million represents bond revenue to be used for capital projects.

A $30.4 million due from component units in the Health Care Fund (internal service fund) represents amounts due from the nonmajor component units.

An $865,011 due from component units represents monies owed for administrative and project expenses from the Science Museum of Virginia Foundation (nonmajor component unit) to a nonmajor governmental fund. The entire nonmajor governmental amount is reported in the government-wide financial statements.

The $117.5 million due from component units amount represents amounts due from the Virginia College Building Authority (major component unit) for the Department of the Treasury's reimbursement programs to higher education institutions (nonmajor component units). There is a due to component units of $1.7 million from a foundation of Old Dominion University (nonmajor component unit) to the Virginia Commercial Space Flight Authority (nonmajor component unit).

Due from/to Component Units and Fiduciary Funds

A $35.5 million due from component units in the Pension and Other Employee Benefit Trust Funds (fiduciary funds) represents amounts due from nonmajor component units.

Loans Receivable/Payable Between Primary Government and Component Units

The College of William and Mary (nonmajor component unit) loans of $796,803 were used to fund a capital project until bonds were issued. Virginia Community College System (nonmajor component unit) loans of $3.4 million were used to primarily advance fund federally-funded programs. These amounts are due to a nonmajor governmental fund.

The $189.9 million in loans receivable from primary government represents loans from the Virginia Public School Authority (VPSA) (major component unit) to the Literary Special Revenue Fund (major governmental fund). The VPSA makes grants to local school divisions to finance the purchase of educational technology and security equipment. The VPSA makes these grants using the proceeds of notes issued for that purpose, which will be repaid from appropriations to be made by the Virginia General Assembly from the Literary Special Revenue Fund (major governmental fund).

12. OTHER ASSETS

The following table summarizes Other Assets as of June 30, 2019.

(Dollars in Thousands)

	Cash and Travel Advances	Net OPEB Asset (1)	Other Assets	Total Other Assets
Primary Government:				
General	$ 1,217	$ —	$ —	$ 1,217
Major Special Revenue Funds:				
Commonwealth Transportation	282	—	—	282
Federal Trust	1,607	—	—	1,607
Nonmajor Governmental Funds	637	—	—	637
Major Enterprise Funds:				
Virginia Lottery	1	1,015	—	1,016
Virginia College Savings Plan	—	444	—	444
Nonmajor Enterprise Funds	206	3,608	—	3,814
Internal Service Funds (2)	—	2,423	31,294	33,717
Private Purpose	—	3	—	3
Agency Funds (3)	—	—	35	35
Total Primary Government	$ 3,950	$ 7,493	$ 31,329	$ 42,772
Discrete Component Units:				
Virginia Housing Development Authority (4)	$ —	$ —	$ 46,667	$ 46,667
Nonmajor Component Units (5)	610	—	59,883	60,493
Total Component Units	$ 610	$ —	$ 106,550	$ 107,160

Notes (1) Other noncurrent assets in the proprietary and fiduciary funds represent the Virginia Sickness and Disability Program Net OPEB Asset applicable to the respective fund. The proprietary fund amounts are reclassified to Other Restricted Assets in the Government-wide Statement of Net Position. The Private Purpose amount is not included in the Government-wide Statement of Net Position.

Notes (2) Of the $31,294 (dollars in thousands) shown above, $29,733 (dollars in thousands) and $1,561 (dollars in thousands) represent Virginia Information Technologies Agency and Virginia Correctional Enterprises, respectively, amounts due from various governmental funds that will not be received within 60 days. These amounts are reclassified to an internal balance on the Government-wide Statement of Net Position.

Notes (3) Other Assets of the Agency Funds represent prepaid expenses and advances to third party agents. The $34,887 shown above is not included in the Government-wide Statement of Net Position.

Notes (4) Other Assets of the Virginia Housing Development Authority are comprised of mortgage servicing rights of $46,667 (dollars in thousands).

Notes (5) Other Assets of the nonmajor component units are primarily comprised of miscellaneous items spread among the higher education institutions and related foundations.

13. RESTRICTED ASSETS

Restricted assets represent monies or other resources that must be used for specific legal or contractual requirements. The Commonwealth Transportation Fund (major special revenue), Debt Service Fund (nonmajor governmental), and Capital Project Fund (nonmajor governmental) reported $1.9 billion in restricted cash, cash equivalents, and investments primarily related to bond agreements. The governmental and business-type activities funds reported other restricted assets of $134.6 million and $5.1 million, respectively, for the Virginia Sickness and Disability Program Net OPEB Asset. See Note 12, Other Assets, for more information related to the Enterprise and Internal Service Funds.

The Virginia Housing Development Authority, the Virginia Public School Authority, and the Virginia College Building Authority (all major component units) reported restricted assets totaling $1.4 billion, $247.8 million, and $438.1 million, respectively. These major component units' assets are restricted for debt service under a bond indenture or other agreement, or for construction and equipment.

The Virginia Resources Authority (major component unit) reported restricted assets of $882.3 million. Of this amount, $874.5 million is restricted for loans to local governments, bond indentures, or federal and state regulations for various revolving funds, and $7.8 million is restricted for the Operating Reserve Fund for the Virginia Pooled Financing Program.

The Virginia Port Authority (nonmajor component unit) reported restricted assets of $136.0 million primarily for debt service under bond agreements, construction and other project funds.

The Tobacco Region Revitalization Commission (nonmajor component unit) reported restricted assets of $193.0 million to be used for financial aid to tobacco growers and to foster community economic growth. This includes Other Restricted Assets of $48,000 for the Virginia Sickness and Disability Program Net OPEB asset.

The Hampton Roads Sanitation District Commission (nonmajor component unit) reported restricted assets of $42.9 million to be used for debt service.

The Virginia Small Business Financing Authority (nonmajor component unit) reported restricted assets of $41.7 million for gifts and grants. This includes Other Restricted Assets of $24,420 for the Virginia Sickness and Disability Program Net OPEB asset.

The higher education institutions (nonmajor component units) reported restricted assets totaling approximately $6.5 billion primarily for endowment and other contractual obligations. Included in this amount is approximately $5.7 billion of foundations' restricted assets. This includes Other Restricted Assets of $84.6 million for the Virginia Sickness and Disability Program Net OPEB asset. The Virginia Commonwealth University Health System Authority (Authority) (a blended component unit of Virginia Commonwealth University–nonmajor component unit) includes $18.6 million for a beneficial trust and $4.3 million for an equity interest in a foundation as Other Restricted Assets. These Authority assets are classified as Level 3 of the fair value hierarchy. For additional information, see the Authority's separately issued financial statements.

The two museum foundations, the Virginia Museum of Fine Arts Foundation (nonmajor component unit) and the Science Museum of Virginia Foundation (nonmajor component unit) had restricted assets of $239.5 million and $20.6 million, respectively, primarily for donor-imposed restricted endowments.

The remaining $8.8 million is spread among the following nonmajor component units: the Virginia Outdoors Foundation, the Danville Science Center, the Fort Monroe Authority, the Virginia Arts Foundation, the Virginia Biotechnology Research Partnership Authority, the Virginia Economic Development Partnership, the Virginia Tourism Authority, the Virginia Foundation for Healthy Youth, and the Library of Virginia Foundation. Included in this amount is approximately $930,000 for the Virginia Sickness and Disability Program Net OPEB asset.

14. CAPITAL ASSETS

The following schedule presents the changes in the Capital Assets as of June 30, 2019 (dollars in thousands).

Schedule of Changes in Capital Assets
Governmental Activities

(Dollars in Thousands)

	Balance July 1 as restated (1)	Increases	Decreases	Balance June 30
Nondepreciable Capital Assets:				
Land	$ 3,351,771	$ 136,766	$ (33,455)	$ 3,455,082
Water Rights and/or Easements	95,968	9,558	—	105,526
Infrastructure	1,308,220	—	—	1,308,220
Construction-in-Progress	4,171,613	1,608,382	(2,009,656)	3,770,339
Total Nondepreciable Capital Assets	8,927,572	1,754,706	(2,043,111)	8,639,167
Depreciable Capital Assets:				
Buildings (2)	4,237,017	231,444	(13,448)	4,455,013
Equipment	1,326,769	61,300	(41,420)	1,346,649
Infrastructure	31,946,548	1,855,174	(581,160)	33,220,562
Software	739,653	200,160	(659)	939,154
Total Capital Assets being Depreciated	38,249,987	2,348,078	(636,687)	39,961,378
Less Accumulated Depreciation for:				
Buildings	1,627,154	104,275	(11,296)	1,720,133
Equipment	798,021	72,736	(37,902)	832,855
Infrastructure	11,050,691	1,080,550	(336,855)	11,794,386
Software	382,478	66,878	(233)	449,123
Total Accumulated Depreciation	13,858,344	1,324,439	(386,286)	14,796,497
Total Depreciable Capital Assets, Net	24,391,643	1,023,639	(250,401)	25,164,881
Total Capital Assets, Net	$ 33,319,215	$ 2,778,345	$ (2,293,512)	$ 33,804,048

Note (1): Beginning balances have been restated by $2.7 million as discussed in Note 2.

Note (2): Includes temporarily impaired assets with a carrying value of $1.0 million.

Depreciation Expense Charged to Functions of the Primary Government
June 30, 2019

(Dollars in Thousands)

Governmental Activities:	
General Government	$ 30,441
Education	8,694
Transportation	1,120,674
Resources and Economic Development	30,564
Individual and Family Services	57,474
Administration of Justice	51,319
Capital Assets held by the Internal Service Funds are charged to various functions	25,273
Total	$ 1,324,439

Schedule of Changes in Capital Assets
Business-type Activities

(Dollars in Thousands)

	Balance July 1	Increases	Decreases	Balance June 30
Nondepreciable Capital Assets				
Land	$ 1,874	$ —	$ —	$ 1,874
Construction-in-Progress	1,461	7,688	(136)	9,013
Total Nondepreciable Capital Assets	3,335	7,688	(136)	10,887
Depreciable Capital Assets:				
Buildings	22,801	411	—	23,212
Equipment	62,560	2,879	(905)	64,534
Software	13,146	2,393	(26)	15,513
Total Capital Assets being Depreciated	98,507	5,683	(931)	103,259
Less Accumulated Depreciation for:				
Buildings	12,890	399	—	13,289
Equipment	46,092	4,264	(874)	49,482
Software	9,065	1,818	(24)	10,859
Total Accumulated Depreciation	68,047	6,481	(898)	73,630
Total Depreciable Capital Assets, Net	30,460	(798)	(33)	29,629
Total Capital Assets, Net	$ 33,795	$ 6,890	$ (169)	$ 40,516

Schedule of Changes in Capital Assets
Component Units

(Dollars in Thousands)

	Balance July 1	Increases	Decreases	Subtotal June 30	Foundations (1)	Total June 30
Nondepreciable Capital Assets:						
Land	$ 656,947	$ 26,051	$ (5,411)	$ 677,587	$ 342,067	$ 1,019,654
Construction-in-Progress	1,606,937	1,610,443	(924,929)	2,292,451	91,181	2,383,632
Inexhaustible Works of Art/Historical Treasures	81,526	3,971	(72)	85,425	15,215	100,640
Livestock	3,340	—	(3,019)	321	1,284	1,605
Total Nondepreciable Capital Assets	2,348,750	1,640,465	(933,431)	3,055,784	449,747	3,505,531
Depreciable Capital Assets:						
Buildings	17,635,505	642,178	(56,276)	18,221,407	1,323,763	19,545,170
Infrastructure	3,900,953	109,387	(3,901)	4,006,439	11,918	4,018,357
Equipment	3,850,812	350,741	(112,928)	4,088,625	178,345	4,266,970
Improvements Other Than Buildings	576,274	25,493	(24,334)	577,433	99,796	677,229
Library Books	748,629	14,843	(13,260)	750,212	—	750,212
Software	2,691,116	60,694	(20,735)	2,731,075	—	2,731,075
Other Intangible Assets	2,000	—	—	2,000	—	2,000
Total Capital Assets being Depreciated	29,405,289	1,203,336	(231,434)	30,377,191	1,613,822	31,991,013
Less Accumulated Depreciation for:						
Buildings	5,977,378	498,720	(45,714)	6,430,384	401,505	6,831,889
Infrastructure	1,795,733	108,253	(2,966)	1,901,020	4,366	1,905,386
Equipment	2,669,582	278,824	(104,961)	2,843,445	128,671	2,972,116
Improvements Other Than Buildings	361,644	26,273	(3,691)	384,226	60,072	444,298
Library Books	656,412	26,314	(12,865)	669,861	—	669,861
Software	490,790	69,706	(17,601)	542,895	—	542,895
Other Intangible Assets	1,866	134	—	2,000	—	2,000
Total Accumulated Depreciation	11,953,405	1,008,224	(187,798)	12,773,831	594,614	13,368,445
Total Depreciable Capital Assets, Net	17,451,884	195,112	(43,636)	17,603,360	1,019,208	18,622,568
Total Capital Assets, Net	$ 19,800,634	$ 1,835,577	$ (977,067)	$ 20,659,144	$ 1,468,955	$ 22,128,099

Note (1) Foundations represent FASB reporting entities defined in Note 1.B. Since foundations follow FASB rather than GASB reporting requirements, no amounts are reported in the software and other intangible assets categories for foundations.

15. DEFERRED OUTFLOWS AND DEFERRED INFLOWS OF RESOURCES

GASB Statement No. 65, *Items Previously Reported as Assets and Liabilities*, requires certain items to be classified as either deferred outflows or deferred inflows of resources. Additionally, deferred outflows or deferred inflows of resources are also required by other GASB statements. While all deferred outflows or deferred inflows of resources applicable to the Commonwealth are listed below, see Notes 16, 17, 19, and 38 for additional information regarding these items.

Deferred Outflows

Deferred outflows of resources are a consumption of assets by the government that is applicable to a future reporting period.

Deferred Inflows

Deferred inflows of resources are an acquisition of assets by the government that is applicable to a future reporting period.

The following tables summarize deferred outflows and deferred inflows of resources as of June 30, 2019.

Government-wide Statements

(Dollars in Thousands)	Primary Government			
	Governmental Activities	Business-type Activities	Total	Total Component Units
Deferred Outflows of Resources				
Effective Hedges in a Loss Position	$ —	$ —	$ —	$ 3,147
Loss on Refunding of Debt	72,669	—	72,669	343,188
Government Acquisition-Goodwill	—	—	—	15,568
Pension Related	524,860	17,305	542,165	340,257
Other Postemployment Benefit Related	170,642	5,539	176,181	153,269
Total Deferred Outflows of Resources	$ 768,171	$ 22,844	$ 791,015	$ 855,429
Deferred Inflows of Resources				
Service Concession Arrangements	$ 3,550,488	$ —	$ 3,550,488	$ 47,695
Gain on Refunding of Debt	20	—	20	39,783
Pension Related	476,659	12,215	488,874	277,870
Other Postemployment Benefit Related	465,862	14,845	480,707	373,779
Irrevocable Split-Interest Agreements Related	—	—	—	14,882
Total Deferred Inflows of Resources	$ 4,493,029	$ 27,060	$ 4,520,089	$ 754,009

Fund Statements

(Dollars in Thousands)	Primary Government - Governmental Funds					
	General	Commonwealth Transportation	Federal Trust	Literary	Nonmajor Governmental Funds	Total Governmental Funds
Deferred Outflows of Resources						
Total Deferred Outflows of Resources	$ —	$ —	$ —	$ —	$ —	$ —
Deferred Inflows of Resources						
Service Concession Arrangements	$ —	$ 610,928	$ —	$ —	$ —	$ 610,928
Revenues Considered Unavailable	1,129,195	67,666	84,893	25,066	34,791	1,341,611
Total Deferred Inflows of Resources	$ 1,129,195	$ 678,594	$ 84,893	$ 25,066	$ 34,791	$ 1,952,539

(Continued on next page)

(Dollars in Thousands)	Business-type Activities					
	Enterprise Funds					
	Virginia Lottery	Virginia College Savings Plan	Nonmajor	Total Business-type Activities	Internal Service Funds	Private Purpose Trust Funds
Deferred Outflows of Resources						
Pension Related	$ 2,798	$ 1,601	$ 12,906	$ 17,305	$ 8,468	$ 5
Other Postemployment Benefit Related	855	421	4,263	5,539	2,271	1
Total Deferred Outflows of Resources	$ 3,653	$ 2,022	$ 17,169	$ 22,844	$ 10,739	$ 6
Deferred Inflows of Resources						
Pension Related	$ 2,526	$ 879	$ 8,810	$ 12,215	$ 6,885	$ 4
Other Postemployment Benefit Related	2,462	879	11,504	14,845	5,998	3
Total Deferred Outflows of Resources	$ 4,988	$ 1,758	$ 20,314	$ 27,060	$ 12,883	$ 7

(Dollars in Thousands)	Component Units					
	Virginia Housing Development Authority	Virginia Public School Authority	Virginia Resources Authority	Virginia College Building Authority	Nonmajor Component Units	Total Component Units
Deferred Outflows of Resources						
Effective Hedges in a Loss Position	$ —	$ —	$ —	$ —	$ 3,147	$ 3,147
Loss on Refunding of Debt	—	93,352	63,647	30,321	155,868	343,188
Government Acquisition-Goodwill	—	—	—	—	15,568	15,568
Pension Related	—	—	90	—	340,167	340,257
Other Postemployment Benefit Related	4,711	—	13	—	148,545	153,269
Total Deferred Inflows of Resources	$ 4,711	$ 93,352	$ 63,750	$ 30,321	$ 663,295	$ 855,429
Deferred Inflows of Resources						
Service Concession Arrangements	$ —	$ —	$ —	$ —	$ 47,695	$ 47,695
Gain on Refunding of Debt	—	—	31,099	—	8,684	39,783
Pension Related	—	—	129	—	277,741	277,870
Other Postemployment Benefit Related	187	—	17	—	373,575	373,779
Irrevocable Split-Interest Agreements Related	—	—	—	—	14,882	14,882
Total Deferred Inflows of Resources	$ 187	$ —	$ 31,245	$ —	$ 722,577	$ 754,009

16. DERIVATIVES

GASB Statement No. 53, *Accounting and Financial Reporting for Derivative Instruments,* requires additional reporting and disclosures for derivative instruments.

Primary Government

Derivative instruments are financial contracts whose values depend on the values of one or more underlying assets, reference rates or financial indexes. They include futures, forwards, options and swap contracts. Some traditional securities, such as structured notes, can have derivative-like characteristics. In this case, the return may be linked to one or more indexes and asset-backed securities, such as collateralized mortgage obligations (CMOs), which are sensitive to changes in interest rates and pre-payments. Futures, forwards, options and swaps generally are not recorded on the financial statements, whereas structured notes and asset-backed investments generally are recorded.

Virginia College Savings Plan (Virginia529)

GASB Statement No. 53 defines stable value investment vehicles as synthetic guaranteed investment contracts. Stable value funds are invested in a high quality, diversified, intermediate term, fixed income portfolio that is protected against interest rate volatility by wrap or investment contracts from banks and insurance companies that guarantee the payment of benefits at book value (cost plus accrued interest), which enables the entire investment to be carried at its book value. The Virginia529 utilizes stable value investments in both the Prepaid529 Program (major enterprise fund) and Invest529 Program (Private Purpose Trust Fund). Virginia529's stable value investments meet the definition of fully benefit-responsive synthetic guaranteed investment contracts and are reported at contract value. As of June 30, 2019, Virginia529 had the following stable value investments outstanding (dollars in thousands) in the respective programs as shown in the table below.

Stable Value Investments

Fund	Wrap Provider	Notional Amount	Effective Date	Maturity Date	Credit Rate	June 30, 2019 Fair Value	June 30, 2018 Fair Value
Enterprise	American General Life	$ 25,116	2/21/2014	Open ended	2.4%	$ 127,845	$ 134,489
	Nationwide Life Insurance	23,929	4/19/2018	Open ended	2.5%		
	RGA	25,384	6/22/2016	Open ended	2.5%		
	State Street Bank	25,373	5/1/2002	Open ended	2.9%		
	Voya Retirement and Annuity	25,930	12/3/2002	Open ended	2.9%		
Private Purpose	American General Life	$ 185,912	1/16/2014	Open ended	2.5%	$ 1,131,010	$ 989,144
	Nationwide Life Insurance	186,103	1/29/2018	Open ended	3.0%		
	Prudential Retirement Insurance & Annuity	186,018	1/30/2014	Open ended	2.7%		
	RGA	185,895	8/28/2015	Open ended	2.6%		
	State Street Bank	185,904	5/1/2002	Open ended	2.6%		
	Voya Retirement And Annuity	185,906	10/5/2012	Open ended	2.5%		

The following table (dollars in thousands) contains information relating to fair value, changes in fair value, and notional value for U.S. Treasury Futures Contracts.

Investment Derivatives - U.S. Treasury Futures Contracts

	Changes in Fair Value		Fair Value at June 30, 2019		
Fund	Classification	Amount	Classification	Amount	Notional Amount
Enterprise	Revenue	$ (161)	Investment	$ 247	$ 18,246

Pursuant to its investment management agreement, Advent Capital Management, LLC (Advent) may invest in derivatives for hedging purposes or for efficient portfolio management. Synthetic positions are not allowed and the use of derivatives should not be considered as an alpha generator. Advent primarily uses forward foreign exchange contracts to hedge the value of investments denominated in non-U.S. dollar currencies. Credit risk of exchange traded currency contracts lies with the clearinghouse of the exchange at which the contracts are traded, while credit risk of currency contracts traded over the counter lies with the counterparty. Counterparty risk exposure is generally equal to the unrealized gain on in-the-money contracts. The following table (dollars in thousands) contains a breakdown of these forward contracts by currency.

Prepaid529 Currency Forwards

Currency	Cost	Foreign Exchange Purchases	Foreign Exchange Sales	Market Value
British Pound Sterling	$ (1,494)	$ —	$ (1,495)	$ (1,495)
Euro	(18,918)	246	(19,470)	(19,224)
Hong Kong Dollar	(8,482)	—	(8,511)	(8,511)
Japanese Yen	(4,660)	2,571	(7,281)	(4,710)
Swiss Franc	(4,407)	—	(4,550)	(4,550)
U.S. Dollar	37,961	40,726	(2,765)	37,961
Total	$ —	$ 43,543	$ (44,072)	$ (529)

Additional information is available in the Virginia529 separately issued financial statements, which may be obtained at www.virginia529.com.

Virginia Retirement System

All derivatives held by the Virginia Retirement System (the System) are considered investments. The fair value of all derivative financial instruments is reported on a net basis on the Statement of Fiduciary Net Position. The derivative instruments are either subject to an enforceable master netting arrangement or similar agreement. The master netting arrangements allow the System to net applicable liabilities or payment obligations to counterparties to the derivative contracts against amounts owed to the System by the counterparties.

The System holds investments in swaps, options and futures and enters into forward foreign currency exchange contracts. Futures, currency forwards and options contracts provide the System with the opportunity to build passive benchmark positions, manage portfolio duration in relation to various benchmarks, adjust portfolio yield curve exposure and gain market exposure to various indexes in a more efficient way and at lower transaction costs. Derivatives that are exchange-traded are not subject to credit risk, but all over-the-counter derivatives, such as swaps and currency forwards, do expose the System to counterparty credit risk. Counterparty credit risk for the System's investments in derivatives instruments is summarized in the table on page 130. Market risks arise from adverse changes in market prices, interest rates and foreign exchange rates. The System's level of exposure to interest rate risk through derivative instruments and the System's investments in derivative instruments as of June 30, 2019, are summarized in the tables below (dollars in thousands).

Derivative Investments Summary

Investment	Net Appreciation/ (Depreciation) in Fair Value for the Fiscal Year Ended June 30, 2019	Fair Value June 30, 2019		
Derivatives (by Type)	Amount	Classification	Amount	Notional (Dollars)
Commodity Futures Long	$ 208	Equity Securities	$ 208	$ 2,403
Commodity Futures Short	(66)	Equity Securities	—	—
Credit Default Swaps Bought	56	Debt Securities	1,403	35,447
Credit Default Swaps Written	2,420	Debt Securities	197	45,200
Fixed-Income Futures Long	27,735	Debt Securities	30,607	1,804,401
Fixed-Income Futures Short	(18,921)	Debt Securities	(21,957)	(1,500,781)
Foreign Currency Futures Short	(348)	Debt Securities	(348)	(33,596)
Foreign Currency Options Written	134	Equity Securities	(59)	(5,600)
FX Forwards	(18,142)	Investment Sales/Purchases	6,242	4,554,076
Index Futures Long	44,032	Equity Securities	18,510	935,970
Index Futures Short	(1,009)	Equity Securities	(823)	(58,572)
Pay Fixed Foreign Currency Swaps	—	Debt Securities	—	1,455
Receive Fixed Foreign Currency Swaps	3,099	Debt Securities	3,099	3,099
Pay Fixed-Interest Rate Swaps	(10,540)	Debt Securities	(8,396)	577,373
Receive Fixed-Interest Rate Swaps	16,108	Debt Securities	12,445	513,273
Swaptions Written	2	Equity Securities	(3)	(21,400)
Total Return Bond Index Swaps	1,304	Equity Securities	949	80,522
Total Return Equity Index Swaps	5,686	Equity Securities	6,700	111,857
Total	$ 51,758		$ 48,774	

Derivative Instruments Subject to Interest Rate Risk

		Investment Maturities (in years)			
Investment Type	Fair Value June 30, 2019	Under 1	1-5	6-10	Greater than 10
Credit Default Swaps Bought	$ 1,403	$ —	$ 1,403	$ —	$ —
Credit Default Swaps Written	197	(4)	201	—	—
Receive Fixed Foreign Currency Swaps	3,099	—	3,099	—	—
Pay Fixed Interest Rate Swaps	(8,396)	(603)	(3,673)	(4,120)	—
Receive Fixed Interest Rate Swaps	12,445	(271)	8,306	4,351	59
Total	$ 8,748	$ (878)	$ 9,336	$ 231	$ 59

Futures Contracts

Futures contracts are contracts to deliver or receive securities at a specified future date and at a specified price or yield. Futures contracts are traded on organized exchanges (exchange-traded) and require an initial margin (collateral) in the form of cash or marketable securities. The net change in the futures contract value is settled daily, in cash, with the exchanges. The net gains or losses resulting from the daily settlements are included in the Statement of Changes in Fiduciary Net Position. Holders of futures contracts look to the exchange for performance under the contract and not to the entity holding the offsetting futures position. Accordingly, the amount at risk posed by nonperformance of counterparties to futures contracts is minimal. Information on the System's investments in fixed income, foreign currency, commodities, and equity index futures as of June 30, 2019, is shown in the Summary table on the previous page (dollars in thousands).

Currency Forwards

Currency forwards represent foreign exchange contracts and are used by the System to effect settlements and to protect the base currency ($U.S.) value of portfolio assets denominated in foreign currencies against fluctuations in the exchange rates of those currencies. A forward foreign currency exchange contract is a commitment to purchase or sell a foreign currency at a future date at a negotiated price. The credit risk of currency contracts that are exchange-traded lies with the clearinghouse of the exchange where the contracts are traded. The credit risk of currency contracts traded over the counter lies with the counterparty, and exposure usually is equal to the unrealized profit on in-the-money contracts. The market risk in foreign currency contracts is related to adverse movements in currency exchange rates. The gain or loss arising from the difference between the original contracts and the closing of such contracts is included in the net realized gains or losses on foreign currency-related transactions in the Statement of Changes in Fiduciary Net Position. Information on the System's currency forward contracts as of June 30, 2019, is shown in the following table and in the Summary table on the previous page.

Currency Forwards

as of June 30

(Dollars in Thousands)

Currency	Cost	Pending Foreign Exchange Purchases	Pending Foreign Exchange Sales	Fair Value 2019	Fair Value 2018
Argentine Peso	$ 337	$ 42,093	$ (41,374)	$ 719	(1,580)
Australian Dollar	(323,869)	174,732	(497,553)	(322,821)	49,207
Brazilian Real	4,652	27,501	(22,418)	5,083	(44,240)
British Pound Sterling	(748,028)	189,325	(935,320)	(745,995)	(613,241)
Canadian Dollar	(475,215)	291,808	(767,996)	(476,188)	(239,768)
Chilean Peso	(5,242)	20,129	(25,459)	(5,330)	6,205
Chinese Yuan Renminbi	(45,785)	5,844	(52,053)	(46,209)	(46,367)
Chinese Yuan Renminbi HK	1,232	35,177	(34,988)	189	(14,282)
Colombian Peso	18,058	25,688	(7,070)	18,618	9,451
Czech Koruna	34,377	45,647	(10,104)	35,543	53,882
Danish Krone	(60,522)	11,789	(72,397)	(60,608)	(71,218)
Egyptian Pound	7,963	16,807	(8,080)	8,727	8,427
Euro Currency Unit	(1,493,896)	546,622	(2,046,534)	(1,499,912)	(1,816,748)
Hong Kong Dollar	(170,681)	15,229	(185,717)	(170,488)	(181,446)
Hungarian Forint	(4,985)	9,491	(14,489)	(4,998)	(12,192)
Indian Rupee	10,595	11,970	(1,294)	10,676	(6,011)
Indonesian Rupiah	(17,096)	11,436	(28,517)	(17,081)	3,515
Israeli Shekel	(21,630)	7,693	(29,381)	(21,688)	(25,389)
Japanese Yen	(668,515)	395,550	(1,059,969)	(664,419)	(1,150,961)
Kazakhstan Tenge	269	4,658	(4,327)	331	2,578
Malaysian Ringgit	6,314	14,630	(8,338)	6,292	(787)
Mexican Peso	29,159	52,873	(23,680)	29,193	40,960
New Taiwan Dollar	(4,165)	6,354	(10,594)	(4,240)	(2,128)
New Zealand Dollar	326,332	420,384	(86,962)	333,422	86,033
Nigerian Naira	8,768	11,467	(2,385)	9,082	6,427
Norwegian Krone	(295,788)	74,063	(373,707)	(299,644)	(222,461)
Omani Rial	(5,062)	—	(5,080)	(5,080)	(1,384)
Peruvian Sol	(7,021)	29,602	(36,632)	(7,030)	(3,454)
Philippine Peso	3,390	7,657	(4,216)	3,441	(8,199)
Polish Zloty	15,936	25,206	(9,105)	16,101	7,160
Romanian Leu	(4,388)	5,154	(9,591)	(4,437)	(9,681)
Russian Ruble (New)	(10,663)	11,793	(22,852)	(11,059)	12,888
Saudi Arabia Riyal	1	1,373	(1,373)	—	(1,373)
Singapore Dollar	(318,065)	29,061	(349,629)	(320,568)	(253,348)
South African Rand	(20,044)	20,844	(41,127)	(20,283)	(21,367)
South Korean Won	(17,579)	6,619	(24,399)	(17,780)	(5,234)
Swedish Krona	(88,869)	196,733	(283,915)	(87,182)	(289,244)
Swiss Franc	(256,704)	79,773	(335,051)	(255,278)	(266,256)
Thai Baht	8,519	20,052	(11,104)	8,948	23,590
Turkish Lira	4,578	10,923	(6,205)	4,718	30,073
Ukranian Hryvnia	1,035	5,798	(4,618)	1,180	—
U.S. Dollar	4,582,297	7,371,710	(2,789,413)	4,582,297	4,992,352
Total Forwards Subject to Foreign Currency Risk				$ 6,242	$ 24,389

Options Contracts

Options may be either exchange-traded or negotiated directly between two counterparties over the counter. Options grant the holder the right, but not the obligation, to purchase (call) or sell (put) a financial instrument at a specified price and within a specified period of time from the writer of the option.

As a purchaser of options, the System typically pays a premium at the outset. This premium is reflected as an asset on the financial statements. The System then retains the right, but not the obligation, to exercise the options and purchase the underlying financial instrument. Should the option not be exercised, it expires worthless, and the premium is recorded as a loss.

A writer of options assumes the obligation to deliver or receive the underlying financial instrument on exercise of the option. Certain option contracts may involve cash settlements based on specified indexes such as stock indexes. As a writer of options, the System receives a premium at the outset. This premium is reflected as a liability on the financial statements, and the System bears the risk of an unfavorable change in the price of the financial instrument underlying the option. Information on the System's investments in foreign currency options as of June 30, 2019, is shown in the Summary table on page 123.

Swap Agreements

Swaps are negotiated contracts between two counterparties for the exchange of payments at certain intervals over a predetermined timeframe. The payments are based on a notional principal amount and calculated using either fixed or floating interest rates or total returns from certain instruments or indexes. Swaps are used to manage risk and enhance returns. To reduce the risk of counterparty nonperformance, the System generally requires collateral on any material gains from these transactions. During fiscal year 2019, the System had activity in credit default, foreign currency, interest rate and total return swaps. Gains and losses on swaps are determined based on fair values and are recorded in the Statement of Changes in Fiduciary Net Position. Information on the System's swap balances as of June 30, 2019, is shown in the Summary table on page 123, and the terms, fair values and notional values of the System's investments in swap agreements that are highly sensitive to interest rate changes are disclosed in the following tables (dollars in thousands).

Derivatives Instruments Highly Sensitive to Interest Rate Changes

Investment Type	Reference Rate	Fair Value June 30, 2019	Notional Amount
Foreign Currency Swaps	Receive Fixed Turkish Lira 20.79%, Pay Variable 3-month LIBOR USD	$ 403	$ 403
Foreign Currency Swaps	Receive Fixed Turkish Lira 22.38%, Pay Variable 3-month LIBOR USD	2,696	2,696
Foreign Currency Swaps	Receive Variable 3-month LIBOR USD, Pay Fixed Turkish Lira 23.67%	—	1,455
Subtotal Foreign Currency Swaps		**3,099**	**4,554**

Investment Type	Reference Rate	Fair Value June 30, 2019	Notional Amount
Interest Rate Swaps	Receive Fixed 1.81%, Pay Variable Israel 3-month TELBOR	220	5,271
Interest Rate Swaps	Receive Variable Israel 3-month TELBOR, Pay Fixed 0.26%	2	27,618
Interest Rate Swaps	Receive Fixed 1.05%, Pay Variable Israel 3-month TELBOR	81	5,271
Interest Rate Swaps	Receive Fixed 7.407%, Pay Variable 28-day MTIIE	14	1,827
Interest Rate Swaps	Receive Fixed 8.58%, Pay Variable 28-day MTIIE	34	2,866
Interest Rate Swaps	Receive Fixed 8.83%, Pay Variable 28-day MTIIE	75	4,996
Interest Rate Swaps	Receive Fixed 8.67%, Pay Variable 28-day MTIIE	32	2,477
Interest Rate Swaps	Receive Fixed 7.97%, Pay Variable 28-day MTIIE	33	5,742
Interest Rate Swaps	Receive Fixed 7.51%, Pay Variable 28-day MTIIE	27	7,696
Interest Rate Swaps	Receive Variable Chilean Peso 1-day CLICP, Pay Fixed 3.95%	(54)	898
Interest Rate Swaps	Receive Variable Chilean Peso 1-day CLICP, Pay Fixed 3.95%	(54)	898
Interest Rate Swaps	Receive Fixed 5.17%, Pay Variable 1-day Colombia IBR	19	692
Interest Rate Swaps	Receive Fixed 5.83%, Pay Variable 1-day Colombia IBR	54	1,165
Interest Rate Swaps	Receive Fixed 7.42%, Pay Variable Brazil 1-day CDI	122	6,001
Interest Rate Swaps	Receive Fixed 7.71%, Pay Variable Brazil 1-day CDI	21	776
Interest Rate Swaps	Receive Fixed 7.265%, Pay Variable Brazil 1-day CDI	—	879
Interest Rate Swaps	Receive Variable Brazil 1-day CDI, Pay Fixed 6.25%	(42)	42,425
Interest Rate Swaps	Receive Variable Brazil 1-day CDI, Pay Fixed 6.93%	—	14,507
Interest Rate Swaps	Receive Variable Brazil 1-day CDI, Pay Fixed 7.05%	(7)	444
Interest Rate Swaps	Receive Variable Brazil 1-day CDI, Pay Fixed 8.635%	(526)	8,923
Interest Rate Swaps	Receive Fixed 6.26%, Pay Variable Brazil 1-day CDI	—	2,192
Interest Rate Swaps	Receive Fixed 6.93%, Pay Variable Brazil 1-day CDI	7	470
Interest Rate Swaps	Receive Fixed 7.42%, Pay Variable Brazil 1-day CDI	161	6,601
Interest Rate Swaps	Receive Fixed 7.48%, Pay Variable Brazil 1-day CDI	69	3,575
Interest Rate Swaps	Receive Fixed 7.80%, Pay Variable Brazil 1-day CDI	109	4,357
Interest Rate Swaps	Receive Fixed 8.64%, Pay Variable Brazil 1-day CDI	141	2,374
Interest Rate Swaps	Receive Fixed 1.50%, Pay Variable Czech Krona 6-month PRIBOR	(123)	18,350
Interest Rate Swaps	Receive Fixed 2.00%, Pay Variable Czech Krona 6-month PRIBOR	(136)	3,983
Interest Rate Swaps	Receive Fixed 1.78%, Pay Variable Czech Krona 6-month PRIBOR	8	2,014
Interest Rate Swaps	Receive Fixed 2.25%, Pay Variable Czech Krona 6-month PRIBOR	185	34,485
Interest Rate Swaps	Receive Fixed 2.25%, Pay Variable 6-month Hungary BUBOR	322	6,457
Interest Rate Swaps	Receive Fixed 2.00%, Pay Variable 6-month Hungary BUBOR	141	3,503
Interest Rate Swaps	Receive Fixed 1.20%, Pay Variable 6-month Hungary BUBOR	155	13,086
Interest Rate Swaps	Receive Fixed 8.32%, Pay Variable 28-day MTIIE	142	2,655
Interest Rate Swaps	Receive Fixed 6.71%, Pay Variable 28-day MTIIE	(147)	2,275
Interest Rate Swaps	Receive Fixed 8.28%, Pay Variable 28-day MTIIE	59	1,291
Interest Rate Swaps	Receive Fixed 8.31%, Pay Variable 28-day MTIIE	140	2,858
Interest Rate Swaps	Receive Fixed 8.01%, Pay Variable 28-day MTIIE	157	4,778
Interest Rate Swaps	Receive Fixed 8.34%, Pay Variable 28-day MTIIE	46	1,166
Interest Rate Swaps	Receive Fixed 8.81%, Pay Variable 28-day MTIIE	817	14,090
Interest Rate Swaps	Receive Fixed 8.80%, Pay Variable 28-day MTIIE	334	5,731
Interest Rate Swaps	Receive Fixed 8.97%, Pay Variable 28-day MTIIE	363	5,606
Interest Rate Swaps	Receive Fixed 8.61%, Pay Variable 28-day MTIIE	217	2,863
Interest Rate Swaps	Receive Fixed 8.00%, Pay Variable 28-day MTIIE	429	12,690
Interest Rate Swaps	Receive Fixed 7.99%, Pay Variable 28-day MTIIE	53	1,598
Interest Rate Swaps	Receive Fixed 8.24%, Pay Variable 28-day MTIIE	103	2,082
Interest Rate Swaps	Receive Fixed 8.54%, Pay Variable 28-day MTIIE	103	1,400
Interest Rate Swaps	Receive Fixed 8.38%, Pay Variable 28-day MTIIE	24	8,151
Interest Rate Swaps	Receive Fixed 7.68%, Pay Variable 28-day MTIIE	13	1,624
Interest Rate Swaps	Receive Fixed 7.89%, Pay Variable 28-day MTIIE	5	2,103
Interest Rate Swaps	Receive Fixed 2.25%, Pay Variable Poland 6-month WIBOR	(165)	37,005
Interest Rate Swaps	Receive Fixed 3.25%, Pay Variable Poland 6-month WIBOR	108	1,126
Interest Rate Swaps	Receive Fixed 3.00%, Pay Variable Poland 6-month WIBOR	14	188
Interest Rate Swaps	Receive Fixed 2.25%, Pay Variable Poland 6-month WIBOR	112	6,194
Interest Rate Swaps	Receive Fixed 2.25%, Pay Variable Poland 6-month WIBOR	44	2,387
Interest Rate Swaps	Receive Fixed 2.00%, Pay Variable Poland 6-month WIBOR	98	14,695
Interest Rate Swaps	Receive Fixed 1.50%, Pay Variable 3-month LIBOR	(192)	6,700
Interest Rate Swaps	Receive Fixed 1.75%, Pay Variable 3-month LIBOR	(259)	2,500
Interest Rate Swaps	Receive Fixed 2.50%, Pay Variable 3-month LIBOR	17	290
Interest Rate Swaps	Receive Fixed 3.00%, Pay Variable 3-month LIBOR	124	1,350

Continued on next page

Derivatives Instruments Highly Sensitive to Interest Rate Changes
(Continued from previous page)

Investment Type	Reference Rate	Fair Value June 30, 2019	Notional Amount
Interest Rate Swaps	Receive Fixed 3.00%, Pay Variable 3-month LIBOR	278	4,710
Interest Rate Swaps	Receive Fixed 7.75%, Pay Variable 3-month JIBAR	60	4,829
Interest Rate Swaps	Receive Fixed 7.25%, Pay Variable 3-month JIBAR	11	915
Interest Rate Swaps	Receive Fixed 8.75%, Pay Variable 3-month JIBAR	298	3,936
Interest Rate Swaps	Receive Variable Czech Krona 6-month PRIBOR, Pay Fixed 2.00%	(28)	1,244
Interest Rate Swaps	Receive Variable 6-month Hungary BUBOR, Pay Fixed 1.25%	(84)	9,765
Interest Rate Swaps	Receive Variable 28-day MTIIE, Pay Fixed 9.05%	(1,205)	11,384
Interest Rate Swaps	Receive Variable 28-day MTIIE, Pay Fixed 9.21%	(138)	1,171
Interest Rate Swaps	Receive Variable 28-day MTIIE, Pay Fixed 9.08%	(383)	3,529
Interest Rate Swaps	Receive Variable 28-day MTIIE, Pay Fixed 9.09%	(231)	2,113
Interest Rate Swaps	Receive Variable 28-day MTIIE, Pay Fixed 8.55%	(150)	2,092
Interest Rate Swaps	Receive Variable 28-day MTIIE, Pay Fixed 8.54%	(122)	1,718
Interest Rate Swaps	Receive Variable 28-day MTIIE, Pay Fixed 8.43%	(123)	1,952
Interest Rate Swaps	Receive Variable 28-day MTIIE, Pay Fixed 8.49%	(22)	1,905
Interest Rate Swaps	Receive Variable 28-day MTIIE, Pay Fixed 7.73%	(286)	19,202
Interest Rate Swaps	Receive Variable 28-day MTIIE, Pay Fixed 7.75%	(125)	8,016
Interest Rate Swaps	Receive Variable 28-day MTIIE, Pay Fixed 7.9%	(71)	2,800
Interest Rate Swaps	Receive Variable 28-day MTIIE, Pay Fixed 8.26%	(14)	8,151
Interest Rate Swaps	Receive Variable Poland 6-month WIBOR, Pay Fixed 1.94%	(13)	3,003
Interest Rate Swaps	Receive Variable 3-month LIBOR, Pay Fixed 2.75%	(256)	5,930
Interest Rate Swaps	Receive Variable 3-month LIBOR, Pay Fixed 3.00%	(461)	49,960
Interest Rate Swaps	Receive Variable 3-month JIBAR, Pay Fixed 9.50%	(101)	844
Interest Rate Swaps	Receive Variable 3-month JIBAR, Pay Fixed 8.50%	(28)	440
Interest Rate Swaps	Receive Variable 3-month JIBAR, Pay Fixed 8.25%	(1)	28
Interest Rate Swaps	Receive Variable 3-month JIBAR, Pay Fixed 7.75%	(87)	2,908
Interest Rate Swaps	Receive Variable 3-month JIBAR, Pay Fixed 7.52%	(36)	1,752
Interest Rate Swaps	Receive Variable 3-month JIBAR, Pay Fixed 8.00%	(36)	1,610
Interest Rate Swaps	Receive Fixed 12.25%, Pay Variable Brazil 1-day CDI	312	1,696
Interest Rate Swaps	Receive Fixed 9.76%, Pay Variable Brazil 1-day CDI	203	2,087
Interest Rate Swaps	Receive Fixed 10.30%, Pay Variable Brazil 1-day CDI	190	1,670
Interest Rate Swaps	Receive Fixed 9.98%, Pay Variable Brazil 1-day CDI	223	4,253
Interest Rate Swaps	Receive Fixed 10.33%, Pay Variable Brazil 1-day CDI	1,309	11,402
Interest Rate Swaps	Receive Fixed 9.60%, Pay Variable Brazil 1-day CDI	453	4,696
Interest Rate Swaps	Receive Fixed 11.35%, Pay Variable Brazil 1-day CDI	122	783
Interest Rate Swaps	Receive Fixed 8.79%, Pay Variable Brazil 1-day CDI	481	12,785
Interest Rate Swaps	Receive Fixed 10.30%, Pay Variable Brazil 1-day CDI	32	261
Interest Rate Swaps	Receive Fixed 6.80%, Pay Variable Brazil 1-day CDI	(1)	5,323
Interest Rate Swaps	Receive Fixed 7.83%, Pay Variable Brazil 1-day CDI	332	12,994
Interest Rate Swaps	Receive Fixed 7.19%, Pay Variable Brazil 1-day CDI	28	1,383
Interest Rate Swaps	Receive Fixed 7.22%, Pay Variable Brazil 1-day CDI	25	1,435
Interest Rate Swaps	Receive Fixed 7.18%, Pay Variable Brazil 1-day CDI	14	809
Interest Rate Swaps	Receive Fixed 7.21%, Pay Variable Brazil 1-day CDI	132	7,514
Interest Rate Swaps	Receive Fixed 7.22%, Pay Variable Brazil 1-day CDI	41	2,322
Interest Rate Swaps	Receive Fixed 8.48%, Pay Variable Brazil 1-day CDI	170	3,157
Interest Rate Swaps	Receive Fixed 8.68%, Pay Variable Brazil 1-day CDI	351	5,792
Interest Rate Swaps	Receive Fixed 6.92%, Pay Variable Brazil 1-day CDI	80	5,792
Interest Rate Swaps	Receive Variable Brazil 1-day CDI, Pay Fixed 9.64%	(71)	4,227
Interest Rate Swaps	Receive Variable Brazil 1-day CDI, Pay Fixed 10.46%	(601)	4,723
Interest Rate Swaps	Receive Variable Brazil 1-day CDI, Pay Fixed 7.06%	(40)	8,375
Interest Rate Swaps	Receive Variable Brazil 1-day CDI, Pay Fixed 9.97%	(37)	720
Interest Rate Swaps	Receive Variable Brazil 1-day CDI, Pay Fixed 11.03%	(140)	1,252
Interest Rate Swaps	Receive Variable Brazil 1-day CDI, Pay Fixed 10.42%	(848)	8,689
Interest Rate Swaps	Receive Variable Brazil 1-day CDI, Pay Fixed 10.09%	(323)	2,844
Interest Rate Swaps	Receive Variable Brazil 1-day CDI, Pay Fixed 8.70%	(221)	3,575
Interest Rate Swaps	Receive Variable Brazil 1-day CDI, Pay Fixed 6.98%	(103)	6,993
Interest Rate Swaps	Receive Variable Brazil 1-day CDI, Pay Fixed 6.86%	(278)	21,265
Interest Rate Swaps	Receive Variable Brazil 1-day CDI, Pay Fixed 6.4075%	29	119,656
Interest Rate Swaps	Receive Fixed 12.23%, Pay Variable Brazil 1-day CDI	(49)	626
Interest Rate Swaps	Receive Fixed 7.53%, Pay Variable 28-day MTIIE	25	3,308
Interest Rate Swaps	Receive Fixed 8.71%, Pay Variable 28-day MTIIE	14	1,084
Interest Rate Swaps	Receive Fixed 8.71%, Pay Variable 28-day MTIIE	23	1,806
Interest Rate Swaps	Receive Variable 28-day MTIIE, Pay Fixed 5.25%	(4)	573
Interest Rate Swaps	Receive Fixed 3.41%, Pay Variable 6-month Thai Baht fixing rate	5	163

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Derivatives Instruments Highly Sensitive to Interest Rate Changes
(Continued from previous page)

Investment Type	Reference Rate	Fair Value June 30, 2019	Notional Amount
Interest Rate Swaps	Receive Fixed 3.41%, Pay Variable 6-month Thai Baht fixing rate	5	163
Interest Rate Swaps	Receive Fixed 5.29%, Pay Variable 1-day Colombia IBR	3	1,257
Interest Rate Swaps	Receive Fixed 6.12%, Pay Variable 1-day Colombia IBR	53	742
Interest Rate Swaps	Receive Fixed 5.00%, Pay Variable 28-day MTIIE	(10)	994
Interest Rate Swaps	Receive Fixed 2.58%, Pay Variable 6-month Thai Baht fixing rate	17	372
Interest Rate Swaps	Receive Fixed 5.32%, Pay Variable 1-day Colombia IBR	2	187
Interest Rate Swaps	Receive Fixed 2.02%, Pay Variable 6-month Thai Baht fixing rate	3	620
Interest Rate Swaps	Receive Fixed 2.58%, Pay Variable 6-month Thai Baht fixing rate	25	496
Interest Rate Swaps	Receive Fixed 1.93%, Pay Variable 6-month Thai Baht fixing rate	8	1,271
Interest Rate Swaps	Receive Variable Israel 3-month TELBOR, Pay Fixed 0.26%	1	34,515
Interest Rate Swaps	Receive Fixed 1.81%, Pay Variable Israel 3-month TELBOR	100	2,383
Interest Rate Swaps	Receive Variable 1-day Colombia IBR, Pay Fixed 4.65%	(12)	3,060
Interest Rate Swaps	Receive Fixed 4.95%, Pay Variable 1-day Colombia IBR	31	2,085
Interest Rate Swaps	Receive Fixed 4.81%, Pay Variable 1-day Colombia IBR	292	22,509
Interest Rate Swaps	Receive Variable 1-day Colombia IBR, Pay Fixed 4.89%	(282)	19,021
Interest Rate Swaps	Receive Variable Israel 3-month TELBOR, Pay Fixed 0.59%	(20)	6,028
Interest Rate Swaps	Receive Fixed 5.83%, Pay Variable 1-day Colombia IBR	4	98
Interest Rate Swaps	Receive Fixed 1.92%, Pay Variable 6-month Thai Baht fixing rate	8	740
Interest Rate Swaps	Receive Fixed 5.88%, Pay Variable 1-day Colombia IBR	47	945
Interest Rate Swaps	Receive Fixed 7.97%, Pay Variable 28-day MTIIE	6	1,139
Interest Rate Swaps	Receive Fixed 3.54%, Pay Variable Chilean Peso 6-month CLICP	124	3,913
Interest Rate Swaps	Receive Variable Malaysian Ringgit 3-month KLIBOR, Pay Fixed 3.77%	(33)	3,097
Interest Rate Swaps	Receive Variable Malaysian Ringgit 3-month KLIBOR, Pay Fixed 3.74%	(10)	968
Interest Rate Swaps	Receive Variable Malaysian Ringgit 3-month KLIBOR, Pay Fixed 3.76%	(18)	1,694
Interest Rate Swaps	Receive Variable Chilean Peso 6-month CLICP, Pay Fixed 3.57%	(8)	220
Interest Rate Swaps	Receive Fixed 3.54%, Pay Variable Chilean Peso 6-month CLICP	50	1,462
Interest Rate Swaps	Receive Variable Israel 3-month TELBOR, Pay Fixed 0.22%	9	35,553
Interest Rate Swaps	Receive Fixed 1.72%, Pay Variable Israel 3-month TELBOR	217	6,421
Interest Rate Swaps	Receive Fixed 4.96%, Pay Variable 1-day Colombia IBR	288	19,021
Interest Rate Swaps	Receive Variable 1-day Colombia IBR, Pay Fixed 4.64%	(85)	8,450
Interest Rate Swaps	Receive Variable 1-day Colombia IBR, Pay Fixed 4.65%	(131)	12,957
Interest Rate Swaps	Receive Fixed 6.57%, Pay Variable 1-day Colombia IBR	216	1,965
Interest Rate Swaps	Receive Fixed 4.28%, Pay Variable Chilean Peso 6-month CLICP	112	1,321
Interest Rate Swaps	Receive Fixed 5.31%, Pay Variable 1-day Colombia IBR	105	2,908
Interest Rate Swaps	Receive Fixed 2.10%, Pay Variable 6-month Thai Baht fixing rate	57	4,187
Interest Rate Swaps	Receive Fixed 4.04%, Pay Variable Chilean Peso 6-month CLICP	210	3,210
Interest Rate Swaps	Receive Fixed 0.97%, Pay Variable Israel 3-month TELBOR	62	5,524
Interest Rate Swaps	Receive Variable Israel 3-month TELBOR, Pay Fixed 0.45%	(11)	6,897
Interest Rate Swaps	Receive Variable 1-day Colombia IBR, Pay Fixed 4.49%	(299)	9,355
Interest Rate Swaps	Receive Fixed 5.83%, Pay Variable 1-day Colombia IBR	462	9,978
Interest Rate Swaps	Receive Fixed 1.94%, Pay Variable 6-month Thai Baht fixing rate	12	1,043
Interest Rate Swaps	Receive Fixed 2.18%, Pay Variable 6-month Thai Baht fixing rate	1	46
Interest Rate Swaps	Receive Variable Israel 3-month TELBOR, Pay Fixed 0.95%	(50)	5,215
Interest Rate Swaps	Receive Variable Israel 3-month TELBOR, Pay Fixed 0.96%	(52)	5,159
Interest Rate Swaps	Receive Fixed 3.33%, Pay Variable Malaysian Ringgit 3-month KLIBOR	(1)	653
Interest Rate Swaps	Receive Variable 1-day Colombia IBR, Pay Fixed 4.88%	(62)	4,303
Interest Rate Swaps	Receive Fixed 3.27%, Pay Variable Chilean Peso 6-month CLICP	(2)	1,053
Interest Rate Swaps	Receive Fixed 6.2%, Pay Variable 1-day Colombia IBR	16	221
Interest Rate Swaps	Receive Fixed 2.505%, Pay Variable 6-month Thai Baht fixing rate	23	525
Interest Rate Swaps	Receive Fixed 2.04%, Pay Variable 6-month Thai Baht fixing rate	14	2,446
Interest Rate Swaps	Receive Fixed 2.55%, Pay Variable 6-month Thai Baht fixing rate	55	1,011
Interest Rate Swaps	Receive Fixed 1.99%, Pay Variable 6-month Thai Baht fixing rate	86	6,564
Interest Rate Swaps	Receive Fixed 1.18%, Pay Variable Israel 3-month TELBOR	33	1,542
Interest Rate Swaps	Receive Variable 6-month Thai Baht fixing rate, Pay Fixed 2.1%	(15)	760
Interest Rate Swaps	Receive Fixed 2.20%, Pay Variable 6-month Thai Baht fixing rate	10	346
Interest Rate Swaps	Receive Fixed 1.93%, Pay Variable 6-month Thai Baht fixing rate	1	108
Interest Rate Swaps	Receive Fixed 1.84%, Pay Variable 6-month Thai Baht fixing rate	3	920
Interest Rate Swaps	Receive Fixed 1.96%, Pay Variable 6-month Thai Baht fixing rate	6	854
Subtotal Interest Rate Swaps		**4,049**	**1,090,650**

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Derivatives Instruments Highly Sensitive to Interest Rate Changes
(Continued from previous page)

Investment Type	Reference Rate	Fair Value June 30, 2019	Notional Amount
Total Return Bond Index Swaps	Receive Variable IBOXHY Index/ Pay Variable 3-month LIBOR	418	30,522
Total Return Bond Index Swaps	Receive Variable Barclays Capital US Aggregate Index/ Pay Variable 1-month LIBOR + 15 bps	531	50,000
Total Return Equity Index Swaps	Receive Variable BCMSIMHC Index/ Pay Variable 3-month LIBOR + 16 bps	122	2,385
Total Return Equity Index Swaps	Receive Variable BCMSIMHC Index/ Pay Variable 3-month LIBOR + 16 bps	181	4,114
Total Return Equity Index Swaps	Receive Variable MSCI ACWI IMI Index/ Pay Variable 3-month LIBOR + 31.7 bps	3,178	155
Total Return Equity Index Swaps	Receive Variable MSCI ACWI IMI Index/ Pay Variable 3-month LIBOR + 31.7 bps	805	39
Total Return Equity Index Swaps	Receive Variable MSCI ACWI IMI Index/ Pay Variable 3-month LIBOR + 31.7 bps	1,140	56
Total Return Equity Index Swaps	Receive Variable MSCI ACWI IMI Index/ Pay Variable 3-month LIBOR + 31.7 bps	596	29
Total Return Equity Index Swaps	Receive Variable MSCI ACWI IMI Index/ Pay Variable 3-month LIBOR + 31.7 bps	370	18
Total Return Equity Index Swaps	Receive Variable MIMUJPNN Index/ Pay Variable 3-month LIBOR + 8 bps	6	13,757
Total Return Equity Index Swaps	Receive Variable MIMUUKGN Index/ Pay Variable 3-month LIBOR + 10 bps	9	9,910
Total Return Equity Index Swaps	Receive Variable MIMUUSAG Index/ Pay Variable 3-month LIBOR + 10 bps	299	8,866
Total Return Equity Index Swaps	Receive Variable NDUEEGF Index/ Pay Variable 3-month LIBOR + 6 bps	(7)	19,997
Total Return Equity Index Swaps	Receive Variable MIMUUSAG Index/ Pay Variable 3-month LIBOR + 23 bps	—	8,866
Total Return Equity Index Swaps	Receive Variable NDUEEGF Index/ Pay Variable 3-month LIBOR + 17 bps	—	19,997
Total Return Equity Index Swaps	Receive Variable MIMUUKGN Index/ Pay Variable 3-month LIBOR + 20 bps	—	9,910
Total Return Equity Index Swaps	Receive Variable MIMUJPNN Index/ Pay Variable 3-month LIBOR - 15 bps	—	13,757
Subtotal Total Return Swaps		**7,648**	**192,378**
TOTAL		**$ 14,796**	**$ 1,287,582**

Derivative Instruments Subject to Counterparty Credit Risk

Counterparty	Percentage of Net	Moody's Ratings	S & P Ratings	Fitch Ratings
Goldman Sachs International	39.2%	A1	A+	A
Goldman Sachs Bank USA/New York NY	17.7%	A1	A+	A+
Barclays Bank PLC	12.8%	A2	A	A+
Deutsche Bank AG/London	10.3%	—	BBB+	BBB
Morgan Stanley Capital Services LLC	8.7%	A1	A+	—
Chicago Mercantile Exchange Inc.	5.5%	—	—	—
HSBC Bank USA NA/New York NY	3.6%	Aa2	AA-	AA-
Morgan Stanley & Co International PLC	1.3%	A1	A+	—
HSBC Securities Inc.	0.6%	—	AA-	—
Barclays Capital, Inc.	0.1%	—	A	—
Citigroup Global Markets Ltd.	0.1%	A1	A+	A
Citibank NA	0.1%	Aa3	A+	A+
Total	100.0%			

Derivative instruments are classified as Level 1 and Level 2 in the fair value hierarchy. Derivative instruments classified as Level 1 of the fair value hierarchy are valued using prices quoted in active markets for those securities. The derivative instruments in Level 1 consist of futures contracts on commodities, eurodollars, U.S. Treasury bonds and notes, non-U.S. government bonds, and U.S. and non-U.S. equity indexes. Derivative instruments classified as Level 2 of the fair value hierarchy are valued using a number of modeling approaches that take into account observable market levels, benchmark rates, and foreign exchange rates.

Additional information is available in the System's separately issued financial statements, which may be obtained from www.varetire.org.

Component Units

Investment Derivative Instruments

The Virginia Housing Development Authority (major component unit) enters into forward sales contracts for the delivery of GNMA and FNMA securities in order to lock in the sales price for the securitization of certain single-family mortgage loans. The contracts offset changes in interest rates between the time of the loan reservations and the securitization of such loans into GNMA and FNMA securities. These contracts are considered investment derivative instruments, such that their change in fair value is reported as investment derivative gains or losses in the accompanying financial statements. Fair values of the forwards are based on observable market prices for similar instruments traded on the secondary mortgage loan markets. The Authority's portfolio of investment derivatives is classified as Level 2 in the fair value hierarchy. The outstanding forward contracts, summarized by counterparty rating as of June 30, 2019, were as follows:

Counterparty Rating	Par	Concentration	Notional Amount	Market Value	Fair Value Asset (Liability)
A-1+/AA+	$ 154,000,000	36.4%	$ 158,107,305	$ 158,738,438	$ (631,133)
A-1/A+	135,500,000	32.0%	139,088,301	139,985,078	(896,777)
A-1/A+	92,000,000	21.7%	94,262,344	94,756,406	(494,062)
A-1/A	16,000,000	3.8%	16,347,969	16,393,750	(45,781)
Baa2/BBB	26,000,000	6.1%	26,733,594	26,884,063	(150,469)
	$ 423,500,000	100.0%	$ 434,539,513	$ 436,757,735	$ (2,218,222)

Investment Derivative Instruments – Ineffective Hedges

During fiscal year 2015, the University of Virginia (UVA) (nonmajor) refunded the Series 2003A bonds and the commercial paper associated with the fixed-payer interest rate swaps which terminated hedge accounting. The fixed-payer interest rate swaps were no longer effective hedges. As of June 30, 2019, the negative fair value of the swaps of $35.1 million is included in other liabilities and the change in fair value of negative $9.9 million was reported as investment earnings in the accompanying financial statements. During fiscal year 2015, UVA established two fixed-receiver interest rate swaps with a total notional amount of $128.0 million to provide a hedge against fixed interest rates on Series 2015B bonds. These swaps were reevaluated as of June 30, 2016, and determined to no longer be effective hedges. As of June 30, 2019, the positive fair value of the fixed-receiver interest rate swaps of $140,265 is included in other assets and the change in fair value of positive $2.9 million is included in investment earnings in the accompanying financial statements. The derivative instruments are classified as Level 2 of the fair value hierarchy. Additional information regarding the institution's derivative instruments is available at www.virginia.edu.

Hedging Derivative Instruments

At the beginning of the fiscal year, the Virginia Commonwealth University (VCU) (nonmajor) had two fixed-payer interest rate swaps with a notional amount of $51.8 million, which declines to $4.8 million at the termination date of November 1, 2030. The swaps were used as cash flow hedges by VCU in order to provide a hedge against changes in interest rates on a similar amount of VCU variable rate debt. The fair value of the swaps was calculated by Deutsche Bank using undisclosed proprietary methods. The swaps were entered into at a zero market value and no payments were made or received when they were initiated. In November 2018, VCU refunded its Series 2012A and 2012B bonds associated with the two fixed-payer interest rate swaps. At that time, the hedging relationship between the interest rate swap agreement and the bonds were terminated. At the time of termination, the fair market value of the swaps was $4.2 million. New bonds were issued to finance the termination payments of the two interest rate swaps associated with these bonds.

As of June 30, 2019 the Medical College of Virginia Hospitals (MCVH), which is a division of the Virginia Commonwealth University Health System Authority (a blended component unit of VCU), had two interest rate swap agreements with a notional amount of $115.8 million and another interest rate swap agreement with a notional amount of $61.3 million. The swaps are used as cash flow hedges by MCVH in order to provide a hedge against changes in interest rates on variable rate Series 2013A and 2013B bonds. The Series 2013A and 2013B bonds refunded prior Series 2005 and 2008 bonds that resulted in the termination of the prior hedging relationship between the interest rate swaps and the Series 2005 and 2008 bonds. At the time of the refunding in June 2013, the accumulated change in fair value of the interest rate swaps was negative $42.1 million and was included in the calculation of the deferred loss on refunding. There was also a reestablishment of hedge accounting on the new debt. As of June 30, 2019, the negative fair value of MCVH's swaps of $45.2 million is included in other liabilities and the cumulative change in fair value of MCVH's swaps of $3.1 million is included in deferred outflows of resources in the accompanying financial statements. The derivative instruments are classified as Level 2 of the fair value hierarchy. Additional information is available in the separately issued financial statements of the higher education institution.

Various foundations of higher education institutions have derivative instruments. The foundations follow FASB rather than GASB reporting requirements. Disclosures for the foundations' derivatives can be found in the separately issued financial statements of the foundations.

17. RETIREMENT AND PENSION SYSTEMS

A separately issued financial report that includes financial statements and required supplemental information for each of the individual plans discussed below is publicly available. Copies may be obtained from the Virginia Retirement System website at www.varetire.org.

A. Administration

The Virginia Retirement System (the System) is an independent agency of the Commonwealth that administers pension plans, other employee benefit plans, and other funds for Commonwealth employees, teachers, political subdivision employees, and other qualifying employees. The Board of Trustees is responsible for the general administration and operation of the plans. The Board consists of five members appointed by the Governor and four members appointed by the Joint Rules Committee, all subject to confirmation by the General Assembly. The Board of Trustees appoints a director to serve as the chief administrative officer of the System and a chief investment officer to direct, manage, and administer the investment of the System's funds. The Board of Trustees has appointed BNY Mellon as the custodian of designated assets of the System.

The System administers four pension trust funds: the Virginia Retirement System (VRS); State Police Officers' Retirement System (SPORS); Virginia Law Officers' Retirement System (VaLORS); and the Judicial Retirement System (JRS). In addition to the pension plans, the System administers five Other Employee Benefit Plans: Group Life Insurance Fund; Retiree Health Insurance Credit Fund; the Virginia Sickness and Disability Program (VSDP); the Line of Duty Act Trust Fund; and the Virginia Local Disability Program (VLDP).

B. Summary of Significant Accounting Policies (Virginia Retirement System)

Basis of Accounting

The financial statements of the pension and other employee benefit trust funds are prepared using the flow of economic resources measurement focus and the accrual basis of accounting consistent with the plans. Employee and employer contributions are recognized when due, pursuant to formal commitments, as well as statutory or contractual requirements. Investment income is recognized as earned by the plans. Benefits and refunds are recognized when due and payable in accordance with the terms of the plans.

Method Used to Value Investments

Investments are reported at fair value as determined by the System's master custodian, BNY Mellon, from its Global Pricing System. This pricing system assigns a price source, based on asset type and the vendor pricing products to which the master custodian subscribes, for every security held immediately following its acquisition. Prices supplied by these sources are monitored on a daily basis by the master custodian.

When a pricing source is unable to provide a price, quotes are sought from major investment brokers and market-making dealers; or internal calculations are applied if feasible. As a last resort, the master custodian will contact investment managers for a price. The master custodian prices commingled funds, partnerships, and real estate assets from statements received from the funds, partnerships, or investment managers.

The pricing sources utilized by the master custodian provide daily prices for equity securities, corporate, government and mortgage-backed fixed income securities, private placement securities, futures and options on futures, open-ended funds, and foreign exchange rates. Depending on the vendor, collateralized mortgage obligations (CMOs), adjustable rate mortgages (ARMs) and asset-backed securities are priced daily, weekly or twice a month and at month-end. Municipal fixed income securities and options on Treasury/Government National Mortgage Association securities are priced at month-end.

The System's investment guidelines for each specific portfolio limits investments in any corporate entity to no more than 5.0 percent of the market value of the account for both the internally and externally managed portfolios. There is no concentration of investments in any one organization that represents 5.0 percent or more of plan net position available for benefits.

C. Plan Description

The Virginia Retirement System (VRS) is a qualified governmental retirement plan that administers three retirement benefit structures: Plan 1, Plan 2, and Hybrid Plan, for state employees, public school board employees, employees of participating political subdivisions, and other qualifying employees. VRS is a combination of mixed-agent and cost-sharing, multiple-employer retirement plans. Each plan's accumulated assets may legally be used to pay all the plan benefits provided to any of the plan's members, retirees, and beneficiaries. Contributions for fiscal year 2019 were $3.4 billion with a reserve balance available for benefits of $77.4 billion. As of June 30, 2019, the VRS had 833 contributing employers.

The Commonwealth also administers the following single-employer retirement plans and benefit structures:

- State Police Officers' Retirement System (SPORS) – Plan 1 and Plan 2
- Virginia Law Officers' Retirement System (VaLORS) – Plan 1 and Plan 2
- Judicial Retirement System (JRS) – Plan 1, Plan 2, and Hybrid Plan

All full-time, salaried permanent employees of VRS participating employers are automatically covered under VRS, SPORS, VaLORS or JRS with the following exceptions: (1) certain full-time faculty and administrative staff of public colleges and universities; and (2) eligible classified employees of the two state teaching hospitals. These employees have the option to elect not to participate in the Virginia Retirement

System. Benefit provisions and all other requirements are established by Title 51.1 of the *Code of Virginia*.

Benefits vest for all plans after five years of service credit. Vested VRS members in the VRS Plan 1 are eligible for an unreduced retirement benefit at age 65 with at least five years of service credit or age 50 with at least 30 years of service credit as elected by the employer. Vested VRS members in the VRS Plan 2 and the Hybrid Plan are eligible for unreduced retirement benefits at normal social security retirement age with at least five years of service credit or when age and service credit equal 90. Vested SPORS and VaLORS members in both the VRS Plan 1 and the VRS Plan 2 are eligible for an unreduced benefit at age 60 with at least five years of hazardous duty service credit or age 50 with at least 25 years of total service credit.

Annual retirement benefits are payable monthly for life in an amount equal to 1.7 percent of eligible members' average final compensation (AFC) for each year of service credit. Under the VRS Plan 2, the multiplier for general employees was reduced to 1.65 percent beginning January 1, 2013. Under the Hybrid Plan, the multiplier for the defined benefit component is 1.0 percent. AFC is the average of the member's 36 consecutive months of highest creditable compensation for members under the VRS Plan 1. Under the VRS Plan 2 and the Hybrid Plan, a member's AFC is the average of the member's 60 consecutive months of highest creditable compensation. The benefit for members of SPORS is calculated using a 1.85 percent multiplier. Members of SPORS also are eligible for a hazardous duty supplement, paid monthly, until they reach full Social Security retirement age.

Members of VaLORS hired before July 1, 2001, were allowed to make a one-time election to increase the multiplier from 1.7 to 2.0 percent instead of receiving a monthly hazardous duty supplement. VaLORS members who elected to retain the 1.7 percent multiplier are eligible for the supplement until age 65. Members of VaLORS hired after June 20, 2001, have their benefit computed using the 2.0 percent multiplier and are not eligible for the supplement.

Members of JRS receive weighted years of service credit for each year of actual service under JRS. VRS, SPORS, VaLORS, and JRS also provide death and disability benefits.

A cost-of-living allowance (COLA), based on changes in the Consumer Price Index and limited to 5.0 percent per year for VRS Plan 1 and 3.0 percent for VRS Plan 2 and Hybrid Plan, is granted on July 1 of the second calendar year after retirement and is effective each July 1 thereafter. Beginning January 2013, a member who retires with less than 20 years of service must receive an allowance for one full calendar year after reaching unreduced retirement age to be eligible for a COLA. Members within five years of eligibility for an unreduced benefit as of January 1, 2013 were grandfathered.

Benefits for all vested members are actuarially reduced if they retire before becoming eligible for an unreduced retirement benefit, provided they meet age requirements for a reduced retirement benefit.

As required by Title 51.1 of the *Code of Virginia*, members contribute 5.0 percent of their annual compensation to the retirement plans. If a member leaves covered employment, the accumulated contributions plus earned interest may be refunded to the member. Each participating employer is required by state statute to contribute the remaining amounts necessary to fund the retirement plans using the entry age normal actuarial cost method adopted by the Board of Trustees. Contributions for fiscal year 2019 were $37.8 million, $27.5 million, and $93.2 million, and reserved balances available for benefits were $865.3 million, $563.5 million, and $1.5 billion, for SPORS, JRS, and VaLORS, respectively. State statute may be amended only by the General Assembly. To the extent that the employer's long-term obligation to provide pension benefits (total pension liability) is larger than the value of the assets available in the plan to pay these benefits (fiduciary net position), there is a net pension liability which is reported in the accompanying financial statements as a component of Long-term Liabilities Due in More than One Year.

Further information about the benefits provided in these retirement plans and their different benefit structures can be found in the Virginia Retirement System's Comprehensive Annual Financial Report.

The following table provides participant information.

	VRS	SPORS	VaLORS	JRS	2019 Total
Retirees and Beneficiaries Receiving Benefits	58,797	1,410	4,991	530	65,728
Terminated Employees Entitled to Benefits but not Receiving Them	11,707	143	771	7	12,628
Total	70,504	1,553	5,762	537	78,356
Active Members:					
Vested	52,123	1,579	4,806	348	58,856
Non-Vested	24,887	333	3,928	109	29,257
Total	77,010	1,912	8,734	457	88,113

D. Funding Policy

The funding policy of the retirement plans provides for periodic employer contributions at actuarially determined rates, which will remain relatively level over time as a percentage of payroll and will accumulate sufficient assets to meet the cost of all basic benefits when due. Contribution rates are developed using the entry age normal cost method for both normal cost and amortization of the unfunded actuarial accrued liability. Gains and losses are reflected in the unfunded actuarial accrued liability that is being amortized as a level percentage of payroll within 30 years or less.

The System's actuary, Cavanaugh MacDonald Consulting, LLC, computed the amount of contributions to be provided by state agency employers, state police and other Virginia law employers. The contribution rates

for fiscal year 2019 were based on the actuary's valuation as of June 30, 2017. Employer contributions by the Commonwealth to VRS, SPORS, VaLORS, and JRS were 13.5 percent, 24.9 percent, 21.6 percent, and 34.4 percent, respectively.

In addition to determining contribution requirements, the actuarial computations present an estimate of the discounted present value of the prospective accrued liability contributions that employers will have to pay in the future so that such contributions, together with the assets on hand, the normal contributions to be made in the future by employers and members and the income earned by investing funds, will be sufficient to provide all benefits to be paid to present members in the future as well as the annuitants and their designated beneficiaries.

E. Changes in Net Pension Liability

The total pension liability was determined based on the actuarial valuation as of June 30, 2017, using updated actuarial assumptions, applied to all periods included in the measurement and rolled forward to the measurement date of June 30, 2018. The following tables (dollars in thousands) show the Commonwealth's total pension liability, plan fiduciary net position, and net pension liability in total and individually for the VRS, SPORS, JRS, and VaLORS for the current and prior year.

Primary Government

	Totals (1)		
	Increase (Decrease)		
	Total Pension Liability (a)	Plan Fiduciary Net Position (b)	Net Pension Liability (a) - (b)
Balances at June 30, 2018	$ 16,625,511	$ 12,407,133	$ 4,218,378
Changes for the year			
Service cost	287,906	—	287,906
Interest	1,133,490	—	1,133,490
Differences between actual and expected experience	(228,970)	—	(228,970)
Assumption changes	—	—	—
Contributions - employer	—	436,385	(436,385)
Contributions - member	—	137,866	(137,866)
Net investment income	—	909,872	(909,872)
Benefit payments, including refunds	(902,389)	(911,179)	8,790
Administrative expense	—	(8,009)	8,009
Other changes	(78)	15,441	(15,519)
Net changes	289,959	580,376	(290,417)
Balances at June 30, 2019	$ 16,915,470	$ 12,987,509	$ 3,927,961

	VRS			SPORS		
	Increase (Decrease)			Increase (Decrease)		
	Total Pension Liability (a)	Plan Fiduciary Net Position (b)	Net Pension Liability (a) - (b)	Total Pension Liability (a)	Plan Fiduciary Net Position (b)	Net Pension Liability (a) - (b)
Balances at June 30, 2018	$ 13,091,321	$ 9,861,078	$ 3,230,243	$ 1,047,402	$ 796,073	$ 251,329
Changes for the year						
Service cost	209,055	—	209,055	18,187	—	18,187
Interest	893,442	—	893,442	71,251	—	71,251
Differences between actual and expected experience	(181,988)	—	(181,988)	(7,248)	—	(7,248)
Assumption changes	—	—	—	—	—	—
Contributions - employer	—	304,802	(304,802)	—	35,806	(35,806)
Contributions - member	—	112,277	(112,277)	—	6,311	(6,311)
Net investment income	—	724,109	(724,109)	—	58,148	(58,148)
Benefit payments, including refunds	(696,805)	(706,944)	10,139	(59,064)	(59,064)	—
Administrative expense	—	(6,384)	6,384	—	(509)	509
Other changes	—	15,848	(15,848)	—	(63)	63
Net changes	223,704	443,708	(220,004)	23,126	40,629	(17,503)
Balances at June 30, 2019	$ 13,315,025	$ 10,304,786	$ 3,010,239	$ 1,070,528	$ 836,702	$ 233,826

	JRS			VaLORS		
	Increase (Decrease)			Increase (Decrease)		
	Total Pension Liability (a)	Plan Fiduciary Net Position (b)	Net Pension Liability (a) - (b)	Total Pension Liability (a)	Plan Fiduciary Net Position (b)	Net Pension Liability (a) - (b)
Balances at June 30, 2018	$ 646,275	$ 512,749	$ 133,526	$ 1,840,435	$ 1,237,158	$ 603,277
Changes for the year						
Service cost	19,228	—	19,228	41,436	—	41,436
Interest	43,799	—	43,799	124,998	—	124,998
Differences between actual and expected experience	(15,786)	—	(15,786)	(23,948)	—	(23,948)
Assumption changes	—	—	—	—	—	—
Contributions - employer	—	28,096	(28,096)	—	67,681	(67,681)
Contributions - member	—	3,231	(3,231)	—	16,047	(16,047)
Net investment income	—	37,466	(37,466)	—	90,149	(90,149)
Benefit payments, including refunds	(41,165)	(41,165)	—	(105,355)	(104,006)	(1,349)
Administrative expense	—	(326)	326	—	(790)	790
Other changes	—	(42)	42	—	(227)	227
Net changes	6,076	27,260	(21,184)	37,131	68,854	(31,723)
Balances at June 30, 2019	$ 652,351	$ 540,009	$ 112,342	$ 1,877,566	$ 1,306,012	$ 571,554

Component Units

	Totals		
	Increase (Decrease)		
	Total Pension Liability (a)	Plan Fiduciary Net Position (b)	Net Pension Liability (a) - (b)
Balances at June 30, 2018	$ 10,687,840	$ 8,037,539	$ 2,650,301
Changes for the year			
Service cost	170,653	—	170,653
Interest	724,621	—	724,621
Differences between actual and expected experience	(147,464)	—	(147,464)
Assumption changes	—	—	—
Contributions - employer	—	249,468	(249,468)
Contributions - member	—	91,092	(91,092)
Net investment income	—	586,275	(586,275)
Benefit payments, including refunds	(635,259)	(626,469)	(8,790)
Administrative expense	—	(5,168)	5,168
Other changes	—	12,634	(12,634)
Net changes	112,551	307,832	(195,281)
Balances at June 30, 2019	$ 10,800,391	$ 8,345,371	$ 2,455,020

	VRS			VaLORS		
	Increase (Decrease)			Increase (Decrease)		
	Total Pension Liability (a)	Plan Fiduciary Net Position (b)	Net Pension Liability (a) - (b)	Total Pension Liability (a)	Plan Fiduciary Net Position (b)	Net Pension Liability (a) - (b)
Balances at June 30, 2018	$ 10,526,091	$ 7,928,810	$ 2,597,281	$ 161,749	$ 108,729	$ 53,020
Changes for the year						
Service cost	166,910	—	166,910	3,743	—	3,743
Interest	713,330	—	713,330	11,291	—	11,291
Differences between actual and expected experience	(145,301)	—	(145,301)	(2,163)	—	(2,163)
Assumption changes	—	—	—	—	—	—
Contributions - employer	—	243,356	(243,356)	—	6,112	(6,112)
Contributions - member	—	89,643	(89,643)	—	1,449	(1,449)
Net investment income	—	578,132	(578,132)	—	8,143	(8,143)
Benefit payments, including refunds	(630,234)	(620,095)	(10,139)	(5,025)	(6,374)	1,349
Administrative expense	—	(5,097)	5,097	—	(71)	71
Other changes	—	12,654	(12,654)	—	(20)	20
Net changes	104,705	298,593	(193,888)	7,846	9,239	(1,393)
Balances at June 30, 2019	$ 10,630,796	$ 8,227,403	$ 2,403,393	$ 169,595	$ 117,968	$ 51,627

The amounts in the previous tables include governmental, business-type, and component unit activity for the Commonwealth's VRS State Plan and the fiduciary net pension liability of $65,845. All component unit tables exclude the non-VRS State Plan net pension liability of $35.8 million for all component units.

The 2017 actuarial valuations were prepared using the entry age normal cost method. The actuarial assumptions included (a) 7.0 percent investment rate of return, per year compounded annually; (b) projected salary increases ranging from 3.5 percent to 6.0 percent, including a 2.5 percent inflation component and (c) COLA of 2.5 percent for Plan 1 and 2.3 percent for Plan 2. The actuarial assumption for mortality rates was based on the RP-2014 mortality table projected with Scale BB to 2020.The projection of benefits for financial reporting purposes does not explicitly incorporate the potential effects of legal or contractual funding limitations.

For more detailed actuarial information, refer to the Virginia Retirement System's financial statements, including mortality rates shown in the "Actuarial Assumptions and Methods – Pension Plans" schedule.

F. Changes to and Sensitivity of Discount Rate

The discount rate used to measure the total pension liability was 7.0 percent. The projection of cash flows used to determine the discount rate assumed that contributions from participating employers will be based on the actuarially determined rates based on the Board's funding policy, which certifies the required rates under Title 51.1 of the *Code of Virginia*. Beginning on July 1, 2018, all agencies are assumed to contribute 100.0 percent of the actuarially determined contribution rates. Based on those assumptions, the fiduciary net position was projected to be available to make all of the projected future benefit payments of current plan members. Therefore, the long-term expected rate of return on pension plan investments was applied to all periods of the projected benefit payments to determine the total pension liability. In accordance with GASB Statement No. 67, *Financial Reporting for Pension Plans – an amendment of GASB Statement No. 25,* regarding the disclosure of the sensitivity of the net pension liability to changes in the discount rate, the table below presents the employers' net pension liability for each of the plans calculated using the discount rate of 7.0 percent, as well as what the employers' net pension liability would be if it were calculated using a discount rate that is 1.0 percent lower (6.0 percent) or 1.0 percent higher (8.0 percent) than the current rate. The following table (dollars in thousands) shows the Commonwealth's changes in the discount rate.

Primary Government

VRS			SPORS		
Net Pension Liability			Net Pension Liability		
1.0% Decrease (6.0%)	Current Discount Rate (7.0%)	1.0% Increase (8.0%)	1.0% Decrease (6.0%)	Current Discount Rate (7.0%)	1.0% Increase (8.0%)
$ 4,557,668	$ 3,010,239	$ 1,707,649	$ 359,387	$ 233,826	$ 127,959

JRS			VaLORS		
Net Pension Liability			Net Pension Liability		
1.0% Decrease (6.0%)	Current Discount Rate (7.0%)	1.0% Increase (8.0%)	1.0% Decrease (6.0%)	Current Discount Rate (7.0%)	1.0% Increase (8.0%)
$ 171,387	$ 112,342	$ 61,007	$ 811,088	$ 571,554	$ 373,283

Component Units

VRS			VaLORS		
Net Pension Liability			Net Pension Liability		
1.0% Decrease (6.0%)	Current Discount Rate (7.0%)	1.0% Increase (8.0%)	1.0% Decrease (6.0%)	Current Discount Rate (7.0%)	1.0% Increase (8.0%)
$ 3,638,869	$ 2,403,393	$ 1,363,397	$ 73,263	$ 51,627	$ 33,718

The long-term expected rate of return on the System's investments was determined using a building-block method in which best-estimate ranges of expected future real rates of return (expected returns, net of investment expense and inflation) are developed for each major asset class. These ranges are combined to produce the long-term expected rate of return by weighting the expected future real rates of return by the target asset allocation percentage and by adding expected inflation. The target allocations are based on the Strategic Asset Allocation Implementation Schedule and Allowable Ranges document, which was approved by the VRS Board of Trustees on June 7, 2016. Best estimates of arithmetic real rates of return for each major asset class included in the System's target asset allocation are summarized in the following table.

Asset Class (Strategy)	Target Allocation	Arithmetic Long-Term Expected Rate of Return	Weighted Average Long-Term Expected Rate of Return
Public Equity	40.0%	4.5%	1.8%
Fixed Income	15.0%	0.7%	0.1%
Credit Strategies	15.0%	4.0%	0.6%
Real Estate	15.0%	5.8%	0.9%
Private Equity	15.0%	9.5%	1.4%
Total	100.0%		4.8%
		Inflation	2.5%
		Expected arithmetic nominal return	7.3%

The allocation in the previous table provides a one-year expected return of 7.3 percent. However, one-year returns do not take into account the volatility present in each of the asset classes. In setting the long-term expected return for the pension system, stochastic projections are employed to model future returns under various economic conditions. The results provide a range of returns over various time periods that ultimately provide a median return of 6.8 percent, including expected inflation of 2.5 percent.

G. Pension Related Deferred Outflows and Deferred Inflows

GASB Statement No. 68, *Accounting and Financial Reporting for Pensions – an amendment of GASB Statement No. 27,* requires certain pension related items to be reported as either deferred outflows or deferred inflows of resources. The following tables (dollars in thousands) summarize these amounts as of June 30, 2019, in total and by individual plan.

Primary Government (1)

	Totals (2)	
	Deferred Outflows of Resources	Deferred Inflows of Resources
Differences between expected and actual experience	$ 383	$ 236,256
Changes of assumptions	27,857	68,271
Net difference between projected and actual earnings on plan investments	—	97,907
Changes in proportion and difference between employer contributions and proportionate share of contributions	92,608	86,444
Employer contributions subsequent to the Measurement Date	421,322	—
Total	$ 542,170	$ 488,878

	VRS		SPORS	
	Deferred Outflows of Resources	Deferred Inflows of Resources	Deferred Outflows of Resources	Deferred Inflows of Resources
Differences between expected and actual experience	$ —	$ 182,002	$ —	$ 17,933
Changes of assumptions	20,157	—	—	48,229
Net difference between projected and actual earnings on plan investments	—	78,615	—	5,832
Changes in proportion and difference between employer contributions and proportionate share of contributions	78,876	70,639	—	—
Employer contributions subsequent to the Measurement Date	297,719	—	31,469	—
Total	$ 396,752	$ 331,256	$ 31,469	$ 71,994

	JRS		VaLORS	
	Deferred Outflows of Resources	Deferred Inflows of Resources	Deferred Outflows of Resources	Deferred Inflows of Resources
Differences between expected and actual experience	$ —	$ 20,221	$ 354	$ 16,096
Changes of assumptions	7,700	—	—	20,038
Net difference between projected and actual earnings on plan investment	—	4,045	—	9,414
Changes in proportion and difference between employer contributions and proportionate share of contributions	—	—	13,732	15,805
Employer contributions subsequent to the Measurement Date	22,899	—	69,200	—
Total	$ 30,599	$ 24,266	$ 83,286	$ 61,353

Component Units (1) (3)

	Totals	
	Deferred Outflows of Resources	Deferred Inflows of Resources
Differences between expected and actual experience	$ 29	$ 146,721
Changes of assumptions	16,086	1,807
Net difference between projected and actual earnings on plan investments	—	63,617
Changes in proportion and difference between employer contributions and proportionate share of contributions	48,882	55,046
Employer contributions subsequent to the Measurement Date	255,194	—
Total	$ 320,191	$ 267,191

	VRS		VaLORS	
	Deferred Outflows of Resources	Deferred Inflows of Resources	Deferred Outflows of Resources	Deferred Inflows of Resources
Differences between expected and actual experience	$ —	$ 145,271	$ 29	$ 1,450
Changes of assumptions	16,086	—	—	1,807
Net difference between projected and actual earnings on plan investments	—	62,766	—	851
Changes in proportion and difference between employer contributions and proportionate share of contributions	46,129	54,366	2,753	680
Employer contributions subsequent to the Measurement Date	248,760	—	6,434	—
Total	$ 310,975	$ 262,403	$ 9,216	$ 4,788

(1) During fiscal year 2019, the Commonwealth recognized pension expense for the primary government and component units of $152,150 (dollars in thousands) and $103,122 (dollars in thousands), respectively. The recognized pension expense by plan for the primary government was as follows (dollars in thousands): VRS $111,767, SPORS $5,524, JRS $10,088, and VaLORS $24,771. The recognized pension expense by plan for component units was as follows (dollars in thousands): VRS $98,487, and VaLORS $4,635.

(2) This table includes deferred outflows of resources and deferred inflows of resources of $64,054 and $9,289, respectively, for the Hampton Roads Transportation Accountability Commission (nonmajor governmental), not related to the VRS State Plan.

(3) The component unit amounts exclude deferred outflows of resources and deferred inflows of resources of $20,066 (dollars in thousands) and $10,679 (dollars in thousands), respectively, not related to the VRS State Plan.

Deferred Amounts to be Recognized in Fiscal Years Following Reporting Date

The following tables (dollars in thousands) provide the net estimated amount of the deferred inflows and deferred outflows of resources that will be recognized in the Commonwealth's pension expense for each of the next five fiscal years. These amounts exclude employer contributions made subsequent to the measurement date as those contributions will reduce the fiscal year 2020 net pension liability.

Primary Government

	VRS	SPORS	JRS	VaLORS
2020	$ (37,679)	$ (12,061)	$ (3,667)	$ (24,168)
2021	(53,642)	(15,499)	(4,266)	(9,435)
2022	(132,792)	(22,185)	(8,246)	(12,744)
2023	(8,110)	(12,760)	(387)	(920)
2024	—	(8,955)	—	—
Thereafter	—	(534)	—	—

Component Units

	VRS	VaLORS
2020	$ (32,481)	$ (1,026)
2021	(46,243)	(400)
2022	(114,473)	(541)
2023	(6,991)	(39)
2024	—	—

H. Defined Contribution Plan for Political Appointees

Officers appointed by the Governor, officers elected by popular vote or the General Assembly, and executive branch chief deputies and confidential assistants may participate in the deferred contribution plan for Political Appointees, rather than the VRS. This optional retirement plan is authorized by the *Code of Virginia* and offered through the ICMA-RC. This is a defined contribution plan where the retirement benefits are based upon the Commonwealth's 12.3 percent and the employee's (5.0 percent) contributions, plus interest and dividends. The Commonwealth pays the required employee contributions. During the year ended June 30, 2019, the total contributions to this plan were $1.5 million. As of June 30, 2019, the amount to be paid to participants upon retirement is $17.1 million. Additionally, no assets are accumulated for this plan in a GASB-compliant trust.

The summary of significant accounting policies for the plan is in accordance with those discussed in Note 17.B.

I. Defined Contribution Plan for Public School Superintendents

The Public School Superintendent Plan is a defined contribution pension plan that provides optional postemployment benefits for school superintendents. This plan is authorized by the *Code of Virginia*. The Board of Trustees of the System manages the investments of the fund as custodian. School boards may elect to offer this plan as an option to the standard VRS plan that is available for school board members. Contributions are provided by the school board for credit to the member. As of June 30, 2019, there were two participants in this plan. There were no contributions to the plan for fiscal year 2019.

J. Virginia Supplemental Retirement Plan

The Public School Teacher Supplemental Retirement Plan is a defined contribution pension plan established by the Department of Education to provide an optional postemployment benefit plan for turnaround specialists in the public school system. This plan is utilized as an incentive to attract highly skilled teachers for participating public schools pursuant to Title 51.1-617 of the *Code of Virginia*. The Board of Trustees of the System manages the investments of the fund as custodian. School boards may elect to offer this plan as an option to the standard VRS plan that is available for school board members. Contributions are provided by the school boards for credit to the members. As of June 30, 2019, there were two participants in this plan. There were no contributions to the plan for fiscal year 2019.

K. Higher Education (Nonmajor Component Units)

The Commonwealth's colleges and universities participate in the retirement plans administered by VRS. In addition, full-time faculty and certain administrative staff of the Commonwealth's colleges and universities may participate in optional retirement plans as authorized by Section 51.1-126 of the *Code of Virginia* rather than the VRS retirement plans. These optional retirement plans are defined contribution plans offered through the Teachers Insurance and Annuity Association (TIAA), Fidelity Investments, and DCP. There are two defined contribution plans. Plan 1 is for employees hired prior to July 1, 2010, and retirement benefits received are based upon the employer's 10.4 percent contributions, plus net investment gains. Plan 2 is for employees hired on or after July 1, 2010, and retirement benefits received are based upon the employer's contribution, not to exceed 8.9 percent, and the employee's 5.0 percent contribution, plus net investment gains. For Plan 2, the employer contributions for fiscal year 2019 were 8.5 percent except for the University of Virginia (nonmajor) which were 8.9 percent. Vesting is full and immediate for both employer and employee contributions, except UVA employees hired after July 1, 2014 are fully vested in the UVA contributions after two years of continuous employment. For fiscal year 2019, total pension expense recognized was $164.5 million and contributions were calculated using the base salary amount of $1.7 billion. As of June 30, 2019, the Commonwealth's colleges and universities had accrued $10.7 million in employer liabilities related to these plans.

University of Virginia Medical Center (part of the University of Virginia – nonmajor) employees hired after July 1, 1999, cannot participate in Plan 1 or Plan 2 noted above but have the option of participating in the Medical Center's Optional Retirement Plan. For information regarding this plan, see the institution's separately issued financial statements.

Certain employees of Virginia Commonwealth University (nonmajor) are participating in The Select Plan, which is a 401(a) defined contribution plan. Participation is limited to executives by invitation. For information regarding this plan, see the University's website at www.vcu.edu.

Prior to July 1, 1997, certain employees of the Virginia Commonwealth University Health System Authority (Authority) (a blended component unit of Virginia Commonwealth University – nonmajor) were eligible to participate in the VRS defined benefit pension plan. Effective July 1, 1997, the Authority established the Virginia Commonwealth University Health System Authority Defined Contribution Plan (VCUHS 401(a) Plan) and the Virginia Commonwealth University Health System Authority Health Care Providers Defined Contribution Plan (HCP Plan). The Authority and component units, MCV Associated Physicians (MCVAP), VCU Community Memorial Hospital (CMH), and the Children's Hospital (Children's), participate in the VCUHS 401(a) as well as sponsor the VCUHS Savings Plan (VCUHS 457(b) Plan). Healthcare providers hired between July 1, 1993 and July 1, 1997, are eligible to participate in the HCP Plan. MCVAP also sponsors the MCVAP 401(a) Retirement Plan. VA Premier (a component of the Authority) adopted a 401(k) Plan. For information regarding these plans, see the Authority's separately issued financial statements.

The Center for Innovative Technology (CIT) is a blended component unit of the Innovation and Entrepreneurship Investment Authority (nonmajor). The CIT has a defined contribution retirement plan covering substantially all employees. Under the plan, CIT makes contributions fixed at a percentage of each employee's compensation to pay premiums for individual retirement annuity contracts written by the Teachers Insurance and Annuity Association (TIAA) and the College Retirement Equities Fund (CREF). For information regarding this plan, see the Authority's separately issued financial statements.

L. Other Component Units

Note 1.B. outlines the component units included in the Commonwealth's reporting entity. The Virginia Public Building Authority (blended - primary government), the Virginia Public School Authority (major), the Virginia College Building Authority (major), and the Virginia School for the Deaf and Blind Foundation (nonmajor) have no employees. Virginia Resources Authority (major) and the following nonmajor component units participate in the retirement plans administered by VRS: the Virginia Economic Development Partnership, the Virginia Small Business Financing Authority, the Hampton Roads Sanitation District Commission, the Virginia Biotechnology Research Partnership Authority, the Virginia Tourism Authority, the Tobacco Region Revitalization Commission, the Virginia Foundation for Healthy Youth, and the Fort Monroe Authority.

The Virginia Housing Development Authority (major) has three defined contribution plans. For additional information regarding these plans, see the Authority's website at www.vhda.com.

The Virginia Outdoors Foundation (nonmajor) maintains a 401(k) contribution plan and provides an employer contribution match up to 6.0 percent. For information regarding this plan, see the Foundation's website at www.virginiaoutdoorsfoundation.org.

The Virginia Commercial Space Flight Authority (nonmajor) maintains a 401(a) contribution plan and provides an employer contribution to all eligible employees of 11.0 percent of their base salary. For information regarding this plan, see the Authority's separately issued financial statements.

The Virginia Port Authority (VPA) (nonmajor) maintains two defined benefit plans for its employees. Employees of record on July 1, 1997, had the option of continuing to maintain their benefit status as a State employee, and their benefits maintained under the VRS, or elect to be covered under a newly created pension plan (the VPA Defined Benefit Plan). The VPA Defined Benefit Plan covers all employees hired between July 1, 1997 and February 1, 2014. Employees hired after February 1, 2014, are eligible for a defined contribution plan only. On January 1, 2015, the plan was amended to add certain employees who transferred from the Virginia International Terminals (VIT) (referred to as "Legacy VIT Participants") to VPA. VIT (a blended component unit of VPA – nonmajor) has the Virginia International Terminals, LLC Pension Plan that is a single employer, noncontributory defined benefit pension plan administered by VIT. A stand-alone financial report is issued by VITPP and is available upon request from VPA's administrative offices. For information regarding these plans, see the Authority's website at www.portofvirginia.com.

Employees of the Virginia Museum of Fine Arts Foundation (nonmajor) who are age 21 or older are eligible to participate in the Employee's Savings Plan, a 401(k) defined contribution profit sharing plan. Also, the Foundation entered into a supplemental retirement agreement to pay a key employee of the Museum upon retirement the difference between the amount accrued under the VRS retirement plan, based on salary, and the amount based on the supplemental salary. For additional information regarding these plans, see the Foundation's separately issued financial statements.

The Science Museum of Virginia Foundation (nonmajor) has a 403(b) defined contribution pension plan through the TIAA-CREF Retirement Plan for employees meeting age and service requirements. For additional information regarding this plan, see the Foundation's separately issued financial statements.

18. OTHER EMPLOYMENT BENEFITS

In addition to the pension plans, the Commonwealth participates in two other employment benefit plans, Group Life Insurance and the Virginia Sickness and Disability Program, which are administered by the Virginia Retirement System (the System). The System administers a third other employment benefit plan, the Volunteer Firefighters' and Rescue Squad Workers' Fund, in which the Commonwealth does not participate, but may provide funding. The

significant accounting policies for all three plans are the same as those described in Note 17 for pension plans. A separately issued financial report that includes financial statements for the Group Life Insurance and Virginia Sickness and Disability Program is publicly available. Copies may be obtained from the Virginia Retirement System website at www.varetire.org.

Group Life Insurance

The Group Life Insurance Plan was established for Commonwealth employees, teachers, employees of political subdivisions participating in the VRS, state police officers, other state law enforcement and correctional officers, judges, and other qualifying employees. The program provides life insurance for natural death coverage equal to a member's annual compensation rounded to the next highest $1,000 and then doubled. Accidental death coverage is double the natural death benefit. The program also provides coverage for accidental dismemberment and accidental blindness, a safety belt benefit, a repatriation benefit, a felonious assault benefit and an accelerated death benefit for terminal conditions. Approximately 369,831 members participate in the program as of June 30, 2019.

Participating employers and their covered employees are required by Title 51.1 of the *Code of Virginia* to contribute to the cost of group life insurance benefits. Employers may assume the employees' contributions.

An optional Group Life Insurance Fund was established for members covered under the group life program as a supplement to that plan. Members may purchase optional life insurance coverage for themselves, their spouses and/or their dependent children. The optional program provides natural death coverage equal to one, two, three or four times the member's annual compensation rounded to the next highest $1,000, up to a maximum of $750,000. Spouse coverage is available for up to one-half of the member's optional insurance amount. Minor children who are at least 15 days old can be insured for $10,000, $20,000 or $30,000, depending on the option chosen by the member. An additional accidental death and dismemberment benefit is payable for death or bodily injuries. Approximately 70,903 members were covered under this program as of June 30, 2019.

Optional group life insurance coverage ends for members when they retire or terminate their employment, or when their basic coverage ends. Optional life insurance amounts begin to reduce by 25.0 percent based on the retiree's age, beginning with the retiree's normal retirement age under his or her plan ending at age 80. Retirees may elect to continue coverage within 31 days of retirement. Spouse coverage terminates should a couple divorce or when the member leaves employment. Children's coverage ends with the termination of the member's coverage or when the child marries or turns 21 years of age (25 years of age for full-time college students).

Employers of members who elect optional life insurance coverage deduct the premiums from the members' paychecks, as required by Title 51.1 of the *Code of Virginia*. Premiums are based on the member's age and determined by the Board of Trustees. Because optional life insurance is an insured product, the carrier bills each employer directly, and the employer makes the contribution payments to the carrier. Any differences and adjustments are settled between the employer and the carrier.

Virginia Sickness and Disability Program

The System administers the Virginia Sickness and Disability Program (VSDP) to provide income protection in the event of a disability for eligible state employees hired on or after January 1, 1999. State agencies are required by Title 51.1 of the *Code of Virginia* to contribute to the cost of providing long-term disability benefits and administering the program.

VSDP benefits include sick, family and personal leave and short-term and long-term disability benefits. After a seven-calendar day waiting period following the first day of disability, eligible employees receive short-term disability benefits from 60.0 percent to 100.0 percent of their compensation. After 125 work days of short-term disability, eligible employees receive long-term disability benefits equal to 60.0 percent of their compensation. If the employee's condition becomes catastrophic, income replacement increases to 80.0 percent until the condition is no longer catastrophic. Long-term disability benefits continue until employees return to work, retire or reach age 65 (age 60 for state police officers and other state law enforcement and correctional officers) or die.

Full-time permanent salaried state employees, including state police officers and other Virginia law and correctional officers, are automatically enrolled in the VSDP. Part-time permanent salaried state employees who work at least 20 hours a week and accrue leave also are automatically enrolled. Teaching, administrative and research faculty of Virginia public colleges and universities who elect VRS as their retirement plan must make an irrevocable election to participate in either the VSDP or the institution's disability program. If there is no institution program, the faculty member is covered under VSDP.

Eligible state employees and state police officers employed before January 1, 1999, had the option to elect to participate in the VSDP or remain under the Commonwealth's existing sick leave program and retain their eligibility for disability retirement benefits under VRS and SPORS. (Members of VaLORS have been automatically enrolled in the VSDP since October 1, 1999, when VaLORS was created.) Eligible employees enrolled in the VSDP are not eligible for disability retirement benefits under VRS, SPORS, or VaLORS. Employees hired or rehired on or after July 1, 2009, must satisfy eligibility periods before becoming eligible for non-work related short-term disability coverage and certain income replacement levels. Approximately 79,269 members were covered under the program as of June 30, 2019.

Volunteer Firefighters' and Rescue Squad Workers' Fund

Volunteer firefighters and rescue squad workers may participate in an optional employment benefit plan. This optional plan is authorized by the *Code of Virginia*. The Board of Trustees of the System manages the investments of the fund as custodian. Members of the plan contribute $30 per quarter. The Commonwealth will contribute an amount determined by the Board and appropriated by the

General Assembly, if such funds are appropriated, for a period not to exceed 20 years. For fiscal year 2019, there was $185,000 appropriated for administration of the program. As of June 30, 2019, there were 1,814 workers participating in the fund.

19. OTHER POSTEMPLOYMENT BENEFITS (OPEB)

A. Virginia Retirement System (System-administered) OPEB Plans

1) Administration and Significant Accounting Policies

The System-administered defined benefit OPEB plans mentioned below have a trust that meets the requirements in GASB Statement No. 75. In addition, the net OPEB liability for these plans have a measurement date of June 30, 2018. As previously mentioned, a separately issued financial report that includes financial statements, notes and required supplementary information for each of the System-administered plans discussed below is publicly available. Copies may be obtained from the Virginia Retirement System website at www.varetire.org.

The administration and significant accounting policies for the System-administered OPEB plans are the same as those described in Note 17 for pension plans.

2) Plan Descriptions

Retiree Health Insurance Credit Program

The Retiree Health Insurance Credit Program is composed of a single-employer plan for state employees; a cost-sharing multiple-employer plan for teachers; three cost-sharing, multiple-employer plans for constitutional officers, social services employees and registrars; and an agent, multiple-employer plan for political subdivisions electing coverage. This note and the required supplementary information in this report is for the single-employer plan for state employees and also includes the state-funded noncontributing employer portion for constitutional officers, registrars, and their employees, as well as local social service employees.

The Retiree Health Insurance Credit (RHIC) for state employees provides benefits for retired state employees, state police officers, other state law enforcement, correctional officers, and judges who have at least 15 years of service credit under the retirement plans. Members of JRS receive weighted years of service credit for each year of actual service under JRS. VRS, SPORS, VaLORS, and JRS also provide death and disability benefits. The program provides a credit reimbursement of $4 per month per year of service credit against the monthly health insurance premiums of eligible retirees. There is no cap on the credit. Certain eligible employees who retire on disability or go on long-term disability under the Virginia Sickness and Disability Program are eligible for a credit not to exceed $120.

The following is the approximate number of employees covered by the RHIC plan for state employees on the measurement date of June 30, 2018:

	RHIC for State Employees
Inactive employees currently receiving benefit payments	46,289
Inactive employees entitled to but not yet receiving benefit payments	1,715
Active employees	108,027
Total	156,031

The health insurance credit plan for general registrars, constitutional officers, and their employees as well as local social service employees (RHIC Non-State) provides $1.50 per month per year of service with a maximum monthly credit of $45. The Commonwealth funds this credit. Benefit provisions and eligibility requirements are established by Title 51.1 of the *Code of Virginia*. The amount required to fund all credits is financed by the employers based on contribution rates determined by the System's actuary.

Virginia Sickness and Disability Program

The Virginia Sickness and Disability Program (VSDP) is a single-employer plan. It is also known as the Disability Insurance Trust Fund. The Commonwealth provides OPEB disability insurance benefits, in accordance with state statutes, to eligible retired and terminated employees. Eligible employees include state employees hired before January 1, 1999, who elected to transfer to VSDP rather than retain their eligibility to be considered for VRS disability retirement and full-time and part-time, salaried state employees covered under VRS, SPORS, and VaLORS. State agencies are required by Title 51.1 of the *Code of Virginia* to contribute to the cost of providing long-term disability benefits and administering the program. The following is the approximate number of employees covered by this plan on the measurement date of June 30, 2018:

	VSDP
Inactive employees currently receiving benefit payments	4,808
Inactive employees entitled to but not yet receiving benefit payments	—
Active employees	73,620
Total	78,428

Group Life Insurance Program

The Group Life Insurance Program (GLI) is a cost-sharing, multiple employer plan. Members whose employers participate in the Group Life Insurance Program are covered automatically under the Basic Group Life Insurance Program upon employment. This program was established July 1, 1960, for state employees, teachers and employees of political subdivisions that elect the program, including certain employers that do not participate in VRS for retirement. At retirement or termination, accidental death benefits cease and natural death coverage reduces at a rate equal to 25.0 percent on January 1 of the first full calendar year following retirement or termination and on January 1 of each year thereafter, until it reaches 25.0 percent of its original value. These group life insurance benefit provisions and requirements are established by Title 51.1 of the *Code of Virginia*. Participating employers and covered employees are required to contribute to the cost of group life insurance benefits. Employers may assume employees' contributions. A portion of the premium contributions collected during members' active careers is placed in an advance premium deposit reserve. This reserve is to fund the claims for eligible retired and deferred members.

Line of Duty Act Program

The Line of Duty Act Program (LODA) is a cost-sharing, multiple employer plan. It provides death and health insurance reimbursement benefits to eligible state employees and local government employees, including volunteers, who die or become disabled as a result of the performance of their duties as a public safety officer. Benefit provisions and eligibility requirements are established by Title 9.1 of the *Code of Virginia*. The System is responsible for managing the assets of the program. Participating employers made contributions to the program beginning in fiscal year 2012. The employer contribution rate was determined by the System's actuary using the anticipated costs and the number of covered individuals associated with all participating employers. Additionally, beginning in fiscal year 2018, the Department of Human Resource Management administered the benefits and payment of claims under this program. The System manages the death benefit payments.

3) Funding

The contribution requirements are governed by the *Code of Virginia*, but may be impacted as a result of funding provided to state agencies by the Virginia General Assembly. Employer contributions by the Commonwealth for the RHIC and VSDP were 1.2 percent and 0.6 percent, respectively, of covered employee compensation. In addition, the contributions by the Commonwealth for the RHIC: Non-State for general registrars, constitutional officers, and their employees, and local social service employees were approximately 0.4 percent.

The total contribution rate for the GLI was 1.3 percent allocated into an employee and an employer component using a 60/40 split. The employee component was 0.8 percent and the employer component was 0.5 percent. Each employer's contractually required employer contribution rate for the year ended June 30, 2019, was 0.5 percent of covered employee compensation. Each employer's contractually required employer contribution rate for the LODA for the year ended June 30, 2019, was $705.8 per covered full-time-equivalent employee.

All rates were based on an actuarially determined rate from an actuarial valuation as of June 30, 2017. For RHIC and GLI, the actuarially determined rate was expected to finance the costs of benefits payable during the year, with an additional amount to finance any unfunded accrued liability. For VSDP, the actuarially determined rate was expected to finance the costs of benefits payable during the year, with an adjustment to amortize the accrued OPEB assets. For the LODA, the rate represents a pay-as-you-go funding rate and not the full actuarial cost of benefits under the program. The actuarially determined pay-as-you-go rate was expected to finance the costs and related expenses of benefits payable during the year.

Employer contributions by the Commonwealth to the RHIC, VSDP, GLI, LODA, and the RHIC Non-State plans were $80.1 million, $25.3 million, $30.9 million, $8.0 million, and $3.8 million, respectively, for the year ended June 30, 2019.

4) Changes in Net OPEB Liability and Proportionate Share of Net OPEB Liability

The total OPEB liability for each plan was determined based on the actuarial valuation as of June 30, 2017, using updated actuarial assumptions, applied to all periods included in the measurement and rolled forward to the measurement date of June 30, 2018. The following tables (dollars in thousands) show the Commonwealth's total OPEB liability, plan fiduciary net position, and net OPEB liability (asset) for the RHIC and VSDP for the current and prior year, and the Commonwealth's proportionate share of the net OPEB liability for GLI, LODA, and RHIC Non-State plans. Since the VSDP has a net OPEB asset rather than a net OPEB liability, the net OPEB asset amount is not included in the total balance amount. The Commonwealth's Proportion for the GLI, LODA, and RHIC Non-State plans represents the percentage of the Commonwealth's share of Net OPEB Liability amount compared to the Net OPEB Liability amount for all employers of $1.5 billion, $313.5 million and $39.8 million, respectively.

Primary Government

	RHIC Increase (Decrease)			VSDP Increase (Decrease)		
	Total OPEB Liability (a)	Plan Fiduciary Net Position (b)	Net OPEB Liability (a)-(b)	Total OPEB Liability (a)	Plan Fiduciary Net Position (b)	Net OPEB Liability (Asset) (1) (a)-(b)
Balances at June 30, 2018	$ 416,438	$ 33,446	$ 382,992	$ 146,657	$ 273,702	$ (127,045)
Changes for the year						
Service cost	8,204	—	8,204	17,068	—	17,068
Interest	27,930	—	27,930	9,613	—	9,613
Benefit changes	—	—	—	—	—	—
Differences between actual and expected experience	311	—	311	—	—	—
Assumption changes	—	—	—	(6,968)	—	(6,968)
Contributions - employer	—	33,163	(33,163)	—	16,903	(16,903)
Contributions - member	—	—	—	—	—	—
Net investment income	—	2,383	(2,383)	—	19,887	(19,887)
Benefit payments	(31,874)	(29,104)	(2,770)	(18,962)	(18,696)	(266)
Third-party administrator charges	—	—	—	—	(4,115)	4,115
Administrative expense	—	(62)	62	—	(596)	596
Other changes	—	224	(224)	—	(22)	22
Net changes	4,571	6,604	(2,033)	751	13,361	(12,610)
Balances at June 30, 2019	$ 421,009	$ 40,050	$ 380,959	$ 147,408	$ 287,063	$ (139,655)

	Other Plans	
	Commonwealth's Proportion	Proportionate Share of Net OPEB Liability
Group Life Insurance	14.8%	$ 225,142
Line of Duty Act	56.9%	178,469
Retiree Health Insurance Credit: Non-State	100.0%	39,753
Balance at June 30, 2019		$ 443,364
Total balance at June 30, 2019: (excludes VSDP net OPEB asset) (1) (2)		$ 824,323

Component Units

	RHIC Increase (Decrease)			VSDP Increase (Decrease)		
	Total OPEB Liability (a)	Plan Fiduciary Net Position (b)	Net OPEB Liability (a)-(b)	Total OPEB Liability (a)	Plan Fiduciary Net Position (b)	Net OPEB Liability (Asset) (1) (a)-(b)
Balances at June 30, 2018	$ 573,590	$ 46,070	$ 527,520	$ 90,356	$ 168,632	$ (78,276)
Changes for the year						
Service cost	11,441	—	11,441	10,459	—	10,459
Interest	38,953	—	38,953	5,890	—	5,890
Benefit changes	—	—	—	—	—	—
Differences between actual and expected experience	434	—	434	—	—	—
Assumption changes	—	—	—	(4,269)	—	(4,269)
Contributions - employer	—	46,253	(46,253)	—	10,357	(10,357)
Contributions - member	—	—	—	—	—	—
Net investment income	—	3,323	(3,323)	—	12,186	(12,186)
Benefit payments	(37,243)	(40,013)	2,770	(12,111)	(12,377)	266
Third-party administrator charges	—	—	—	—	(2,522)	2,522
Administrative expense	—	(87)	87	—	(365)	365
Other changes	—	312	(312)	—	(13)	13
Net changes	13,585	9,788	3,797	(31)	7,266	(7,297)
Balances at June 30, 2019	$ 587,175	$ 55,858	$ 531,317	$ 90,325	$ 175,898	$ (85,573)

	Other Plans	
	Commonwealth's Proportion	Proportionate Share of Net OPEB Liability
Group Life Insurance	15.7%	$ 238,645
Line of Duty Act	3.0%	9,400
Balance at June 30, 2019		$ 248,045
Total balance at June 30, 2019: (excludes VSDP net OPEB asset) (1) (3)		$ 779,362

(1) The VSDP net OPEB asset is included in Other Restricted Assets in the accompanying government-wide financial statements.
(2) The primary government's aggregate OPEB liability is $1,409,822 (dollars in thousands) as of June 30, 2019. This includes amounts for both the VRS-administered and DHRM-administered plans.
(3) The component unit's aggregate OPEB liability is $1,278,414 (dollars in thousands) as of June 30, 2019. This includes amounts for both the VRS-administered and DHRM-administered plans as well as other OPEB plans.

The amounts in the previous tables include governmental, business-type, and component unit activity for the Commonwealth's VRS OPEB plans. The table excludes other net OPEB liability amounts of $19.7 million for all other component units and includes the fiduciary net OPEB liability of $12,134.

The net OPEB liabilities were based on an actuarial valuation as of June 30, 2017, using the entry age normal actuarial cost method. The actuarial assumptions included the following: (a) investment rate of return, net of OPEB plan investment expenses, including inflation: 7.0 percent for RHIC, VSDP, and GLI, and 3.9 percent for LODA; and (b) projected salary increases, including a 2.5 percent inflation component, ranging from 3.5 percent to 6.0 percent for VRS state, JRS, SPORS, and VaLORS employees, and teachers and political subdivision employees. For these OPEB plans, the teachers and political subdivision employees are not Commonwealth employees and, therefore, are excluded from the accompanying tables.

For more detailed actuarial information, refer to the Virginia Retirement System's financial statements, including the "Actuarial Assumptions and Methods – Other Post-Employment Benefit Plan Funds" schedule.

5) Changes to and Sensitivity of Discount Rate

The discount rate used to measure the total OPEB liability was 7.0 percent for the prefunded plans. These include the Group Life Insurance Program, the Retiree Health Insurance Credit Program, and the Disability Insurance Program.

The projection of cash flows used to determine the discount rate assumed that contributions from participating employers will be based on the actuarially determined rates based on the Board's funding policy, which certifies the required rates under Title 51.1 of the *Code of Virginia*. Based on those assumptions, the fiduciary net position was projected to be available to make all of the projected future benefit payments of current plan members. Therefore, the long-term expected rate of return on OPEB plan investments was applied to all periods of the projected benefit payments to determine the total OPEB liability. In accordance with GASB Statement No. 75 regarding the disclosure of the sensitivity of the net OPEB liability to changes in the discount rate, the following table (dollars in thousands) presents the employers' net OPEB liability for each of the plans calculated using the discount rate of 7.0 percent, as well as what the employers' net OPEB liability would be if it were calculated using a discount rate that is 1.0 percent lower (6.0 percent) or 1.0 percent higher (8.0 percent) than the current rate.

The Line of Duty Act Program is funded on a pay-as-you-go basis. As a result, the liabilities are valued using a discount rate of 3.9 percent, which approximates the risk-free rate of return. The following table (dollars in thousands) shows the Commonwealth's changes in the discount rate and the healthcare trend rate.

Primary Government

Changes in Discount Rate

RHIC			VSDP		
Net OPEB Liability			Net OPEB Liability (Asset) (1)		
1.0% Decrease (6.0%)	Current Discount Rate (7.0%)	1.0% Increase (8.0%)	1.0% Decrease (6.0%)	Current Discount Rate (7.0%)	1.0% Increase (8.0%)
$ 421,295	$ 380,959	$ 346,252	$ (134,622)	$ (139,655)	$ (143,961)

GLI			LODA		
Proportionate Share of Net OPEB Liability			Proportionate Share of Net OPEB Liability		
1.0% Decrease (6.0%)	Current Discount Rate (7.0%)	1.0% Increase (8.0%)	1.0% Decrease (2.9%)	Current Discount Rate (3.9%)	1.0% Increase (4.9%)
$ 294,254	$ 225,142	$ 169,059	$ 204,489	$ 178,469	$ 157,520

Changes in Discount Rate			Changes in Healthcare Cost Trend Rates		
RHIC: Non-State			LODA		
Proportionate Share of Net OPEB Liability			Proportionate Share of Net OPEB Liability		
1.0% Decrease (6.0)%	Current Discount Rate (7.0%)	1.0% Increase (8.0)%	1.0% Decrease (6.8% decreasing to 4.0%)	Healthcare Cost Trend Rates (7.8% decreasing to 5.0%)	1.0% Decrease (8.8% decreasing to 6.0%)
$ 44,352	$ 39,753	$ 35,828	$ 152,062	$ 178,469	$ 211,378

Component Units

Changes in Discount Rate

RHIC			VSDP		
Net OPEB Liability			Net OPEB Liability (Asset) (1)		
1.0% Decrease (6.0)%	Current Discount Rate (7.0%)	1.0% Increase (8.0%)	1.0% Decrease (6.0)%	Current Discount Rate (7.0%)	1.0% Increase (8.0%)
$ 587,574	$ 531,317	$ 482,911	$ (82,490)	$ (85,573)	$ (88,212)

GLI			LODA		
Proportionate Share of Net OPEB Liability			Proportionate Share of Net OPEB Liability		
1.0% Decrease (6.0)%	Current Discount Rate (7.0%)	1.0% Increase (8.0%)	1.0% Decrease (2.9%)	Current Discount Rate (3.9%)	1.0% Increase (4.9%)
$ 311,902	$ 238,645	$ 179,198	$ 10,771	$ 9,400	$ 8,297

Changes in Healthcare Cost Trend Rates		
LODA		
Proportionate Share of Net OPEB Liability		
1.0% Decrease (6.8% decreasing to 4.0%)	Healthcare Cost Trend Rates (7.8% decreasing to 5.0%)	1.0% Increase (8.8% decreasing to 6.0%)
$ 8,009	$ 9,400	$ 11,133

(1) The VSDP net OPEB asset is included in Other Restricted Assets in the accompanying government-wide financial statements.

The long-term expected rate of return on the System's investments was determined using a building-block method in which best-estimate ranges of expected future real rates of return (expected returns, net of investment expense and inflation) are developed for each major asset class. These ranges are combined to produce the long-term expected rate of return by weighting the expected future real rates of return by the target asset allocation percentage and by adding expected inflation. The target allocations are based on the Strategic Asset Allocation Implementation Schedule and Allowable Ranges document, which was approved by the VRS Board of Trustees on June 7, 2016. Best estimates of arithmetic real rates of return for each major asset class included in the System's target asset allocation are summarized in the following table.

Asset Class (Strategy)	Target Allocation	Arithmetic Long-Term Expected Rate of Return	Weighted Average Long-Term Expected Rate of Return
Public Equity	40.0%	4.5%	1.8%
Fixed Income	15.0%	0.7%	0.1%
Credit Strategies	15.0%	4.0%	0.6%
Real Assets	15.0%	5.8%	0.9%
Private Equity	15.0%	9.5%	1.4%
Total	100.0%		4.8%
	Inflation		2.5%
Expected arithmetic nominal return			7.3%

The allocation in the previous table provides a one-year expected return of 7.3 percent. However, one-year returns do not take into account the volatility present in each of the asset classes. In setting the long-term expected return for the pension system, stochastic projections are employed to model future returns under various economic conditions. The results provide a range of returns over various time periods that ultimately provide a median return of 6.8 percent, including expected inflation of 2.5 percent.

The long-term expected rate of return on the LODA OPEB Program's investments was set at 3.9 percent for this valuation. Since LODA is funded on a current-disbursement basis, it is not able to use the VRS Pooled Investments 7.0 percent assumption. Instead, the assumed annual rate of return of 3.9 percent was used since it approximates the risk-free rate of return. This Single Equivalent Interest Rate (SEIR) is the applicable municipal bond index rate based on the Bond Buyer General Obligation 20-year Municipal Bond Index as of June 30, 2018.

6) OPEB Related Deferred Outflows and Deferred Inflows

GASB Statement No. 75 requires certain OPEB related items to be reported as either deferred outflows or deferred inflows of resources. The following tables (dollars in thousands) summarize these amounts as of June 30, 2019, in total and by individual plan.

Primary Government (3)

	Totals (1)	
	Deferred Outflows of Resources	Deferred Inflows of Resources
Differences between expected and actual experience	$ 37,526	$ 128,025
Changes of assumptions	—	276,341
Net difference between projected and actual earnings on plan investments	—	16,694
Changes in proportion and difference between employer contributions and proportionate share of contributions	39,324	59,650
Employer contributions subsequent to the Measurement Date	75,259	—
Amounts associated with transactions subsequent to the Measurement Date	24,073	—
Total	$ 176,182	$ 480,710

	RHIC		VSDP	
	Deferred Outflows of Resources	Deferred Inflows of Resources	Deferred Outflows of Resources	Deferred Inflows of Resources
Differences between expected and actual experience	$ 263	$ —	$ —	$ 5,931
Changes of assumptions	—	3,467	—	8,236
Net difference between projected and actual earnings on plan investments	—	621	—	8,238
Changes in proportion and difference between employer contributions and proportionate share of contributions	6,610	14,174	2,769	2,990
Employer contributions subsequent to the Measurement Date	33,385	—	15,583	—
Total	$ 40,258	$ 18,262	$ 18,352	$ 25,395

	GLI		LODA	
	Deferred Outflows of Resources	Deferred Inflows of Resources	Deferred Outflows of Resources	Deferred Inflows of Resources
Differences between expected and actual experience	$ 11,001	$ 4,034	$ 25,621	$ 4
Changes of assumptions	—	9,385	—	20,552
Net difference between projected and actual earnings on plan investments	—	7,324	—	456
Changes in proportion and difference between employer contributions and proportionate share of contributions	5,376	8,288	6,671	7,531
Employer contributions subsequent to the Measurement Date	14,794	—	7,656	—
Total	$ 31,171	$ 29,031	$ 39,948	$ 28,543

	RHIC: Non-State	
	Deferred Outflows of Resources	Deferred Inflows of Resources
Differences between expected and actual experience	$ 641	$ —
Changes of assumptions	—	524
Net difference between projected and actual earnings on plan investments	—	55
Changes in proportion and difference between employer contributions and proportionate share of contributions	951	951
Employer contributions subsequent to the Measurement Date	3,841	—
Total	$ 5,433	$ 1,530

Component Units (2) (3)

	Totals (1)	
	Deferred Outflows of Resources	Deferred Inflows of Resources
Differences between expected and actual experience	$ 13,373	$ 92,634
Changes of assumptions	—	188,932
Net difference between projected and actual earnings on plan investments	—	13,698
Changes in proportion and difference between employer contributions and proportionate share of contributions	41,383	22,860
Employer contributions subsequent to the Measurement Date	72,859	—
Amounts associated with transactions subsequent to the Measurement Date	17,273	—
Total	$ 144,888	$ 318,124

	RHIC		VSDP	
	Deferred Outflows of Resources	Deferred Inflows of Resources	Deferred Outflows of Resources	Deferred Inflows of Resources
Differences between expected and actual experience	$ 361	$ —	$ —	$ 3,636
Changes of assumptions	—	4,824	—	5,051
Net difference between projected and actual earnings on plan investments	—	865	—	5,054
Changes in proportion and difference between employer contributions and proportionate share of contributions	15,254	7,690	1,624	1,403
Employer contributions subsequent to the Measurement Date	46,699	—	9,699	—
Total	$ 62,314	$ 13,379	$ 11,323	$ 15,144

	GLI		LODA	
	Deferred Outflows of Resources	Deferred Inflows of Resources	Deferred Outflows of Resources	Deferred Inflows of Resources
Differences between expected and actual experience	$ 11,665	$ 4,286	$ 1,347	$ 2
Changes of assumptions	—	9,942	—	1,084
Net difference between projected and actual earnings on plan investments	—	7,757	—	22
Changes in proportion and difference between employer contributions and proportionate share of contributions	5,433	3,736	761	489
Employer contributions subsequent to the Measurement Date	16,075	—	386	—
Total	$ 33,173	$ 25,721	$ 2,494	$ 1,597

(1) These tables aggregate the deferred inflows of resources and deferred outflows of resources for both the VRS-administered and DHRM-administered plans.

(2) The component unit amounts in the accompanying financial statements include deferred outflows of resources and deferred inflows of resources of $8,333 (dollars in thousands) and $2,725 (dollars in thousands), respectively, for other OPEB plans.

(3) Additionally, during fiscal year 2019, the Commonwealth recognized OPEB expense for the primary government and component units of $43,800 (dollars in thousands) and $54,351 (dollars in thousands), respectively, for the VRS-administered OPEB plans. The recognized OPEB expense by plan for the primary government was as follows (dollars in thousands): RHIC $30,805; VSDP $7,426; GLI $885; LODA $1,171; and RHIC: Non-State $3,513. The recognized OPEB expense by plan for component units was as follows (dollars in thousands): RHIC $47,037; VSDP $4,564; GLI $1,952; and LODA $798.

Deferred Amounts to be Recognized in Fiscal Years Following Reporting Date

The following tables (dollars in thousands) provide the net estimated amount of the deferred inflows and deferred outflows of resources that will be recognized in the Commonwealth's OPEB expense for each of the next five fiscal years and thereafter. These amounts exclude employer contributions made subsequent to the measurement date as those contributions will reduce the fiscal year 2020 net OPEB liability (asset).

Primary Government

	RHIC	VSDP	GLI	LODA
2020	$ (2,935)	$ (5,077)	$ (4,322)	$ 375
2021	(2,935)	(5,077)	(4,322)	375
2022	(2,934)	(5,078)	(4,322)	374
2023	(2,242)	(2,557)	(1,594)	425
2024	(366)	(2,367)	896	480
Thereafter	23	(2,470)	1,010	1,720

	RHIC: Non-State
2020	$ (19)
2021	(19)
2022	(19)
2023	6
2024	40
Thereafter	73

Component Units

	RHIC	VSDP	GLI	LODA
2020	$ 576	$ (3,034)	$ (2,945)	$ 51
2021	576	(3,034)	(2,945)	51
2022	576	(3,035)	(2,945)	51
2023	440	(1,528)	(1,087)	58
2024	72	(1,415)	610	65
Thereafter	(4)	(1,474)	689	235

B. Department of Human Resource Management (DHRM-administered) OPEB Plan

1) Administration

The DHRM-administered defined benefit OPEB plan mentioned below does not have a trust that meets the requirements of GASB Statement No. 75. In addition, the total OPEB liability for this plan has a measurement date of June 30, 2018. A separately issued financial report for this DHRM-administered OPEB plan is not available.

2) Plan Description

The Commonwealth provides a Pre-Medicare Retiree Healthcare (PMRH) plan established by Title 2.2 of the *Code of Virginia* for retirees who are not yet eligible to participate in Medicare. It is the same health insurance program offered to active employees and managed by DHRM. After retirement, the Commonwealth of Virginia no longer subsidizes the retiree's premium; however, since both active employees and retirees are included in the same pool for purposes of determining health insurance rates, retiree rates are effectively lower than what might otherwise be available outside of this benefit. Following are eligibility requirements for Virginia Retirement System (VRS) retirees:

- Retiring state employee who is eligible for a monthly retirement benefit from VRS;
- Start receiving (do not defer) retirement benefit immediately upon retirement;
- Last employer before retirement was the Commonwealth of Virginia;
- Eligible for (even if not enrolled) coverage as an active employee in the State Health Benefits Program until retirement date (not including Extended Coverage/COBRA); and
- Enroll no later than 31 days from retirement date.

Effective January 1, 2017, are the following eligibility requirements for Optional Retirement Plan retirees:

- Terminating state employee who participates in one of the qualified Optional Retirement Plans;
- Last employer before termination was the Commonwealth of Virginia;
- Eligible for (even if not enrolled) coverage in the State Employee Health Benefits Program for active employees at the time of termination;
- Meet age and service requirements for an immediate retirement benefit under the non-ORP VRS plan that the retiree would have been eligible for on the date of hire had the retiree not elected the ORP; and
- Enroll in the State Retiree Health Benefits Program no later than 31 days from the date the retiree loses coverage (or loses eligibility for coverage) in the State Health Benefits Program for active employees due to termination of employment.

Eligibility for Optional Retirement Plan retirees who terminated prior to January 1, 2017, would be based on the policy in place at the time of their termination.

This fund is reported as part of the Commonwealth's Health Care Internal Service Fund. Benefit payments are recognized when due and payable in accordance with the benefit

terms. Pre-Medicare Retiree Healthcare is a single-employer defined benefit OPEB plan that is treated like a cost-sharing plan for financial reporting purposes, and is administered by the Department of Human Resource Management. There were approximately 5,200 retirees and 91,800 active employees in the program in fiscal year 2018. There are no inactive employees entitled to future benefits who are not currently receiving benefits. There are no assets accumulated in a trust to pay benefits.

3) Funding

The employer does not pay a portion of the retirees' healthcare premium; however, since both active employees and retirees are included in the same pool for purposes of determining health insurance rates, this generally results in a higher rate for active employees. Therefore, the employer effectively subsidizes the costs of the participating retirees' healthcare through payment of the employer's portion of the premiums for active employees.

4) Changes in Total OPEB Liability

The PMRH total OPEB liability of $1.0 billion as of June 30, 2019, was measured as of June 30, 2018, and was determined by an actuarial valuation as of June 30, 2018. The following tables (dollars in thousands) show the Commonwealth's total OPEB liability for the current and prior year:

Primary Government

	PMRH Increase (Decrease) Total OPEB Liability
Balances at June 30, 2018	$ 760,551
Changes for the year	
Service cost	55,115
Interest cost	28,691
Changes of benefit terms	—
Differences between expected and actual experience	(111,203)
Changes of assumptions	(123,291)
Benefit payments	(24,364)
Net change	(175,052)
Balances at June 30, 2019	$ 585,499

Component Units

	PMRH Increase (Decrease) Total OPEB Liability
Balances at June 30, 2018	$ 538,353
Changes for the year	
Service cost	39,550
Interest cost	20,588
Changes of benefit terms	—
Differences between expected and actual experience	(79,797)
Changes of assumptions	(88,471)
Benefit payments	(10,082)
Net change	(118,212)
Balances at June 30, 2019	$ 420,141

The amounts in the previous tables include governmental, business-type, and component unit activity for the DHRM-administered OPEB plan. The table excludes the non-DHRM OPEB plans' total OPEB liability of $59.2 million for all other component units and includes the fiduciary OPEB liability of $8,855.

The PMRH total OPEB liability was based on an actuarial valuation with a valuation date of June 30, 2018. The Department of Human Resource Management selected the economic, demographic and healthcare claim cost assumptions. The actuary provided guidance with respect to these assumptions. Initial healthcare costs trend rates used were 8.2 percent for medical and pharmacy and 4.0 percent for dental. The ultimate trend rates used were 5.0 percent for medical and pharmacy and 4.0 percent for dental.

Actuarial Assumptions and Methods

Valuation Date of June 30, 2018

Measurement Date	June 30, 2018 (one year prior to the end of the fiscal year)
Actuarial Cost Method	Entry Age Normal
Amortization Method	Level dollar, Closed
Effective Amortization Period	6.19 years
Discount Rate	3.9%
Projected Salary Increases	4.0%
Medical Trend Under 65	Medical & Rx: 8.2% to 5.0% Dental: 4.0% Before reflecting excise tax
Year of Ultimate Trend	2025
Mortality	Mortality rates vary by participant status
Pre-Retirement	RP-2014 Employee Rates projected with Scale BB to 2020; males setback 1 year, 85.0% of rates; females setback 1 year
Post-Retirement	RP-2014 Employee Rates to age 49, Healthy Annuitant Rates at ages 50 and older projected with Scale BB to 2020; males and females setback 1 year
Post-Disablement:	RP-2014 Disabled Mortality Rates projected with Scale BB to 2020; males 115.0% of rates; females 130.0% of rates

The discount rate was based on the Bond Buyers GO 20 Municipal Bond Index as of the measurement date which is June 30, 2018. The inflation rate used was 2.3 percent per year and there were no ad hoc postemployment benefit changes used to measure the total OPEB liability.

Changes of Assumptions

The following actuarial assumptions were updated since the June 30, 2017 valuation based on recent experience:

- Spousal coverage - reduced the rate from 50.0 percent to 35.0 percent
- Retiree participation - reduced the rate from 70.0 percent to 60.0 percent

Spousal coverage and retiree participation were both reduced based on a blend of recent experience and the prior year assumptions. The mortality assumption was modified slightly to reflect mortality improvement projection scale BB to 2020. Additionally, the discount rate was increased from 3.6 percent to 3.9 percent based on the Bond Buyers GO 20 Municipal Bond Index.

5) Changes to and Sensitivity of Discount Rate

The following table (dollars in thousands) shows the Commonwealth's changes in discount rate and the healthcare cost trend rates.

Primary Government

Changes in Discount Rate		
PMRH		
Total OPEB Liability		
1.0% Decrease (2.9%)	Current Discount Rate (3.9%)	1.0% Increase (4.9%)
$ 626,467	$ 585,499	$ 546,541

Changes in Healthcare Cost Trend Rates		
PMRH		
Total OPEB Liability		
1.0% Decrease	Healthcare Cost Trend Rates	1.0% Increase
(7.2% decreasing to 4.0%)	(8.2% decreasing to 5.0%)	(9.2% decreasing to 6.0%)
$ 522,228	$ 585,499	$ 659,871

Component Units

Changes in Discount Rate		
PMRH		
Total OPEB Liability		
1.0% Decrease (2.9%)	Current Discount Rate (3.9%)	1.0% Increase (4.9%)
$ 449,540	$ 420,141	$ 392,187

Changes in Healthcare Cost Trend Rates		
PMRH		
Total OPEB Liability		
1.0% Decrease	Healthcare Cost Trend Rates	1.0% Increase
(7.2% decreasing to 4.0%)	(8.2% decreasing to 5.0%)	(9.2% decreasing to 6.0%)
$ 374,739	$ 420,141	$ 473,509

6) OPEB Related Deferred Outflows and Deferred Inflows

The following tables (dollars in thousands) summarize the OPEB related items reported as deferred outflows or deferred inflows of resources:

Primary Government (2)

	PMRH	
	Deferred Outflows of Resources	Deferred Inflows of Resources
Differences between expected and actual experience	$ —	$ 118,056
Changes of assumptions	—	234,177
Changes in proportion	16,947	25,716
Amounts associated with transactions subsequent to the Measurement Date	24,073	—
Total	$ 41,020	$ 377,949

Component Units (1) (2)

	PMRH	
	Deferred Outflows of Resources	Deferred Inflows of Resources
Differences between expected and actual experience	$ —	$ 84,710
Changes of assumptions	—	168,031
Changes in proportion	18,311	9,542
Amounts associated with transactions subsequent to the Measurement Date	17,273	—
Total	$ 35,584	$ 262,283

(1) The component unit amounts exclude deferred outflows of resources and deferred inflows of resources of $48,181 and $52,930 (dollars in thousands), respectively, for other OPEB plans.

(2) Additionally, during fiscal year 2019, the Commonwealth recognized OPEB expense for the primary government and component units of $8,966 (dollars in thousands) and $9,577 (dollars in thousands), respectively, for the DHRM-administered OPEB plan.

Deferred Amounts to be Recognized in Fiscal Years Following Reporting Date

The following tables (dollars in thousands) provide the net estimated amount of the deferred inflows and deferred outflows of resources that will be recognized in the Commonwealth's OPEB expense for each of the next five fiscal years and thereafter. These amounts exclude amounts associated with transactions subsequent to the measurement date as those will reduce the fiscal year 2020 total OPEB liability.

Primary Government

	PMRH
2020	$ (74,829)
2021	(74,829)
2022	(74,829)
2023	(74,829)
2024	(54,308)
Thereafter	(7,378)

Component Units

	PMRH
2020	$ (50,571)
2021	(50,571)
2022	(50,571)
2023	(50,571)
2024	(36,702)
Thereafter	(4,986)

7) Other OPEB Plans

Higher Education

The University of Virginia (nonmajor component unit) has a Retiree Health Plan that covers employees who retire before becoming eligible for Medicare. In addition, an Optional Retirement Life Insurance Plan is offered to University faculty and Medical Center employees who participate in the Optional Retirement Plans. For these OPEB plans, the University reported a total OPEB liability of $58.3 million, deferred outflows of resources of $13,192, and deferred inflows of resources of $52.5 million as of June 30, 2019. Additional information on these plans can be found at the University's website at www.virginia.edu.

Other Component Units

The Virginia Housing Development Authority (major component unit) offers a medical, dental, and vision benefit plan, and reports deferred outflows of resources of $4.7 million and deferred inflows of resources of $186,913 as of June 30, 2019.

The Virginia Resources Authority (major component unit) offers an optional Retirement Life Insurance Plan for those employees who choose to participate. The Authority reports a net OPEB liability of $205,649, deferred outflows of resources of $13,322, and deferred inflows of resources of $17,000 as of June 30, 2019.

The Virginia Port Authority (nonmajor component unit) offers medical and dental benefits for retirees. The Authority reports a total OPEB liability of $910,998, deferred outflows of $34,989 and deferred inflows of resources of $428,347 as of June 30, 2019.

Hampton Roads Sanitation District (nonmajor component unit) offers a health and dental benefit plan for those employees who choose to participate. The District reports a net OPEB liability of $18.7 million, deferred inflows of resources of $2.5 million and deferred outflows of resources of $3.6 million as of June 30, 2019.

The Virginia Biotechnology Research Partnership Authority (nonmajor component unit) offers an Optional Retirement Life Insurance Plan for those employees who choose to participate. The Authority reports a net OPEB liability of $52,055, deferred outflows of resources of $8,490, and deferred inflows of resources of $4,162 as of June 30,2019.

20. DEFERRED COMPENSATION PLANS

The Commonwealth offers its employees a deferred compensation plan created in accordance with Internal Revenue Code Section 457(b). The Virginia Retirement System (the System) administers the deferred compensation plan, pursuant to the Government Employees Deferred Compensation Plan Act, Section 51.1 of the *Code of Virginia*. The System contracts with private corporations or institutions subject to the standards set forth in the Code to provide investment products as well as any other goods and services related to the administration of the deferred compensation plan. The Department of Accounts is responsible for the accounting, reconciliation, payment to the plan through payroll deductions, and timely transfer of withheld funds to the trustee designated by the System for investment. The plan provides a number of investment options and is designed so that each participant retains investment control of his/her individual account. The plan, available to all state employees, permits them to defer a portion of their salary until future years. The deferred compensation is held in trust for the exclusive benefit of plan participants and their beneficiaries and is not available to employees until termination, retirement, death, unforeseeable emergency, or an in-service distribution at age 70½ or later. Since the System has no fiduciary relationship with plan participants, plan assets as of June 30, 2019, of $2.9 billion are not included in the accompanying financial statements.

In addition, the Commonwealth provides a cash match under Internal Revenue Code Section 401(a) for employees participating in the deferred compensation plan. The match amount for an employee was established at 50.0 percent of the voluntary contributions to the deferred compensation plan. During the current fiscal year, the maximum match was $20 per pay period or $40 per month. The fair value of assets in the cash match savings plan as of June 30, 2019, was $479.3 million, which is also excluded from the accompanying financial statements.

Most employees of the Commonwealth's colleges and universities may participate in the Commonwealth's deferred compensation plan in accordance with Internal Revenue Code Section 457(b) and/or the institution's deferred compensation plan in accordance with Internal Revenue Code Section 403(b). Under either plan, the

institution's cash match under the Internal Revenue Code Section 401(a) during fiscal year 2019 was a maximum match up to $20 per pay period or $40 per month. This employer match is for either plan but not both plans. Employer contributions under these plans were approximately $13.4 million for fiscal year 2019.

The deferred compensation plan for the University of Virginia Medical Center (part of the University of Virginia – nonmajor component unit) employees hired on or after September 30, 2002, allows employee contributions up to 4.0 percent of their salary and the employer match is 50.0 percent of the 4.0 percent deferral not to exceed 2.0 percent of the employees' salary. Employer contributions under this plan were approximately $4.6 million for fiscal year 2019. The University of Virginia provides executive deferred compensation retirement benefits for certain officers and executives of the University and the University Medical Center. The University makes contributions on behalf of each participant each plan year as determined by the Board of Visitors. The University contributed $1.9 million to these accounts for fiscal year 2019.

The Virginia Housing Development Authority (major component unit) and the Virginia Resources Authority (major component unit) have deferred compensation plans available to all employees created in accordance with Internal Revenue Section 457(b). The plan permits participants to defer a portion of their salary or wages until future years. The deferred compensation is not available to employees until termination, retirement, or death. The assets of the plan are in an irrevocable trust with an external trustee and, accordingly, no assets or liabilities are reflected in the accompanying financial statements.

The Virginia Port Authority (VPA) (nonmajor component unit) offers three deferred compensation plans and two matching savings plans under Internal Revenue Code Sections 457 and 401(a), respectively. For additional information, please see the Authority's website at www.portofvirginia.com.

The Assistive Technology Loan Fund Authority (nonmajor component unit) employees contribute an amount of their choosing into Deferred Compensation Plans administered by the Virginia Retirement System and into a qualified 403(b) plan.

21. STATE NON-ARBITRAGE POOL

The Commonwealth sponsors the Virginia State Non-Arbitrage Program (SNAP) for use by the Commonwealth and local governments to invest bond proceeds. The Treasury Board is responsible for the oversight of SNAP, procuring the following services: investment management, program administration, arbitrage rebate and calculation, and custodial and depository services. The Commonwealth does not have fiduciary responsibility for SNAP.

The SNAP fund is a local government investment pool. PFM Asset Management LLC serves as the investment adviser of the SNAP fund. The SNAP individual investment portfolios are the responsibility of the SNAP investment manager and the governments investing proceeds in the portfolios. These investments are held solely in the SNAP participants' names. Since the Commonwealth has no fiduciary relationship with local governmental entities participating in the plan, these assets of $2.9 billion are not included in the financial statements.

22. COMMITMENTS

A. Construction Projects

Primary Government

Highway Projects

As of June 30, 2019, the Department of Transportation had contractual commitments of approximately $6.2 billion for construction of various highway projects. Funding for these expenditures is expected to be provided as follows: (1) Federal funds– approximately 13.6 percent or $842.0 million, (2) State funds – approximately 70.5 percent or $4.4 billion, and (3) Proceeds from Bonds – approximately 15.9 percent or $977.0 million.

Mass Transit Projects

As of June 30, 2019, the Department of Rail and Public Transportation had contractual commitments of approximately $324.0 million for various public transportation, rail preservation, and rail enhancement projects. Funding of the future expenditures is expected to be as follows: 1) State funds – approximately 92.3 percent or $299.2 million, and 2) Federal funds – approximately 7.7 percent or $24.8 million.

Wastewater Treatment Projects

As of June 30, 2019, the Department of Environmental Quality was committed to grant contracts with localities to reimburse a portion of construction costs for nutrient reduction facilities at wastewater treatment plants totaling $7.3 million provided by bond proceeds and the Water Quality Improvement Fund.

Other Construction Projects

As of June 30, 2019, the Department of General Services had construction commitments of approximately $22.9 million.

As of June 30, 2019, the Department of Behavioral Health and Developmental Services had construction contractual commitments of approximately $113.7 million.

As of June 30, 2019, the Department of Military Affairs had construction contractual commitments of approximately $19.1 million.

As of June 30, 2019, the Department of Forensic Science had contractual commitments of approximately $6.4 million and non-contractual commitments of $5.6 million for construction projects.

As of June 30, 2019, the Department of Corrections had construction commitments of approximately $21.1 million.

As of June 30, 2019, the Department of Veterans Services had contractual commitments of $12.6 million and non-contractual commitments of $118.6 million for construction projects.

As of June 30, 2019, the Department of Conservation and Recreation had contractual commitments of $5.6 million for construction projects.

Component Units

Port Projects

As of June 30, 2019, the Virginia Port Authority (nonmajor) was committed to construction contracts totaling $534.4 million.

Wallops Island Project

As of June 30, 2019, the Virginia Commercial Space Flight Authority (nonmajor) was committed to construction programs totaling $14.1 million, approximately $7.3 million of which will be reimbursable under separate private and federal contract agreements and approximately $1.7 million of which are funded by the Commonwealth.

Treatment Plant

As of June 30, 2019, the Hampton Roads Sanitation District Commission (nonmajor) was committed to construction contracts totaling $167.2 million.

Higher Education Institutions

Colleges and universities (nonmajor) had contractual commitments as of June 30, 2019, of approximately $1.8 billion. Higher education foundations' commitments total approximately $98.7 million. These are primarily for construction contracts.

B. Operating Leases

The Commonwealth has entered into numerous agreements to lease land, buildings, and equipment. Most of the operating leases contain the provision that the Commonwealth may renew the operating leases at the expiration date of the lease on a month-to-month basis. In most cases, management expects that in the normal course of business, leases will be renewed or replaced by other leases of a similar nature. Rental expense for the primary government under these operating leases for the year ended June 30, 2019, was $78.8 million for governmental activities (including internal service funds) and $29.7 million for business-type activities. Rental expense for the discrete component units (excluding foundations) for the year ended June 30, 2019, was $129.6 million. The Commonwealth has, as of June 30, 2019, the following minimum rental payments due under the above leases (dollars in thousands):

	Primary Government		
	Governmental Activities	Business-type Activities	Component Units (1)
2020	$ 78,252	$ 28,592	$ 84,861
2021	68,431	25,379	67,757
2022	59,299	20,598	56,588
2023	43,820	15,628	47,413
2024	35,568	11,626	37,182
2025-2029	80,895	19,997	94,809
2030-2034	6,924	—	7,103
2035-2039	263	—	1,119
2040-2044	25	—	925
2045-2049	30	—	925
2050-2054	—	—	925
2055-2059	—	—	295
2060-2064	—	—	25
2065-2069	—	—	20
Total	$ 373,507	$ 121,820	$ 399,947

Note (1): The above amounts exclude operating lease obligations of foundations.

	Foundations (2)
2020	$ 7,722
2021	7,406
2022	6,917
2023	6,105
2024	5,767
Thereafter	36,646
Total	$ 70,563

Note (2): Foundations represent FASB reporting entities defined in Note 1.B. Rental expense for the year ended June 30, 2019, was approximately $7.8 million.

Lease agreements are for various terms and contain nonappropriation clauses indicating that continuation of the lease is subject to funding by the General Assembly.

C. Investment Commitments – Virginia Retirement System

The Virginia Retirement System extends investment commitments in the normal course of business, which, as of June 30, 2019, amounted to $15.3 billion.

D. Virginia Transportation Infrastructure Bank

Section 33.2-1500 of the *Code of Virginia* states the Virginia Transportation Infrastructure Bank is intended to help alleviate a critical financing need for present and future highways within the Commonwealth. This includes toll facilities; mass transit; freight, passenger, and commuter rail; and port, airport and other transportation facilities.

As of June 30, 2019, $156.0 million included as Loans Receivable in the accompanying statements represents loans to the City of Chesapeake for the Dominion Boulevard Project and Loudoun County for the Pacific Boulevard Project. Additionally, loans have been approved for the Chesapeake Bay Bridge and Tunnel District for the Parallel Thimble Shoal Tunnel, the City of Alexandria for the Potomac Yard Metrorail Station, and 95 Express Lanes LLC for the 395 Express Lanes Northern Extension, but no disbursements were made as of June 30, 2019. A disbursement of $44.6 million was made for the 395 Express Lanes Northern Extension in July 2019. All loans are coordinated through the Virginia Resources Authority (major component unit).

E. Tobacco Grants

The Tobacco Region Revitalization Commission (nonmajor component unit) had $41.8 million in grant award commitments not reflected in the accompanying financial statements since eligibility requirements were not met as of June 30, 2019, in accordance with GASB Statement No. 33.

F. Other Commitments

Primary Government

As of June 30, 2019, the Department of Behavioral Health and Developmental Services had contractual commitments of approximately $127.1 million.

As of June 30, 2019, the Department of Corrections had contractual commitments of approximately $227.2 million and non-contractual commitments of approximately $20.3 million for detention services and medical care.

As of June 30, 2019, the Virginia Department of Health had commitments of approximately $40.0 million to localities, trauma centers, grants to rescue squads, and water supply assistance grants.

As of June 30, 2019, the Department of Motor Vehicles had contractual commitments of approximately $32.8 million for security technology services.

As of June 30, 2019, the Virginia Department of Transportation had contractual commitments of approximately $978.0 million for individual contracts awarded with a contract value of $1.0 million or more for operational services, facilities, tolling services and other non-highway construction type contracts.

As of June 30, 2019, the Virginia Employment Commission had contractual commitments of approximately $8.8 million for information systems modernization projects and approximately $6.2 million for other non-contractual commitments.

As of June 30, 2019, the Enterprise Applications (internal service fund) had $40.6 million in contractually obligated commitments for the Human Capital Management replacement project.

As of June 30, 2019, the Property Management (internal service fund) had a signed lease agreement for a build to suit building for the Department of Corrections with total lease payments of $5.6 million.

The Virginia College Savings Plan (major enterprise fund) administers the Prepaid529 Program. As of June 30, 2019, the Program had $153.3 million in private equity commitments.

The Virginia Wireless E-911 (nonmajor enterprise fund) had $4.5 million in outstanding grants awarded but not yet disbursed to localities as of June 30, 2019, since all of the eligibility criteria have not been met in accordance with GASB Statement No. 33.

Component Units

The Virginia Housing Development Authority (major) and Virginia Resources Authority (major) had $1.1 billion and $215.0 million, respectively, in commitments to fund new loans not reflected in the accompanying financial statements since eligibility requirements were not met as of June 30, 2019, in accordance with GASB Statement No. 33.

The Virginia Small Business Financing Authority (nonmajor) had $6.2 million in loan commitments to banks and borrowers not reflected in the accompanying financial statements since eligibility requirements were not met as of June 30, 2019, in accordance with GASB Statement No. 33.

23. ACCRUED LIABILITY FOR COMPENSATED ABSENCES

Employees accrue annual leave at a rate of four to nine hours semimonthly, depending on their length of service. The maximum leave accumulation is dependent upon years of service, but in no case may it exceed 432 hours at the end of the leave year. The maximum compensation for annual leave balances is also dependent upon years of service, but in no case may an employee be compensated for more than 336 hours upon separation.

All employees hired after January 1, 1999, are required to enroll in the Virginia Sickness and Disability Program (VSDP) (see Note 18). Under the VSDP, employees receive a specified number of sick and personal leave hours, depending on their length of service, and any balances at the end of the leave year revert. Individuals employed at January 1, 1999, had the option of converting to the VSDP or remaining in the traditional sick leave plan. If converting, the employee's sick leave balance could be used to purchase retirement credits or be converted to disability credits. If an employee opted to remain in the traditional sick leave program, sick leave accrues at a rate of five hours semimonthly. Employees who leave state service after a minimum of five years employment receive the lesser of 25.0 percent of the value of their disability credits or accumulated sick leave at their current earnings rate or $5,000. All employees leaving state service are paid for accrued annual leave up to the maximum leave year limit at their current earnings rate.

In conformance with Section C60 of the GASB Codification, the monetary value of accumulated vacation, compensatory, overtime, recognition, and sick leave payable upon termination is included in the accompanying financial statements and is reported as Compensated Absences. In the government-wide statements, proprietary fund statements, and discrete component unit fund statements, compensated absence amounts are segregated into two components – the amount due within one year and the amount due in more than one year. Compensated absences due within one year consist of an estimate of the amount that will be used by active employees for paid time off and/or paid upon termination, plus the actual amount paid after June 30 for employees terminating on or before June 30. In the governmental fund statements, amounts to be paid from expendable resources are recognized as fund liabilities in the applicable governmental fund types as long-term liabilities and represent payments to employees for separations that occurred on or before June 30. Amounts not payable from expendable resources are reflected in the governmental activities column in the Government-wide Statement of Net Position (see Note 28). All amounts related to the fiduciary funds are recognized in those funds.

The liability as of June 30, 2019, was computed using salary rates effective at that date, and represents vacation, compensatory, overtime, recognition, and sick leave earned, or disability credits held by employees, up to the allowable ceilings.

24. POLLUTION REMEDIATION OBLIGATIONS

The Commonwealth has pollution remediation obligations of $10.4 million, of which $1.9 million is due within one year. With the exception of the Department of Environmental Quality (DEQ), agencies estimated future obligations based on professional consultant estimates and/or historical project expenses of similar projects; however, there is the potential for change in estimates due to price increases or reductions, technology, or applicable laws and regulations. Remediations for DEQ are not estimates but contractual obligations between the Commonwealth and the U.S. Environmental Protection Agency (EPA), and any change due to a reconciliation of incurred costs requires mutual consent and contract amendment.

The estimated Commonwealth pollution remediation liability relates to the anticipated cost of hazardous waste removal, cleanup relating to leakage of underground storage tanks, soil and groundwater contaminations, dump site cleanups, asbestos, lead contamination, mold remediation and remediation relating to superfund state contracts.

Agencies involved in remediation include:

- Department of Conservation and Recreation (DCR)
- Department of Corrections (DOC)
- Department of Emergency Management (VDEM)
- Department of Environmental Quality (DEQ)
- Department of Juvenile Justice (DJJ)
- Department of Transportation (VDOT)

A Facility Lead Agreement was signed between the EPA and VDOT to resolve an issue concerning the storage of lab wastewater in an outdoor lined surface impoundment that operated between 1979 and 1983 for which contamination is present in soil and groundwater. DOC was fined by the EPA in September/October 2003. DOC proposed to conduct a Supplemental Environmental Project (SEP) which included the formation of the Pollution Prevention Section of the Environmental Services Unit, disclosure of all environmental deficiencies to both the EPA and DEQ and corrections of those deficiencies.

The following pollution remediation outlays could not reasonably be estimated as of June 30, 2019:

- VDEM relating to cleanup of an emergency fuel storage facility
- DJJ relating to petroleum storage tank removal
- VDOT relating to groundwater contamination

25. INSURANCE

A. Self-Insurance

The Commonwealth maintains three types of self-insurance plans. The first type of self-insurance is a health care plan administered by the Department of Human Resource Management for Commonwealth employees. The plan is accounted for in the Health Care Internal Service Fund. Interfund premiums are accounted for as internal activity receipts from other funds. As of June 30, 2019, $131.4 million is reported as the estimated claims payable for this fund, which is undiscounted as nearly all healthcare claims are current in nature. The estimated liability is based upon actual claims that have been submitted as well as actuarially determined claims incurred but not reported as described in Note 1.W. Changes in the balances of claims liabilities (dollars in thousands) during the current and prior fiscal years are as follows:

	Balance July 1,	Current Year Claims and Changes in Estimates	Claim Payments	Balance June 30, (1)
2018-2019	$ 116,172	$ 1,448,334	$ (1,433,122)	$ 131,384
2017-2018	$ 112,029	$ 1,322,571	$ (1,318,428)	$ 116,172

(1) The entire ending balance shown above is due within one year.

The second type of plan, Risk Management, is administered by the Department of the Treasury, Division of Risk Management and the Department of Human Resource Management, Worker's Compensation Program. These plans are accounted for in the Risk Management Internal Service Fund. The Department of the Treasury administers risk management programs providing property, general (tort) liability, medical malpractice, automobile and surety bond exposures for the Commonwealth of Virginia as provided in Sections 2.2-1834 through 1838 and Section 2.2-1840 of the *Code of Virginia*. Established subject to the approval of the Governor, risk management plans provide state agencies with protection through purchased insurance, self-insurance or a combination thereof. Interfund premiums for the fund are accounted for as internal activity receipts from other funds. The claims payable is an estimated liability based upon actual claims that have been submitted as well as actuarially determined claims incurred but not reported. As of June 30, 2019, $752.0 million is reported as the estimated claims payable for the risk management plan. This amount is discounted to present value at a rate of 1.9 percent. Undiscounted claims payable as of June 30, 2019, is $997.1 million. The estimated losses are based upon actual claims that have been submitted, as well as claims incurred but not reported. Changes in the balances of claims liabilities (dollars in thousands) during the current and prior fiscal years are as follows:

	Balance July 1,	Current Year Claims and Changes in Estimates	Claim Payments	Balance June 30, (1)
2018-2019	$ 793,359	$ 32,341	$ (73,731)	$ 751,969
2017-2018	$ 797,637	$ 72,097	$ (76,375)	$ 793,359

(1) Of the balance shown above, $74.3 million is due within one year.

For workers' compensation, the Commonwealth assumes the full risk of claims filed. For tort and automobile, liability is assumed at a maximum of $2.0 million per occurrence. Medical malpractice is assumed at the maximum per occurrence recovery limited as stated in Section 8.01-581.15 of the *Code of Virginia*. Risk Management purchases commercial insurance to protect state-owned property with deductibles as stated in the insurance policies.

The third type of plan, Line of Duty, is administered by the Department of Human Resource Management for Line of Duty recipients. Per the amended Line of Duty Act Section 9.1-401 of the *Code of Virginia*, the Department of Human Resource Management is responsible for administration of the premium-free health benefits provided to eligible Line of Duty recipients. The plan is accounted for in the Line of Duty Internal Service Fund. All eligible employees, former employees, and eligible family members will be covered under one program, the Line of Duty Health Benefit Plans. Participating or non-participating refers to whether the employer participates in the Line of Duty Death and Health Benefits Trust Fund, administered by VRS. All state agencies are participating employers, but localities can be either participating or non-participating. As of June 30, 2019, $617,818 is reported as the claims payable for the fund for state employees and participating localities, which is undiscounted as nearly all healthcare claims are current in nature. Changes in the balances of claims liabilities (dollars in thousands) during the current and prior fiscal years are as follows:

	Balance July 1,	Current Year Claims and Changes in Estimates	Claim Payments	Balance June 30, (1)
2018-2019	$ 485	$ 7,200	$ (7,067)	$ 618
2017-2018	$ —	$ 3,729	$ (3,244)	$ 485

(1) The entire ending balance shown above is due within one year.

The Commonwealth has not had any insurance settlements exceed the coverage during the past three years.

University of Virginia employees have the option to participate in the University's self-funded, comprehensive medical care benefits program. The cost of medical care is paid out of employee and employer contributions. Claims and expenses are reported when it is probable that a loss has occurred, and the amount of the loss can be reasonably estimated. Those losses include an estimate of claims that have been incurred but not reported and

the future costs of handling claims. The estimated liability for outstanding claims on June 30, 2019, was $14.4 million. The University has contracted with several third-party claims administrators: Aetna, for its medical claims, United Concordia for its dental claims, and OptumRx for its pharmacy claims.

As of June 30, 2019, the Virginia Commonwealth University Health System Authority (Authority) (a blended component unit of the Virginia Commonwealth University – nonmajor component unit) reports the following claims payable amounts: estimated workers' compensation claims of $13.1 million and estimated losses on malpractice claims of $2.9 million. Aries Insurance Captive (component unit of the Authority) reports claims payable of $22.0 million for estimated losses on malpractice claims. Virginia Premier Health Plan (component unit of the Authority) reports claims payable of $174.8 million for estimated medical claims payable. Additional information on claims payable can be found in the Authority's separately issued financial statements.

Virginia International Terminals, LLC (VIT) (a blended component unit of the Virginia Port Authority – nonmajor) is partially self-insured for certain workers' compensation claims. The Authority maintains insurance coverage of $5.0 million per claim, but is obligated to pay the first $1.0 million of any individual's claims per incident. The Authority bears some self-insurance risk for claims cost in excess of employee premiums/contributions received. Pursuant to a joint arrangement with the Virginia Port Authority, (VPA) (nonmajor) the entity carries stop loss insurance to mitigate exposure to significant claims. The stop loss policy is on a calendar year basis, with renewals effective each January 1. During the calendar year 2018 and 2019, the individual claim cost limit (deductible) under the policy for the Authority was $125,000. The aggregate deductible for VIT and VPA combined claims in excess of the $125,000 individual limit was $6.4 million for calendar year 2019 and $9.5 million for calendar year 2018.

B. Public Entity Risk Pools

The Commonwealth administers three types of public entity risk pools for the benefit of local governmental units: healthcare, risk management, and line of duty insurance. The Local Choice Health Care plan was established to make comprehensive healthcare insurance available to localities and political subdivisions at affordable rates and with stable premiums. During the fiscal year, there were 441 local government units participating in the pool. This includes 67 school districts, 37 counties, 130 cities/towns, and 207 other subdivisions. This program is accounted for in the Local Choice Health Care Enterprise Fund (nonmajor).

The Department of Human Resource Management, under Section 2.2-1204 of the *Code of Virginia*, has the authority to design, set rates, and administer the Local Choice Health Care fund. The pool's standard contract period is one year. However, a member group may withdraw on the last day of any month with three month's written notice. Contributions are based on the current necessary contribution and the amortization of experience adjustments in the pool. As of June 30, 2019, $46.8 million is reported as the actuarially determined estimated claims payable for this fund based on claims incurred but not reported.

The actuarial liability is determined for the membership pool in total and then adjusted for each locality based on individual historic and demographic data. If the pool's assets were to be exhausted, the program participants would share the responsibility for any liabilities or deficits.

The Department of the Treasury, Division of Risk Management administers the VARisk and VARisk2 risk management programs for political subdivisions, constitutional officers and others in accordance with Section 2.2-1839 of the *Code of Virginia*. These pools were established to provide an economical, low-cost alternative to the commercial insurance market for the Commonwealth's political subdivisions. These risk programs are accounted for in the Risk Management Enterprise Fund (nonmajor). The pool is established subject to approval by the Governor. It may be insurance, self-insurance, or any combination thereof, and must provide protection and legal defense against liability. Participation is voluntary and open to those identified in Section 2.2-1839 of the *Code of Virginia*. As of June 30, 2019, there were 508 units of local government in the pool, including 16 towns and 25 counties. The remaining 467 units include a large variety of boards, commissions, authorities, and special districts.

The VARisk program is comprised of constitutional officers and regional jails, and participation is not mandated by the *Code of Virginia*. However, the Compensation Board (part of the primary government) requires participation by all constitutional officers.

The VARisk2 program is comprised of local governments and has a minimum membership period of one year. However, a member group can cancel membership and withdraw from the plan on their coverage anniversary date or at the end of the fiscal year with 30 days' notice.

No excess insurance or reinsurance is provided. The risk assumed by the VARisk and VARisk2 pool for liability is $1.0 million per occurrence, with the exception of sheriffs and their deputies, which is $1.5 million per occurrence.

As of June 30, 2019, $35.5 million and $4.0 million is reported as estimated claims payable for the VARisk and the VARisk2 programs, respectively. These figures are actuarially determined for the funds in total and are reported at gross. They are based on the estimated ultimate cost of settling the claims, including the effects of inflation and other societal and economic factors. They do not reflect possible reimbursements for insurance recoveries.

Per the amended Line of Duty Act Section 9.1-401 of the *Code of Virginia*, the Virginia Department of Human Resource Management (DHRM) is responsible for administration of the premium-free health benefits provided to eligible LODA recipients. All eligible employees, former employees, and eligible family members will be covered under one program, the LODA Health Benefits Plans. As of June 30, 2019, $1.5 million is reported as the actuarially determined estimated claims payable for the non-participating localities reported in this fund based on claims incurred but not reported.

The following schedule (dollars in thousands) shows the changes in claims liabilities for the past two fiscal years.

	Local Choice Health Care		Risk Management		Line of Duty	
	June 30, 2019	June 30, 2018	June 30, 2019	June 30, 2018	June 30, 2019	June 30, 2018
Unpaid Claims and Claim Adjustment Expenses at Beginning of Fiscal Year	$ 40,601	$ 38,046	$ 36,156	$ 37,568	$ 2,208	$ —
Incurred Claims and Claim Adjustment Expenses:						
Provision for Insured Events of the Current Fiscal Year	450,166	424,357	14,151	14,210	16,607	16,987
Changes in Provision for Insured Events of Prior Fiscal Years	—	—	(951)	(6,885)	—	—
Total Incurred Claims and Adjustment Expenses	450,166	424,357	13,200	7,325	16,607	16,987
Payments:						
Claims and Claim Adjustment Expenses Attributable to Insured Events of the Current Fiscal Year	443,931	421,802	1,075	1,979	17,302	14,779
Claims and Claim Adjustment Expenses Attributable to Insured Events of the Prior Fiscal Year	—	—	9,302	7,281	—	—
Total Payments	443,931	421,802	10,377	9,260	17,302	14,779
Change in Provision for Discounts	—	—	530	523	—	—
Total Unpaid Claims and Claim Adjustment Expenses at End of the Fiscal Year (Discounted) (1) (2) (3) (4)	$ 46,836	$ 40,601	$ 39,509	$ 36,156	$ 1,513	$ 2,208
Total Unpaid Claims and Claim Adjustment Expenses at End of the Fiscal Year (Undiscounted)	$ 46,836	$ 40,601	$ 41,375	$ 37,855	$ 1,513	$ 2,208

Note (1): The entire balance for Local Choice Health Care, $46,836 (dollars in thousands) is due within one year.

Note (2): Of the balance shown above for Risk Management, $10,872 (dollars in thousands) is due within one year.

Note (3): The entire balance for Line of Duty, $1,513 (dollars in thousands) is due within one year.

Note (4): The interest rate used for discounting is 1.9 percent.

26. ACCOUNTS PAYABLE

The following table (dollars in thousands) summarizes Accounts Payable as of June 30, 2019.

	Vendor	Salary / Wage	Retainage	Other	Foundations (1)	Total
Primary Government:						
General	$ 270,747	$ 109,496	$ 14	$ —	$ —	$ 380,257
Major Special Revenue Funds:						
Commonwealth Transportation	473,611	35,012	2,629	—	—	511,252
Federal Trust	67,873	16,723	1,119	—	—	85,715
Literary	1	—	—	—	—	1
Nonmajor Governmental Funds	54,698	15,842	5,803	298	—	76,641
Major Enterprise Funds:						
Virginia Lottery (2)	11,065	1,875	—	5,512	—	18,452
Virginia College Savings Plan	214	590	—	200	—	1,004
Unemployment Compensation	59	—	—	—	—	59
Nonmajor Enterprise Funds	52,320	7,292	570	3	—	60,185
Internal Service Funds	90,121	3,157	490	—	—	93,768
Private Purpose Trust Funds	—	1	—	368	—	369
Pension and Other Employee Benefit Trust Funds (3)	3,468	2,728	—	40,844	—	47,040
Agency Funds	3,153	—	—	5,845	—	8,998
Total Primary Government (4)	$ 1,027,330	$ 192,716	$ 10,625	$ 53,070	$ —	$ 1,283,741
Discrete Component Units:						
Virginia Housing Development Authority	$ 1,388	$ 5,560	$ —	$ 20,015	$ —	$ 26,963
Virginia Public School Authority	71	—	—	—	—	71
Virginia Resources Authority	95	4	—	—	—	99
Virginia College Building Authority	14	—	—	—	—	14
Nonmajor Component Units	725,121	501,970	62,323	5,641	130,031	1,425,086
Total Component Units	$ 726,689	$ 507,534	$ 62,323	$ 25,656	$ 130,031	$ 1,452,233

Note (1): Foundations represent FASB reporting entities defined in Note 1.B.

Note (2): Other Accounts Payable for the Virginia Lottery primarily represents unclaimed prizes attributable to multi-state games and player subscription wallets.

Note (3): Other Accounts Payable for the Pension and Other Employee Benefit Trust Fund consists of $23,978 (dollars in thousands) in investment management fees and $16,866 (dollars in thousands) in program benefit liabilities.

Note (4): Fiduciary liabilities of $56,407 (dollars in thousands) are not included in the Government-wide Statement of Net Position. In addition, governmental fund liabilities of $128,259 (dollars in thousands) are included in the Government-wide Statement of Net Position, but excluded from the above amounts.

27. OTHER LIABILITIES

The following tables (dollars in thousands) summarize Other Liabilities as of June 30, 2019.

	Primary Government					
	General	Commonwealth Transportation	Federal Trust	Nonmajor Governmental Funds	Virginia Lottery	Virginia College Savings Plan (1)
Lottery Prizes Payable	$ —	$ —	$ —	$ —	$ 70,036	$ —
Medicaid Payable	469,505	—	963,696	128,690	—	—
Family Access to Medical Insurance Security Payable	3,810	—	26,904	—	—	—
Tax Refunds Payable	892,370	—	—	—	—	—
Insurance Carrier Surety Deposit	—	—	—	—	—	—
Deposits Pending Distribution	3,651	1,239	1	5,027	—	—
Car Tax Payable	263,025	—	—	—	—	—
Other Liabilities	161	3	7	664	—	11,853
Total Other Liabilities	$ 1,632,522	$ 1,242	$ 990,608	$ 134,381	$ 70,036	$ 11,853

	Primary Government				
	Nonmajor Enterprise Funds	Internal Service Funds	Pension and Other Employee Benefit Trust Funds (2)	Agency Funds	Total Primary Government (3)
Lottery Prizes Payable	$ —	$ —	$ —	$ —	$ 70,036
Medicaid Payable	—	—	—	—	1,561,891
Family Access to Medical Insurance Security Payable	—	—	—	—	30,714
Tax Refunds Payable	—	—	—	—	892,370
Insurance Carrier Surety Deposit	—	—	—	450,702	450,702
Deposits Pending Distribution	136	23	—	87,539	97,616
Car Tax Refund Payable	—	—	—	—	263,025
Other Liabilities	—	—	201,408	1,915	216,011
Total Other Liabilities	$ 136	$ 23	$ 201,408	$ 540,156	$ 3,582,365

Note (1): Other Liabilities of $11,853 (dollars in thousands) reported by the Virginia College Savings Plan represent amounts associated with pending investment trades and program distributions payable.

Note (2): Other Liabilities of $201,408 (dollars in thousands) reported in Pension and Other Employee Benefit Trust Funds are made up of $115,851 (dollars in thousands) in other funds managed by the System; $80,925 (dollars in thousands) in pending investment transactions, including $69,700 (dollars in thousands) in net foreign exchange contracts payable, and $7,626 (dollars in thousands) in other investment payables; $2,635 (dollars in thousands) in foreign taxes payables related to the System benefit plans; $964,000 in dividends payable related to the System benefit plans; and $4,632 (dollars in thousands) in other payables related to the System benefit plans.

Note (3): Fiduciary liabilities of $741,564 (dollars in thousands) are not included in the Government-wide Statement of Net Position. Governmental fund liabilities of $78,617 (dollars in thousands) are included in the Government-wide Statement of Net Position, but excluded from the above amounts.

	Component Units					
	Virginia Housing Development Authority	Virginia Public School Authority	Virginia Resources Authority	Virginia College Building Authority	Nonmajor Component Units (4)	Total Component Units
Accrued Interest Payable	$ 27,742	$ 53,975	$ 26,825	$ 91,456	$ 94,781	$ 294,779
Deposits Pending Distribution	—	—	—	—	560,889	560,889
Short-term Debt	445,300	—	—	—	403,079	848,379
Grants Payable	—	—	—	—	7,727	7,727
Other Liabilities	33,632	—	1,187	2,442	318,214	355,475
Total Other Liabilities	$ 506,674	$ 53,975	$ 28,012	$ 93,898	$ 1,384,690	$ 2,067,249

Note (4): Other Liabilities of nonmajor component units are predominantly comprised of derivative instruments reported by the following: University of Virginia of $35,068 (dollars in thousands), Virginia Commonwealth University Health System Authority (blended component unit of Virginia Commonwealth University) of $45,200 (dollars in thousands), and foundations of higher education institutions of $51,478 (dollars in thousands). Other Liabilities also includes a reserve for medical malpractice reported by a foundation of the University of Virginia of $71,561 (dollars in thousands).

Medicaid Payable

Medicaid Payable represents services rendered but not billed by providers and potential liability resulting from cost reports not settled as of year-end. Providers subject to cost settlement are paid in the interim based on established per diem or diagnosis related group rates for services.

The Department of Medical Assistance Services (DMAS) estimates, based on past experience, the total amount of Medicaid claims that will be paid from the Medicaid program in the future which relate to services provided before year-end. As of June 30, 2019, the estimated liability related to Medicaid claims totaled $1.6 billion. Of this amount, $469.5 million is reflected in the General Fund (major governmental), $963.7 million in the Federal Trust Special Revenue Fund (major governmental), and $128.7 million in the Health and Social Services Fund (nonmajor special revenue).

Family Access to Medical Insurance Security Payable

DMAS estimates the total amount of claims that will be paid from the Family Access to Medical Insurance Security program in the future which relate to services provided before year-end. As of June 30, 2019, the estimated liability related to claims totaled $30.7 million. Of this amount, $3.8 million is reflected in the General Fund (major governmental) and $26.9 million in the Federal Trust Special Revenue Fund (major governmental).

Tax Refunds Payable

Tax refunds payable represent refunds due on individual tax returns filed for the calendar year ended on or before December 31, 2018, and on business tax returns filed for corporate fiscal years ending on or before June 30, 2019. The individual tax return filing deadline is May 1 of each year for the preceding calendar year. The corporate tax return filing deadline is the 15th day of the fourth month following the close of the corporate fiscal year. Additionally, as of June 30, 2019, $424.3 million represents taxpayer refunds provided pursuant to Chapter 854 (see Note 7).

Car Tax Refund Payable

During the year ended June 30, 1998, the General Assembly passed the Personal Property Tax Relief Act. Under the terms of this legislation, the Commonwealth assumed financial responsibility for a portion, ranging from 12.5 percent to 70.0 percent, of the personal property taxes assessed by localities.

During 2004, the General Assembly modified this legislation. Chapter 1 of Special Session 1 (2004) established a $950.0 million limit on the amount the Commonwealth would appropriate for personal property tax relief, beginning in tax year 2006. It further established that each county, city, and town would receive a fixed percentage of the $950.0 million, with payments to begin on or after July 1, 2006 (fiscal year 2007). The accrued liability amount of $263.0 million reflects payments owed to localities as of June 30 and paid in July.

Termination Benefits

During fiscal year 2019, the Commonwealth laid off 274 employees. The affected employees had the option of volunteering for enhanced retirement benefits or severance benefits. The enhanced retirement benefits option was elected by 44 employees, and the remaining 230 employees elected severance benefits. The severance benefits include salary payments based on years of service and insurance premium payments for health and life insurance. All severance benefits were initiated during fiscal year 2019 and will end no later than June 30, 2020. The benefit cost expended and the outstanding liability as of June 30, 2019 for governmental funds, are $3.7 million and $1.2 million, respectively. Since the severance benefits last for a maximum of 12 months, discounting of future cash flows is unnecessary. Additionally, the estimated payments are calculated using the Department of Human Resources' Termination Benefits Calculator and actual costs.

Short-term Debt

Short-term debt results from borrowings from anticipation notes, lines of credit, and similar loans with parties external to the primary government. The primary government's policy is to disclose activity related to short-term borrowings occurring during the fiscal year. For fiscal year 2019, the primary government's agencies did not participate in short-term borrowings with external parties.

The Commonwealth implemented GASB Statement No. 88, *Certain Disclosures Related to Debt, including Direct Borrowings and Direct Placements*, effective for fiscal year 2019. This statement requires the disclosure of any unused lines of credit for fiscal year 2019. The primary government does not have any unused lines of credit at June 30, 2019.

The Virginia Housing Development Authority (major component unit) has a direct borrowing from a line of credit of $445.3 million. University of Virginia (nonmajor component unit) has commercial paper of $243.9 million primarily used to bridge finance capital projects and, from time to time, fund operations. Virginia Commonwealth University and Virginia Polytechnic Institute and State University (nonmajor component units) have commercial paper of $54.9 million primarily for capital projects. Various higher education institution foundations (nonmajor component units) have lines of credit of $92.4 million primarily for construction or property acquisition. The Virginia Museum of Fine Arts Foundation (nonmajor component unit) has borrowings from lines of credit totaling $11.6 million. Additionally, Fort Monroe Authority (nonmajor component unit) has short-term debt of $260,784 and the Library of Virginia Foundation (nonmajor component unit) has a $18,500 note with a related party. The balance of Other Liabilities is spread among various other funds.

The Virginia Housing Development Authority (major component unit) has an unused line of credit of $100.0 million. The University of Virginia, Virginia Polytechnic Institute and State University, Virginia Commonwealth University Health System Authority (blended component unit of Virginia Commonwealth University), the Hampton Roads Sanitation District Commission, Virginia Port Authority, and the Fort Monroe Authority (nonmajor component units) have unused lines of credit of $500.0 million, $190.0 million, $50.0 million, $1.0 million, $1.0 million, and $500,000, respectively. For the University of Virginia, in the event of default under revolving credit agreements, any outstanding advances, interest, and the value of the promissory note would be due and payable to the various banking institutions.

28. LONG-TERM LIABILITIES

Commonwealth bonds are issued pursuant to Section 9 of Article X of the Constitution of Virginia. Section 9(a) bonds have been issued to redeem previous debt obligations. Section 9(b) bonds have been authorized by the citizens of Virginia through bond referenda to finance capital projects. These bonds are retired through the use of state appropriations. Section 9(c) bonds are issued to finance capital projects which, when completed, will generate revenue to repay the debt. Section 9(a), 9(b), and 9(c) bonds are tax-supported general obligation bonds and are backed by the full faith and credit of the Commonwealth. No other long-term debt obligations are backed by the full faith and credit of the Commonwealth.

Section 9(d) bonds are revenue bonds that are not backed by the full faith and credit of the Commonwealth. These bonds are not general obligation bonds and are not deemed to constitute a legal liability of the Commonwealth. However, this debt may be supported by state appropriations in whole or in part, such as certain debt of the Commonwealth Transportation Board (primary government) and the Virginia Port Authority (nonmajor component unit). Other 9(d) revenue bonds are payable from general revenues of the component units, or from revenues of specific revenue-producing capital projects, such as the teaching hospitals, dormitories, student centers, and dining halls at the various colleges and universities (nonmajor component units).

Certain 9(d) bonds are considered, along with 9(a), 9(b), and 9(c) bonds, to be tax-supported debt of the Commonwealth. Tax-supported debt includes all bonds and short-term debt for which debt service payments are made or are ultimately pledged to be made from tax revenues (net of sinking fund requirements).

Other 9(d) revenue bonds are considered debt not supported by taxes. For this debt, the Commonwealth has no direct or indirect pledge of tax revenues. In certain limited cases, the Commonwealth has made a moral obligation pledge. A government's moral obligation pledge provides a deficiency make-up for bondholders in the event pledged revenues prove to be insufficient. If a revenue deficiency exists, monies held in a debt service reserve fund are used to pay bondholders. The issuer then requests that the legislative body provide an appropriation to replenish the reserve fund before subsequent debt service is due. The legislative body may, but is not legally required to, replenish the reserve fund.

GASB Statement No. 88, *Certain Disclosures Related to Debt, including Direct Borrowings and Direct Placements*, requires disclosures related to unused lines of credit (see Note 27), direct borrowings and placement debt, and specific disclosures related to debt default. Direct borrowings and placements have terms with an investor or lender and are not offered for public sale.

The following schedule presents the total long-term liabilities of the Commonwealth, and the portion of these amounts which are due within one year, as reported on the Government-wide Statement of Net Position.

Total Long-term Liabilities
June 30, 2019

(Dollars in Thousands)	Balance At June 30	Amount Due Within One Year
Primary Government:		
Governmental Activities:(1)		
General Obligation Bonds: (2)		
9(b) Public Facilities (3)	$ 401,873	$ 48,140
9(c) Parking Facilities (3)	8,567	785
9(c) Transportation Facilities (3)	6,061	2,685
Total General Obligation Bonds	416,501	51,610
Nongeneral Obligation Bonds - 9(d):		
Transportation Debt (3) (4)	4,118,431	199,728
Virginia Public Building Authority (3)	2,863,660	164,670
Total Nongeneral Obligation Bonds	6,982,091	364,398
Other Long-term Obligations:		
Net Pension Liability (6)	3,799,890	—
Net OPEB Liability (7)	802,012	6,177
Total OPEB Liability (7)	565,448	23,248
Compensated Absences	317,540	196,445
Capital Lease Obligations	30,882	6,140
Pollution Remediation Obligations	10,430	1,879
Installment Purchase Obligations from Direct Borrowings	114,931	15,125
Economic Development Authority Obligations (3)	23,366	6,795
Hampton Roads Transportation Accountability Commission (3) (5)	580,311	—
Other Liabilities	30,322	6.456
Total Other Long-term Obligations	6,275,132	262,265
Total Governmental Activities (3)	13,673,724	678,273
Business-type Activities: (1) (5)		
Other Long-term Obligations:		
Net Pension Liability	128,005	—
Net OPEB Liability	22,299	63
Total OPEB Liability	20,042	825
Compensated Absences	11,070	8,427
Installment Purchase Obligations from Direct Borrowings	518	109
Tuition Benefits Payable	1,991,469	283,077
Lottery Prizes Payable	112,983	10,691
Total Other Long-term Obligations	2,286,386	303,192
Total Business-type Activities	2,286,386	303,192
Total Primary Government	15,960,110	981,465

Continued on next page

Total Long-term Liabilities

June 30, 2019

(Continued from previous page)

(Dollars in Thousands)	Balance At June 30	Amount Due Within One Year
Component Units:		
General Obligation Bonds: (2)		
Higher Education Fund - 9(c) Bonds (3)	893,106	56,260
Nongeneral Obligation Bonds:		
Higher Education Institutions - 9(d) (3) (5)	2,667,541	21,961
Higher Education Institutions - 9(d) from Direct Placements (3) (5)	177,115	3,160
Virginia College Building Authority (3)	4,566,772	295,885
Virginia Port Authority - 9(d) (3) (8)	519,896	15,830
Virginia Housing Development Authority - 9(d) (3) (5)	2,798,010	105,775
Virginia Housing Development Authority from Direct Placements - 9(d) (3) (5)	244,050	6,700
Virginia Resources Authority - 9(d) (3) (9)	3,479,670	185,207
Virginia Public School Authority - 9(d) (3) (5)	3,548,437	251,750
Virginia Public School Authority from Direct Placements - 9(d) (3) (5)	6,166	—
Hampton Roads Sanitation District Commission (3) (5)	891,629	84,951
Virginia Biotechnology Research Partnership Authority (3)	14,220	4,200
Foundations (5) (10)	1,082,349	141,655
Total Nongeneral Obligation Bonds	19,995,855	1,117,074
Other Long-term Obligations:		
Net Pension Liability (11)	2,490,864	—
Net OPEB Liability (12)	799,030	330
Total OPEB Liability (13)	479,384	17,273
Compensated Absences	349,246	263,432
Capital Lease Obligations (14)	2,312,999	4,091
Notes Payable (5)	2,011,982	187,100
Notes Payable from Direct Borrowings (5)	177,906	9,716
Installment Purchase Obligations from Direct Borrowings	55,259	8,136
Trust and Annuity Obligations (5) (15)	65,116	—
Other Liabilities (5)	272,372	9,596
Total Other Long-term Obligations (Excluding Foundations)	9,014,158	499,674
Other Long-term Obligations (Foundations): (5) (10)		
Compensated Absences	16,708	13,606
Capital Lease Obligations	472	192
Notes Payable	269,662	30,833
Trust and Annuity Obligations (15)	73,198	1,908
Other Liabilities	270,007	15,108
Total Other Long-term Obligations - Foundations	630,047	61,647
Total Other Long-term Obligations	9,644,205	561,321
Total Component Units	30,533,166	1,734,655
Total Long-term Liabilities	$ 46,493,276	$ 2,716,120

1. Pursuant to GASB Statement No. 34, governmental activities include internal service funds. Business-type activities are considered enterprise funds.
2. Total general obligation debt of the Commonwealth is $1.3 billion.
3. Amounts are net of any unamortized discounts and premiums.
4. This debt includes $1.2 billion that is not supported by taxes.
5. This debt is not supported by taxes.
6. This does not include net pension liabilities from fiduciary funds of $65,845.
7. This does not include Net OPEB obligations of $12,134 or Total OPEB obligations of $8,855 from fiduciary funds.
8. This debt includes $285.8 million for bonds that is not supported by taxes.
9. This debt is not supported by taxes; however, $926.5 million is considered moral obligation debt.
10. Foundations represent FASB reporting entities defined in Note 1.B.
11. This includes net pension liabilities that do not relate to the Virginia Retirement System's State Plan from the Hampton Roads Sanitation District Commission and the Virginia Port Authority of $20.3 million and $15.5 million, respectively. This debt is not supported by taxes.
12. This includes OPEB obligations that do not relate to the Virginia Retirement System's State Plan from the Hampton Roads Sanitation District, Virginia Port Authority, Virginia Resources Authority, Roanoke Higher Education Authority, and Virginia Biotechnology Research Partnership Authority of $18.7 million, $576,000, $205,649, $90,383, and $52,055, respectively. This debt is not supported by taxes.
13. This includes OPEB obligations that do not relate to the Department of Human Resource Management from the University of Virginia of $58.3 million and Virginia Port Authority of $910,998. This debt is not supported by taxes.
14. This includes $7.5 million that is supported by taxes.
15. These generally represent split-interest agreements that represent donor contributed assets with the requirement that an annual distribution be made to the donor or specified beneficiary. The annual distributions are usually for a fixed dollar amount or a fixed percentage of the trust's fair market value. The present value of these commitments is reported as Trust and Annuity Obligations.

Primary Government

Transportation Facilities Debt

Transportation Facilities Bonds include $6.1 million of Section 9(c) general obligation bonds and $4.1 billion of Transportation Facilities Section 9(d) debt. The Section 9(d) debt includes $2.9 billion of Section 9(d) revenue bonds and $1.2 billion of Grant Anticipation Revenue Notes (GARVEES) in addition to the outstanding Section 9(d) revenue bonds. Section 9(c) principal and interest requirements for the current year totaled $3.0 million. Section 9(d) principal and interest requirements for the current year totaled $376.0 million. The Section 9(c) Transportation Facilities Bonds were issued to fund the construction and improvement of the George P. Coleman Bridge. The Section 9(d) Transportation Facilities Bonds were issued to fund the construction of State Route 28, U.S. Route 58, the Northern Virginia Transportation District Program, the Oak Grove Connector (Chesapeake), and costs of certain transportation projects in the Commonwealth. The GARVEES were issued to finance various Federal Aid Transportation projects throughout the Commonwealth. The interest rates for these bonds range from 1.0 percent to 5.4 percent and the issuance dates range from October 10, 2002 to May 16, 2019.

On December 5, 2018, the Commonwealth Transportation Board issued $75.8 million of Commonwealth of Virginia Federal Transportation Grant Anticipation Revenue Notes, Series 2018. Series 2018 will be maturing in semi-annual installments on March 15 and September 15 in the years 2019 to 2033 and interest is payable on March 15 and September 15 at rates varying from 4.0 to 5.0 percent. The net proceeds of the Series 2018 bonds will be used to pay for the costs of certain transportation projects in the Commonwealth and certain costs related to the issuance of the 2018 bonds.

On April 23, 2019, the Commonwealth Transportation Board issued $236.0 million of Commonwealth of Virginia Transportation Capital Projects Revenue Bonds, Series 2019. Series 2019 Refunding Revenue Bonds will be maturing in annual installments on May 15 in the years 2020 to 2043 and interest is payable semi-annually on May 15 and November 15 at rates varying from 3.0 to 5.0 percent. The net proceeds of the Series 2019 bonds will be used to pay for the costs of certain transportation projects in the Commonwealth and certain costs related to the issuance of the 2019 bonds.

On May 16, 2019, the Commonwealth Transportation Board issued $43.4 million of Commonwealth of Virginia Transportation Revenue Refunding Bonds, Series 2019A. Series 2019A Refunding Revenue Bonds will be maturing in annual installments on May 15 in the years 2020 to 2034 and interest is payable on May 15 and November 15 at rates varying from 3.0 to 5.0 percent. The 2019A Series bonds were issued to advance refund the outstanding Series 2009A-2 bonds.

The following schedules detail the annual funding requirements necessary to amortize Transportation Facilities 9(c) bonds and 9(d) debt. Pursuant to the American Recovery and Reinvestment Act, the Commonwealth expects to receive an interest subsidy to reimburse interest payments of $61.1 million for Build America Bonds (BABs) issued. The BABs are applicable to Commonwealth of Virginia Transportation Series 2010A Capital Project Revenue Bonds. Additionally, the Commonwealth will receive the amounts required to pay the debt service on outstanding Series 2002 and Series 2012 bonds from the Route 28 Transportation Improvement District, annually. The Commonwealth will also receive a portion of the debt service amount for Oak Grove and the Northern Virginia Transportation District from the localities where the projects are located, annually.

9(c) TRANSPORTATION FACILITIES BONDS
Debt Service Requirements to Maturity

Maturity	*Principal*	*Interest*	*Total*
2020	$ 2,685,000	$ 275,000	$ 2,960,000
2021	2,815,000	140,750	2,955,750
Add:			
Unamortized Premium	561,270	—	561,270
Total	$ 6,061,270	$ 415,750	$ 6,477,020

9(d) TRANSPORTATION FACILITIES DEBT
Debt Service Requirements to Maturity

Maturity	*Principal*	*Interest*	*Total*
2020	$ 199,728,337	$ 166,025,707	$ 365,754,044
2021	204,035,956	155,773,456	359,809,412
2022	197,670,226	145,870,579	343,540,805
2023	206,090,351	136,281,106	342,371,457
2024	214,630,602	126,374,876	341,005,478
2025-2029	1,042,039,315	474,986,876	1,517,026,191
2030-2034	891,005,000	241,710,911	1,132,715,911
2035-2039	526,945,000	78,913,883	605,858,883
2040-2044	167,030,000	13,177,000	180,207,000
Less:			
Unamortized Discount	(76,377)	—	(76,377)
Add:			
Accretion on Capital Appreciation Bonds	29,503,423	—	29,503,423
Unamortized Premium	439,828,921	—	439,828,921
Total	$ 4,118,430,754	$ 1,539,114,394	$ 5,657,545,148

Fairfax Economic Development Authority Obligations

In fiscal year 2006, the Fairfax County Economic Development Authority (EDA) issued Section 9(d) revenue bonds to pay for the Commonwealth's (VDOT) costs of the planning, design and construction of a transportation infrastructure and related public safety operations complex to be developed on the contiguous sites in the county commonly referred to as "Camp 30" for the joint use of VDOT and the county. In fiscal year 2014, Fairfax County EDA issued a series of revenue refunding bonds, which refunded Series 2006 revenue bonds. The Commonwealth's obligation is set out in a payment agreement between Fairfax County EDA and the Commonwealth of Virginia, Department of Transportation, in which the Commonwealth agrees to make payments equal to the debt service from amounts appropriated by the General Assembly. The interest rates for these bonds range from 1.0 percent to 5.0 percent and the issue date was March 26, 2014. The principal and interest

requirements for the current year totaled $7.8 million. The following schedule details the annual funding requirements necessary to repay these bonds.

FAIRFAX COUNTY ECONOMIC DEVELOPMENT AUTHORITY
Debt Service Requirements to Maturity

Maturity	Principal	Interest	Total
2020	$ 6,795,000	$ 1,032,250	$ 7,827,250
2021	7,135,000	692,500	7,827,500
2022	6,715,000	335,750	7,050,750
Add:			
Unamortized Premium	2,721,356	—	2,721,356
Total	$ 23,366,356	$ 2,060,500	$ 25,426,856

Public Facilities Bonds

Section 9(b) general obligation bonds consist of Public Facilities Bonds, Series 2009D Refunding, Series 2009E, Series 2012A Refunding, Series 2013B Refunding, Series 2015B Refunding, and Series 2016B Refunding. Bonds were issued to fund construction projects for higher educational institutions, behavioral health, and/or park facilities. The Series 2009D bonds were issued to advance refund outstanding Series 2004A, Series 2005A, and Series 2006B bonds. The Series 2012A bonds were issued to advance refund outstanding Series 2002, Series 2003A, Series 2004A, and Series 2005A bonds. The Series 2013B bonds were issued to advance refund outstanding Series 2005A, Series 2006B, Series 2007A, and Series 2007B. The Series 2015B bonds were issued to advance refund certain maturities of outstanding Series 2007B, Series 2008A, and Series 2008B bonds. The Series 2016B bonds were issued to advance refund certain maturities of outstanding Series 2009A bonds. Principal and interest requirements for the current year totaled $66.9 million. The interest rates for all bonds range from 2.0 percent to 5.0 percent and the issuance dates range from October 21, 2009, to November 10, 2016. The following schedule details the annual funding requirements necessary to repay these bonds. Pursuant to the American Recovery and Reinvestment Act, the Commonwealth expects to receive an interest subsidy to reimburse interest payments of $2.1 million for Build America Bonds (BABs) issued. The BABs are applicable to Series 2009E Public Facilities Revenue Bonds.

9(b) PUBLIC FACILITIES BONDS
Debt Service Requirements to Maturity

Maturity	Principal	Interest	Total
2020	$ 48,140,000	$ 16,562,795	$ 64,702,795
2021	48,140,000	14,270,895	62,410,895
2022	48,260,000	11,885,225	60,145,225
2023	48,200,000	9,610,635	57,810,635
2024	45,690,000	7,373,245	53,063,245
2025-2029	117,340,000	12,212,220	129,552,220
Add:			
Unamortized Premium	46,102,747	—	46,102,747
Total	$ 401,872,747	$ 71,915,015	$ 473,787,762

Parking Facilities Bonds

Section 9(c) general obligation bonds consist of Parking Facilities Bonds, Series 2009D Refunding, 2012A Refunding, and Series 2016B Refunding. The Series 2009D Refunding bonds were issued to advance refund outstanding Series 2004A bonds. The Series 2012A Refunding bonds were issued to advance refund outstanding Series 2002 Refunding and Series 2004A bonds. The Series 2016B Refunding bonds were issued to advance refund certain maturities of outstanding Series 2009B bonds. The interest rate for these bonds range from 2.0 percent to 5.0 percent, and the issuance dates range from October 21, 2009, to November 10, 2016. Current year principal and interest requirements totaled $1.4 million. The following schedule details the annual funding requirements necessary to repay these bonds.

9(c) PARKING FACILITIES BONDS
Debt Service Requirements to Maturity

Maturity	Principal	Interest	Total
2020	$ 785,000	$ 343,310	$ 1,128,310
2021	825,000	304,060	1,129,060
2022	865,000	262,810	1,127,810
2023	906,257	223,652	1,129,909
2024	952,789	178,339	1,131,128
2025-2029	3,145,000	371,550	3,516,550
Add:			
Unamortized Premium	1,088,157	—	1,088,157
Total	$ 8,567,203	$ 1,683,721	$ 10,250,924

Virginia Public Building Authority

Virginia Public Building Authority Section 9(d) bonds consist of 2005D, 2009A, 2009B, 2009C, 2009D Refunding, 2010A, 2010B-2, 2010B-3 Refunding, 2011A, 2011B, 2012A Refunding, 2013A, 2013B Refunding, 2014A, 2014B, 2014C Refunding, 2015A, 2015B Refunding, 2016A, 2016B Refunding, 2016C (AMT), 2016D (Taxable), 2017A Refunding, 2018A, and 2018B (Taxable), 2019A, 2019B (AMT), and 2019C (Taxable). All bonds were issued for the purpose of constructing, improving, furnishing, maintaining, and acquiring public buildings for the use of the Commonwealth and also to reimburse localities, regional jail authorities or other combination of localities under the Regional Jail Financing Program. The Series 2009D bonds were issued to advance refund outstanding series 2001A and 2002A Revenue bonds. The Series 2010B-3 bonds were issued to advance refund outstanding series 2002A and 2004B Revenue bonds. The Series 2012A bonds were issued to advance refund outstanding series 2004B and 2005C Revenue bonds. The Series 2013B bonds were issued to advance refund 2006A and 2006B revenue bonds. The Series 2014C bonds were issued to advance refund outstanding Series 2004A Refunding, 2004B, 2004C Refunding, and 2004D Refunding bonds, and certain maturities of the 2005C, 2006A, 2006B, and 2007A bonds. The Series 2015B bonds were issued to advance refund outstanding series 2005A Refunding, 2005B Refunding, and 2006A bonds and certain maturities of the series 2008B bonds. The Series 2016B bonds were issued to advance refund certain maturities of the series 2009B and 2011A bonds. The Series 2017A bonds were issued to advance refund certain maturities of the 2011A, 2013A, and 2014A bonds. The interest rates range from 1.9

percent to 5.9 percent and the issuance dates range from December 7, 2005, to April 2, 2019. The Series 2005D bonds are demand bonds with variable rates which are reset weekly by the remarketing agent. The 2005D bonds are subject to optional redemption. The principal balance outstanding on June 30, 2019 of $50.0 million is scheduled to be paid based on mandatory sinking fund requirements and included in the following schedule. Additional information on these demand bonds may be obtained from the audited financial statements on the Department of the Treasury website at www.trs.virginia.gov.

Current year principal and interest requirements for all VPBA bonds totaled $260.0 million. The following schedule details the annual funding requirements necessary to repay these bonds. Pursuant to the American Recovery and Reinvestment Act, the Commonwealth expects to receive an interest subsidy to reimburse interest payments of $49.2 million for Build America Bonds (BABs) issued. The BABs are applicable to Series 2010 Revenue Bonds.

9(d) VIRGINIA PUBLIC BUILDING AUTHORITY BONDS
Debt Service Requirements to Maturity

Maturity	*Principal*	*Interest*	*Total*
2020	$ 164,670,000	$ 110,700,169	$ 275,370,169
2021	173,205,000	105,287,590	278,492,590
2022	172,240,000	97,122,538	269,362,538
2023	176,820,000	88,847,771	265,667,771
2024	182,555,000	80,499,771	263,054,771
2025-2029	860,295,000	277,436,069	1,137,731,069
2030-2034	561,160,000	111,155,132	672,315,132
2035-2039	283,735,000	26,508,751	310,243,751
2040-2044	23,130,000	462,600	23,592,600
Add:			
Unamortized Premium	265,850,476	—	265,850,476
Total	$ 2,863,660,476	$ 898,020,391	$ 3,761,680,867

Hampton Roads Transportation Accountability Commission

Hampton Roads Transportation Accountability Commission Section bonds consists of Senior Lien Revenue Bonds, Series 2018A. The bonds were issued to pay for the costs of planning, design, and construction of transportation infrastructure in the localities comprising Planning District 23. The interest rates for this bond series ranges from 5.0 percent to 5.5 percent and the issue date was February 14, 2018. Current year interest requirements totaled $25.9 million. The following schedule details the annual funding requirements necessary to repay these bonds.

HAMPTON ROADS TRANSPORTATION ACCOUNTABILITY COMMISSION BONDS
Debt Service Requirements to Maturity

Maturity	*Principal*	*Interest*	*Total*
2020	$ —	$ 25,854,075	$ 25,854,075
2021	—	25,854,075	25,854,075
2022	—	25,854,075	25,854,075
2023	—	25,854,075	25,854,075
2024	—	25,854,075	25,854,075
2025-2029	20,460,000	127,798,375	148,258,375
2030-2034	31,885,000	121,122,375	153,007,375
2035-2039	40,695,000	112,312,625	153,007,625
2040-2044	51,935,000	101,069,875	153,004,875
2045-2049	75,680,000	86,721,625	162,401,625
2050-2054	139,135,000	60,871,125	200,006,125
2055-2059	140,210,000	19,794,500	160,004,500
Add:			
Unamortized Premium	80,311,238	—	80,311,238
Total	$ 580,311,238	$ 758,960,875	$ 1,339,272,113

Component Units

Higher Education Institution Bonds

Higher Education Institution Bonds are comprised of both 9(c) general obligation bonds and 9(d) revenue bonds. Section 9(d) bonds are from several sources as shown on the following schedule (dollars in thousands).

College and university bonds backed by pledge of general revenue or revenue from specific revenue-producing capital projects	$ 2,241,523
College and university debt backed exclusively by pledged revenues of an institution	603,133
Total Higher Education Institution 9(d) debt	$ 2,844,656

The interest rates for these bonds range from 1.3 percent to 6.2 percent and the issuance dates range from April 15, 2009, to June 5, 2019. The Virginia Commonwealth University Series 2012A and 2012B bonds and the Virginia Commonwealth University Health System Authority (a blended component unit of the Virginia Commonwealth University – nonmajor) Series 2013A and 2013B bonds are variable rate bonds and the rates are reset weekly by the remarketing agent.

The following schedules detail the annual funding requirements necessary to amortize Higher Education Institution 9(c) and 9(d) bonds. Pursuant to the American Recovery and Reinvestment Act, the Commonwealth expects to receive an interest subsidy to reimburse interest payments of $249.1 million for Build America Bonds (BABs) issued. The BABs are applicable to General Obligation Series 2010A Bonds, Series 2009F and 2010B 21st Century Virginia College Building Authority Education Facilities Bonds, and the University of Virginia's Series 2009 and 2010 General Revenue Bonds. The schedules include $177.1 million for Virginia Commonwealth University Health System Authority (blended component unit of Virginia Commonwealth University - nonmajor component unit) Direct Placement Bond Series and these bonds include event of default provisions that could change the timing of repayment of the outstanding amounts to become immediately due.

9(c) HIGHER EDUCATION INSTITUTION BONDS
Debt Service Requirements to Maturity

Maturity	Principal	Interest	Total
2020	$ 56,260,000	$ 34,588,076	$ 90,848,076
2021	58,580,000	32,088,308	90,668,308
2022	57,115,000	29,455,863	86,570,863
2023	57,958,743	26,844,902	84,803,645
2024	60,472,211	24,216,179	84,688,390
2025-2029	289,185,000	80,659,816	369,844,816
2030-2034	190,810,000	27,826,281	218,636,281
2035-2039	46,820,000	3,926,916	50,746,916
2040-2044	1,785,000	83,895	1,868,895
Add:			
Unamortized Premium	74,120,179	—	74,120,179
Total	$ 893,106,133	$ 259,690,236	$ 1,152,796,369

9(d) HIGHER EDUCATION INSTITUTION BONDS
Debt Service Requirements to Maturity

Maturity	Principal	Interest (1)	Total
2020	$ 25,120,983	$ 121,676,564	$ 146,797,547
2021	25,299,966	120,769,454	146,069,420
2022	131,400,178	117,236,545	248,636,723
2023	25,381,657	113,694,471	139,076,128
2024	61,144,439	111,977,712	173,122,151
2025-2029	155,509,207	538,935,879	694,445,086
2030-2034	172,952,019	507,694,484	680,646,503
2035-2039	378,111,454	461,953,029	840,064,483
2040-2044	868,420,000	285,983,908	1,154,403,908
2045-2049	558,615,000	126,071,819	684,686,819
2050-2054	—	62,685,000	62,685,000
2055-2059	—	62,685,000	62,685,000
2060-2064	—	62,685,000	62,685,000
2065-2069	—	62,685,000	62,685,000
2070-2074	—	62,685,000	62,685,000
2075-2079	—	62,685,000	62,685,000
2080-2084	—	62,685,000	62,685,000
2085-2089	—	62,685,000	62,685,000
2090-2094	—	62,685,000	62,685,000
2095-2099	—	62,685,000	62,685,000
2100-2104	—	62,685,000	62,685,000
2105-2109	—	62,685,000	62,685,000
2110-2114	—	62,685,000	62,685,000
2115-2119	300,000,000	43,879,500	343,879,500
Add:			
Unamortized Premium	142,701,568	—	142,701,568
Total	$ 2,844,656,471	$ 3,364,778,365	$ 6,209,434,836

Note (1): The future interest requirements exclude any net Payments associated with hedging derivative instruments. See Note 16 for more details on hedging derivative instruments.

9(d) VIRGINIA COLLEGE BUILDING AUTHORITY BONDS
Debt Service Requirements to Maturity

Maturity	Principal	Interest	Total
2020	$ 295,885,000	$ 171,194,091	$ 467,079,091
2021	300,510,000	164,918,740	465,428,740
2022	292,100,000	151,215,199	443,315,199
2023	288,270,000	137,896,169	426,166,169
2024	281,845,000	124,744,622	406,589,622
2025-2029	1,298,700,000	444,632,995	1,743,332,995
2030-2034	1,024,940,000	173,570,653	1,198,510,653
2035-2039	352,110,000	26,146,450	378,256,450
Add:			
Unamortized Premium	432,412,298	—	432,412,298
Total	$ 4,566,772,298	$ 1,394,318,919	$ 5,961,091,217

Various higher education institutions' foundations (component units) and a museum foundation (component unit) have bonds outstanding as of year-end. The purpose of a majority of these bonds is for construction, property acquisition, and defeasance of prior debt. The following schedule details the future principal payments.

FOUNDATIONS' BONDS (1)
Debt Service Requirements to Maturity

Maturity	Principal
2020	$ 141,655,117
2021	44,182,363
2022	34,280,273
2023	34,154,238
2024	39,538,830
Thereafter	788,538,363
Total	$ 1,082,349,184

Note (1): Foundations represent FASB reporting entities defined in Note 1.B.

Virginia Port Authority

The Virginia Port Authority (nonmajor) has issued Section 9(d) revenue bonds and notes pursuant to powers provided to its Board of Commissioners by the *Code of Virginia.* The interest rates for these bonds range from 1.6 percent to 5.0 percent, and the issuance dates range from January 25, 2012, to July 16, 2018. The following schedule details the annual funding requirements necessary to amortize these bonds.

9(d) VIRGINIA PORT AUTHORITY DEBT
Debt Service Requirements to Maturity

Maturity	Principal	Interest	Total
2020	$ 15,830,000	$ 20,266,105	$ 36,096,105
2021	16,065,000	19,821,606	35,886,606
2022	16,535,000	19,336,890	35,871,890
2023	17,040,000	18,813,511	35,853,511
2024	17,575,000	18,250,967	35,825,967
2025-2029	99,130,000	81,328,948	180,458,948
2030-2034	102,210,000	60,216,997	162,426,997
2035-2039	96,900,000	39,484,756	136,384,756
2040-2044	86,680,000	16,984,671	103,664,671
2045-2049	32,755,000	1,550,049	34,305,049
Add:			
Unamortized Premium	19,175,518	—	19,175,518
Total	$ 519,895,518	$ 296,054,500	$ 815,950,018

Virginia Housing Development Authority

The Virginia Housing Development Authority (major) issued Section 9(d) revenue bonds. The interest rates for these bonds range from 2.1 percent to 6.8 percent and the issuance dates range from December 17, 2002, to May 22, 2019. The following schedule details the annual funding requirements necessary to amortize these bonds. The schedule includes $244.1 million for rental housing bonds group Direct Placement Bonds. VHDA has an option to redeem various bonds pursuant the terms of each bond issue. The redemptions generally cannot be exercised without condition until the bonds have been outstanding for nine years or more.

9(d) VIRGINIA HOUSING DEVELOPMENT AUTHORITY BONDS
Debt Service Requirements to Maturity

Maturity	Principal	Interest	Total
2020	$ 112,475,484	$ 111,563,301	$ 224,038,785
2021	101,240,000	108,418,796	209,658,796
2022	111,890,000	105,748,683	217,638,683
2023	125,835,000	102,564,625	228,399,625
2024	91,770,000	99,227,430	190,997,430
2025-2029	397,470,000	455,024,319	852,494,319
2030-2034	452,464,906	379,351,717	831,816,623
2035-2039	531,384,894	280,650,186	812,035,080
2040-2044	941,659,820	136,130,058	1,077,789,878
2045-2049	125,405,000	20,280,623	145,685,623
2050-2054	51,450,000	4,677,290	56,127,290
Less: Unamortized Discount	(985,291)	—	(985,291)
Total	$ 3,042,059,813	$ 1,803,637,028	$ 4,845,696,841

Virginia Resources Authority

The Virginia Resources Authority (major) issued Section 9(d) revenue bonds. The interest rates for these bonds range from 0.2 percent to 6.3 percent and the issuance dates range from July 31, 2002, to November 13, 2018. The following schedule details the annual funding requirements necessary to amortize these bonds.

9(d) VIRGINIA RESOURCES AUTHORITY BONDS
Debt Service Requirements to Maturity

Maturity	Principal	Interest	Total
2020	$ 185,206,532	$ 137,949,579	$ 323,156,111
2021	192,033,620	129,474,156	321,507,776
2022	188,142,050	120,643,938	308,785,988
2023	188,659,860	111,689,131	300,348,991
2024	178,069,097	102,894,165	280,963,262
2025-2029	926,248,572	384,879,222	1,311,127,794
2030-2034	690,676,608	202,129,646	892,806,254
2035-2039	427,285,893	91,331,404	518,617,297
2040-2044	207,185,000	26,301,100	233,486,100
2045-2049	46,010,000	3,131,995	49,141,995
Less: Unaccreted Capital Appreciation Bonds	(25,144,581)	—	(25,144,581)
Add: Unamortized Premium	275,297,841	—	275,297,841
Total	$ 3,479,670,492	$ 1,310,424,336	$ 4,790,094,828

Virginia Public School Authority

The Virginia Public School Authority (major) issued Section 9(d) revenue bonds. The interest rates for these bonds range from 0.0 percent to 5.5 percent, and the issuance dates range from December 11, 2003, to May 21, 2019. The following schedule details the annual funding requirements necessary to amortize these bonds. Pursuant to the American Recovery and Reinvestment Act, the Commonwealth expects to receive an interest subsidy to reimburse interest payments of $132.0 million for Qualified School Construction Bonds (QSCBs) issued. The QSCBs are applicable to Series 2010-1, 2011-1, 2011-2, and 2012-1 Revenue Bonds. The schedule includes $6.2 million for Qualified Zone Academy Bonds (QZAB) Series 2014-1 and 2016 Direct Placement Bonds. VPSA's 2014-1 QZAB Bond Series shall bear interest at the default rate, payable on demand by the owner of the Bonds.

9(d) VIRGINIA PUBLIC SCHOOL AUTHORITY BONDS
Debt Service Requirements to Maturity

Maturity	Principal	Interest	Total
2020	$ 251,750,000	$ 135,872,627	$ 387,622,627
2021	243,230,000	126,519,042	369,749,042
2022	236,905,000	115,038,664	351,943,664
2023	225,285,000	103,779,659	329,064,659
2024	217,570,000	93,025,921	310,595,921
2025-2029	1,138,016,000	308,918,975	1,446,934,975
2030-2034	706,930,000	113,554,166	820,484,166
2035-2039	288,230,000	29,026,988	317,256,988
2040-2044	39,435,000	6,455,522	45,890,522
2045-2049	21,215,000	1,960,063	23,175,063
2050-2054	2,315,000	37,619	2,352,619
Add: Unamortized Premium	183,722,244	—	183,722,244
Total	$ 3,554,603,244	$ 1,034,189,246	$ 4,588,792,490

Hampton Roads Sanitation District Commission

The Hampton Roads Sanitation District Commission (nonmajor) issued bonds under a Master Trust Indenture and a Trust Agreement dated December 1, 1993 and March 1, 2008. The interest cost for these bonds range from 1.5 percent to 5.1 percent. The following schedule details the annual funding requirements necessary to amortize these bonds. The fiscal year 2020 principal amount includes $50.0 million for demand bonds, which are also classified as “due within one year” in the accompanying financial statements.

HAMPTON ROADS SANITATION DISTRICT COMMISSION
Debt Service Requirements to Maturity

Maturity	Principal	Interest	Total
2020	$ 84,951,000	$ 33,785,000	$ 118,736,000
2021	29,190,000	33,082,000	62,272,000
2022	31,076,000	32,633,000	63,709,000
2023	33,080,000	31,193,000	64,273,000
2024	34,126,000	29,854,000	63,980,000
2025-2029	182,089,000	126,466,000	308,555,000
2030-2034	190,664,000	85,189,000	275,853,000
2035-2039	160,453,000	42,064,000	202,517,000
2040-2044	71,162,000	13,792,000	84,954,000
2045-2049	14,941,000	1,948,000	16,889,000
Add: Unamortized Premium	59,897,000	—	59,897,000
Total	$ 891,629,000	$ 430,006,000	$ 1,321,635,000

Virginia Biotechnology Research Partnership Authority

The Virginia Biotechnology Research Partnership Authority (nonmajor) consists of Series 2009 Commonwealth of Virginia Lease Revenue bonds. Coupon interest rates range from 3.0 percent to 5.0 percent.

VIRGINIA BIOTECHNOLOGY RESEARCH PARTNERSHIP AUTHORITY
Debt Service Requirements to Maturity

Maturity	Principal	Interest	Total
2020	$ 4,200,000	$ 557,750	$ 4,757,750
2021	4,415,000	342,375	4,757,375
2022	4,640,000	116,000	4,756,000
Add: Unamortized Premium	965,019	—	965,019
Total	$ 14,220,019	$ 1,016,125	$ 15,236,144

Total principal outstanding as of June 30, 2019, on all component unit bonds amounted to $20.9 billion.

The following schedule summarizes the changes in long-term liabilities:

(Dollars in Thousands)

	Schedule of Changes in Long-term Debt and Obligations (1) (2)			
	Balance July 1, as restated (3)	Issuances and Other Increases	Retirements and Other Decreases	Subtotal June 30
Primary Government				
Governmental Activities:				
Long-term Debt Bearing the Pledge of the Full Faith and Credit of the Commonwealth:				
General Obligation Bonds - 9(b) and 9(c):				
Public Facilities Bonds	$ 403,860	$ —	$ (48,090)	$ 355,770
Parking Facilities Bonds	8,464	—	(985)	7,479
Transportation Facilities Bonds	8,060	—	(2,560)	5,500
Add: Unamortized Premium	56,144	—	(8,392)	47,752
Total General Obligation Bonds	476,528	—	(60,027)	416,501
Long-term Debt/Obligations Not Bearing the Pledge of the Full Faith and Credit of the Commonwealth:				
Transportation Facilities Bonds	3,551,290	355,075	(257,191)	3,649,174
Virginia Public Building Authority Bonds	2,418,000	336,950	(157,140)	2,597,810
Hampton Roads Transportation Accountability Commission	500,000	—	—	500,000
Economic Development Authority Obligations	27,115	—	(6,470)	20,645
Add: Unamortized Premium	778,419	82,766	(72,473)	788,712
Accretion on Capital Appreciation Bonds	31,002	2,791	(4,290)	29,503
Less: Unamortized Discount	(81)	5	—	(76)
Installment Purchase Obligations from Direct Borrowings	103,655	26,085	(14,809)	114,931
Compensated Absences	307,329	201,691	(191,480)	317,540
Capital Lease Obligations	36,742	765	(6,625)	30,882
Net Pension Liability*	4,082,682	—	(282,792)	3,799,890
Net OPEB Liability*	775,186	26,826	—	802,012
Total OPEB Liability*	735,108	—	(169,660)	565,448
Pollution Remediation Obligations	6,963	3,971	(504)	10,430
Other	30,948	—	(626)	30,322
Total Long-term Debt/Obligations Not Bearing the Pledge of the Full Faith and Credit of the Commonwealth	13,384,358	1,036,925	(1,164,060)	13,257,223
Total Governmental Activities	13,860,886	1,036,925	(1,224,087)	13,673,724
Business-type Activities:				
Long-term Debt/Obligations Not Bearing the Pledge of the Full Faith and Credit of the Commonwealth:				
Compensated Absences	10,546	3,577	(3,053)	11,070
Net Pension Liability*	135,629	—	(7,624)	128,005
Net OPEB Liability*	21,680	619	—	22,299
Total OPEB Liability*	25,434	—	(5,392)	20,042
Installment Purchase Obligations from Direct Borrowings	—	570	(52)	518
Lottery Prizes Payable	116,484	2,144	(5,645)	112,983
Tuition Benefits Payable	2,135,222	32,089	(175,842)	1,991,469
Total Business-type Activities	2,444,995	38,999	(197,608)	2,286,386
Total Primary Government	$ 16,305,881	$ 1,075,924	$ (1,421,695)	$ 15,960,110

*Net increase/decrease is shown.

Foundations (4)	Balance June 30	Due Within One Year
$ —	$ 355,770	$ 48,140
—	7,479	785
—	5,500	2,685
—	47,752	—
—	416,501	51,610
—	3,649,174	199,728
—	2,597,810	164,670
—	500,000	—
—	20,645	6,795
—	788,712	—
—	29,503	—
—	(76)	—
—	114,931	15,125
—	317,540	196,445
—	30,882	6,140
—	3,799,890	—
—	802,012	6,177
—	565,448	23,248
—	10,430	1,879
—	30,322	6,456
—	13,257,223	626,663
—	13,673,724	678,273
—	11,070	8,427
—	128,005	—
—	22,299	63
—	20,042	825
—	518	109
—	112,983	10,691
—	1,991,469	283,077
—	2,286,386	303,192
$ —	$ 15,960,110	$ 981,465

Continued on next page

(Dollars in Thousands)

Schedule of Changes in Long-term Debt and Obligations (1) (2)
(Continued)

	Balance July 1, as restated (3)	Issuances and Other Increases	Retirements and Other Decreases	Subtotal June 30
Component Units				
Long-term Debt Bearing the Pledge of the Full Faith and Credit of the Commonwealth:				
General Obligation Bonds - Higher Education 9(c) (5)	$ 836,874	$ 118,210	$ (61,978)	$ 893,106
Long-term Debt/Obligations Not Bearing the Pledge of the Full Faith and Credit of the Commonwealth:				
Bonds (5)	18,620,642	1,613,549	(1,748,016)	18,486,175
Bonds from Direct Placements (5)	436,796	—	(9,465)	427,331
Installment Purchase Obligations from Direct Borrowings	63,050	3,333	(11,124)	55,259
Capital Lease Obligations	2,295,765	20,902	(3,668)	2,312,999
Notes Payable	1,927,700	283,322	(199,040)	2,011,982
Notes Payable from Direct Borrowings	106,856	75,000	(3,950)	177,906
Compensated Absences	323,953	358,662	(333,369)	349,246
Net Pension Liability*	2,688,728	—	(197,864)	2,490,864
Net OPEB Liability*	783,799	15,231	—	799,030
Total OPEB Liability*	639,434	—	(160,050)	479,384
Trust and Annuity Obligations	62,979	2,674	(537)	65,116
Other	271,495	68,206	(67,329)	272,372
Total Component Units	$ 29,058,071	$ 2,559,089	$ (2,796,390)	$ 28,820,770

*Net increase/decrease is shown.

Note (1) Pursuant to GASB Statement No. 34, governmental activities include internal service funds. Business-type activities are considered enterprise funds.

Note (2) Payments on bonded debt that pertain to the Commonwealth's governmental activities are made through the debt service funds. Payments for installment purchases, compensated absences, capital leases, pension, and other obligations that pertain to the Commonwealth's governmental activities are made through the general and all special revenue funds, excluding the Literary Fund (major). Internal service funds predominantly serve the governmental funds. Accordingly, long-term liabilities for these funds are included as part of the total for governmental activities. Enterprise funds, or business-type activities, are self-supporting funds. Accordingly, long-term liabilities are paid from each respective fund.

Note (3) Component Unit Bonds and Notes Payable have been restated by $84,036 (dollars in thousands) for a reclassification for the Virginia Resources Authority (major). Other Liabilities has been restated by $33,652 (dollars in thousands) to reclassify escrow funds held by the Virginia Housing Development Authority (major) from long-term liabilities to other liabilities. Other Liabilities and Notes Payable have been restated by $2,158 (dollars in thousands) for a reclassification from Other Liabilities to Notes Payable for a nonmajor component unit.

Note (4) Foundations represent FASB reporting entities defined in Note 1.B.

Note (5) Amounts are net of any unamortized discounts and premiums.

Foundations (4)	Balance June 30	Due Within One Year
$ —	$ 893,106	$ 56,260
1,082,349	19,568,524	1,107,214
—	427,331	9,860
—	55,259	8,136
472	2,313,471	4,283
269,662	2,281,644	217,933
—	177,906	9,716
16,708	365,954	277,038
—	2,490,864	—
—	799,030	330
—	479,384	17,273
73,198	138,314	1,908
270,007	542,379	24,704
$ 1,712,396	$ 30,533,166	$ 1,734,655

Bond and Note Defeasance

GASB Statement No. 7, *Advance Refundings Resulting in Defeasance of Debt*, provides that refunded debt and assets placed in escrow for the payment of related debt service be excluded from the financial statements. As of June 30, 2019, there were $1.3 billion in bonds from the primary government that have been refunded and defeased in-substance from the governmental activities column by placing existing assets and the proceeds of new bonds in irrevocable trusts to provide for all future debt service payments. In addition, there were $2.2 billion in bonds and notes outstanding considered defeased from the component units.

Primary Government

In May 2019, the Commonwealth Transportation Board of the Commonwealth of Virginia issued $43.4 million in Commonwealth of Virginia Transportation Revenue Refunding Bonds Series 2019A with an interest rate ranging from 3.0 to 5.0 percent to advance refund the outstanding Commonwealth of Virginia Transportation Revenue Bonds Series 2009A-2 (Northern Virginia Transportation District Program - Taxable - Build America Bonds). The net proceeds from the sale of the Refunding Bonds and unspent funds of $49.5 million (after payment of underwriter's fees and other issuance costs) were deposited to an irrevocable trust with an escrow agent to provide future debt service payments on the Refunded Bonds and to pay the costs related to issuance and refunding. As a result, the Refunded Bonds are considered to be defeased and the liability has been removed from the governmental activities column of the Statement of Net Position. The reacquisition price exceeded the net carrying value of the old debt by $150,486. The Northern Virginia Transportation District debt defeasance resulted in an accounting gain of $150,486. Total debt service payments will be reduced by $6.0 million over the next 15 years, resulting in an economic gain of $5.1 million, discounted at the rate of 2.2 percent.

Component Units

For fiscal year 2019, the Virginia Public School Authority (VPSA) (major) issued $169.7 million of Series 2019B refunding bonds. The net proceeds have been placed with an escrow agent to provide for all future debt service on the defeased bonds. This debt defeasance resulted in an accounting loss of $801,800. Total debt service payments over the next 10 years will be reduced by $15.5 million. Present value savings of $13.8 million reflect the True Interest Cost of each component of the refunding at the discount rate.

In October 2018, Virginia Commonwealth University (nonmajor) issued $50.7 million of Series 2018A to refund the Series 2012A and Series 2012B General Revenue Pledge Refunding Bonds, and the University's taxable note related to its line of credit. For information regarding this refunding, see the University's separately issued financial statements.

Arbitrage Rebate

The Tax Reform Act of 1986 requires that governmental entities issuing tax-exempt debt calculate and rebate arbitrage earnings to the Federal government. The U.S. Treasury has issued regulations on calculating the rebate amount and complying with the provisions of the Tax Reform Act of 1986. Governmental issuers must comply with the rebate regulations in order for their bonds to maintain tax-exempt status. The regulations require earnings on investments purchased with bond proceeds in excess of the amount that would have been earned if the proceeds were invested at a rate equal to the bond yield, be subject to rebate to the Federal government. Income earned on excess earnings is also subject to rebate. Rebate liability, if any, must be paid every five years over the life of the bonds. Governmental issuers may at the time of issuance elect to pay a penalty in lieu of rebate. Bonds may be exempt from the rebate requirements if they qualify for certain exceptions under the regulations. If the issuer meets one of the exceptions, the issuer retains any arbitrage earnings. Rebate and penalty payments are calculated and paid as required by law on bond issues that do not qualify for an exception.

Rebate liability on bonds of the VPSA (major component unit) issued under its Pooled Bond Programs is payable from earnings on related bond funds and from local issuers whose local school bonds were purchased by the VPSA. During fiscal year 2019, no rebate payments were owed on VPSA bonds issued under its Pooled Bonds Programs. Rebate liability on notes of the VPSA issued under its School Technology and Security Notes Program is payable from earnings on related note funds and funds of the Commonwealth. During fiscal year 2019, a final arbitrage rebate calculation for VPSA's School Technology and Security Notes, Series II identified a yield reduction payment of $66,025 due to the Federal government in fiscal year 2019. The liability was paid in fiscal year 2019 by the Virginia Department of Education.

Rebatable arbitrage need only be calculated for tax purposes every fifth year that debt is outstanding. Consistent with modified accrual basis of accounting, it is not recognized as a liability in governmental funds until amounts actually become due and payable; however, a liability is recognized in accrual basis government-wide statements as soon as the underlying event has occurred. Accordingly, as of June 30, 2019, the Virginia Resources Authority (major component unit) has recognized a liability of $247,785.

Amounts remitted to the Federal government for rebate liability are generally paid from earnings derived from the issue. However, if all proceeds have been expended and depending on the type of issue, it may be necessary to use project revenues or general or non-general fund appropriations to satisfy any rebate liability. During fiscal year 2019, no rebate payments were owed on the Commonwealth's General Obligation Bonds, Virginia Public Building Authority, Commonwealth Transportation Board, the Virginia College Building Authority 21st Century or Pooled Bond Programs, or the Virginia Port Authority.

Capital Leases

The Commonwealth leases buildings and equipment under various agreements that are accounted for as capital leases. The lease agreements are for various terms and all leases contain nonappropriation clauses indicating that continuation of the lease is subject to funding by the General Assembly.

Gross minimum lease payments, together with the present value of the net minimum lease payments as of June 30, 2019, are shown in the following table (dollars in thousands).

	Governmental Activities	Business-Type Activities	Component Units (1)
2020	$ 8,413	$ —	$ 94,923
2021	8,022	—	95,419
2022	7,889	—	97,232
2023	2,634	—	99,083
2024	2,617	—	95,394
2025-2029	9,931	—	529,232
2030-2034	2,624	—	567,257
2035-2039	2,291	—	600,742
2040-2044	1,372	—	648,503
2045-2049	—	—	698,662
2050-2054	—	—	754,824
2055-2059	—	—	817,174
2060-2064	—	—	884,673
2065-2069	—	—	311,626
Total Gross Minimum Lease Payments	45,793	—	6,294,744
Less: Amount Representing Executory Costs	(5,296)	—	—
Net Minimum Lease Payments	40,497	—	6,294,744
Less: Amount Representing Interest	(9,615)	—	(3,981,745)
Present Value of Net Minimum Lease Payments	$ 30,882	$ —	$ 2,312,999

Note (1): The above amounts exclude capital lease obligations of foundations.

	Foundations (2)
2020	$ 201
2021	190
2022	77
2023	19
Net Minimum Lease Payments	487
Less: Amount Representing Interest	(15)
Present Value of Net Minimum Lease Payments	$ 472

Note (2): Foundations represent FASB reporting entities defined in Note 1.B.

As of June 30, 2019, assets purchased under capital leases were included in depreciable capital assets as follows (dollars in thousands). The amounts are net of accumulated depreciation where applicable. For a portion of these assets, ownership will pass to the Commonwealth at the end of the lease term.

	Buildings	Equipment	Infrastructure	Total
Governmental Activities:				
Gross Capital Assets	$ 160,915	$ 3,971	$ —	$ 164,886
Less: Accumulated Depreciation	(76,396)	(2,234)	—	(78,630)
Total Governmental Activities	$ 84,519	$ 1,737	$ —	$ 86,256
Business-Type Activities:				
Gross Capital Assets	$ —	$ —	$ —	$ —
Less: Accumulated Depreciation	—	—	—	—
Total Business-Type Activities	$ —	$ —	$ —	$ —
Component Units:				
Gross Capital Assets	$ 130,052	$ 120,086	$ 2,096,687	$ 2,346,825
Less: Accumulated Depreciation	(54,640)	(23,983)	(71,239)	(149,862)
Subtotal (excluding Foundations)	75,412	96,103	2,025,448	2,196,963
Foundations:	—	773	—	773
Gross Capital Assets Less: Accumulated Depreciation	—	(253)	—	(253)
Subtotal Foundations	—	520	—	520
Total Component Units (3)	$ 75,412	$ 96,623	$ 2,025,448	$ 2,197,483

Note (3): In addition to the above, land purchased under capital leases by the University of Virginia (nonmajor) is $8,095 (dollars in thousands).

Notes Payable

Notes Payable consist of several items as shown in the following schedule (dollars in thousands):

Primary Government		
Installment Notes from Direct Borrowings	$	115,449
Total Primary Government		115,449
Component Units		
Virginia Public School Authority		189,935
Virginia Resources Authority from Direct Borrowings		84,036
Nonmajor Component Units		1,822,047
Nonmajor Component Units from Direct Borrowings		93,870
Installment Notes from Direct Borrowings		55,259
Subtotal (excluding Foundations)		2,245,147
Foundations:		
Notes Payable		269,662
Subtotal - Foundations		269,662
Total Component Units		2,514,809
Total Notes Payable	$	2,630,258

The Virginia Public School Authority (major component unit) notes of $189.9 million are for the School Technology and Security Notes Program. The note proceeds were used to finance technology equipment purchases and to make grants to school divisions for the purchase of security equipment. The notes will be repaid from appropriations to be made by the Virginia General Assembly from the Literary Fund (major special revenue).

The Virginia Resources Authority (major component unit) direct borrowing note of $84.0 million is for the Series 2019 Clean Water State Match and contains a provision that in the event of default, the annual interest rate increases to the higher of the Prime Rate plus 4.0 percent, the Federal Funds Rate plus 5.0 percent or 10.0 percent.

An additional amount of $1.8 billion is comprised primarily of higher education institutions' (nonmajor component units) promissory notes with the Virginia College Building Authority (VCBA) (major component unit) to finance the construction of various higher education facilities pursuant to the Pooled Bond Program. Interest rates range from 2.0 percent to 5.6 percent and shall be paid semi-annually and the planned interest payments total $567.7 million. Additionally, in accordance with the American Recovery and Reinvestment Act, the Commonwealth expects to receive a Build America Bonds (BABs) interest subsidy to reimburse interest payments of $23.5 million. The final principal payment is due in fiscal year 2049.

The following higher education institutions (nonmajor component units) reported notes payables primarily for construction: Virginia Commonwealth University Health System Authority (Authority) (a blended component unit of the Virginia Commonwealth University – nonmajor component unit) $91.3 million; and Virginia State University $476,991.

Various foundations (component units) have notes outstanding as of year-end. The purpose of a majority of these notes is for property acquisition, working capital, and construction. Future principal payments as of June 30, 2019, are shown in the following table (dollars in thousands).

Foundations' Notes Payable (Component Units) (1)

Maturity		Principal
2020	$	30,833
2021		12,617
2022		13,701
2023		25,613
2024		10,800
Thereafter		176,098
Total	$	269,662

Note (1): Foundations represent FASB reporting entities defined in Note 1.B.

Installment purchase obligations have been entered into by agencies and institutions of the Commonwealth. These agreements, other than those in the component units and certain institutions of higher education, contain nonappropriation clauses indicating that continuation of the installment purchase obligations is subject to funding by the General Assembly. Installment purchase obligations represent $170.7 million of the total outstanding debt of the Commonwealth. Presented in the following tables are repayment schedules for installment purchase obligations as of June 30, 2019.

Installment Purchase Obligations from Direct Borrowings
Governmental Funds
June 30, 2019

Maturity		Principal		Interest		Total
2020	$	15,124,782	$	2,756,841	$	17,881,623
2021		16,718,377		2,533,763		19,252,140
2022		16,110,103		2,106,259		18,216,362
2023		13,840,521		1,696,224		15,536,745
2024		11,876,688		1,360,851		13,237,539
2025-2029		31,257,392		3,124,357		34,381,749
2030-2034		9,979,751		714,934		10,694,685
2035-2039		23,490		264		23,754
Total	$	114,931,104	$	14,293,493	$	129,224,597

Installment Purchase Obligations from Direct Borrowings
Business-type Activities
June 30, 2019

Maturity		Principal		Interest		Total
2020	$	108,865	$	15,725	$	124,590
2021		112,377		12,213		124,590
2022		116,003		8,587		124,590
2023		119,746		4,845		124,591
2024		61,313		981		62,294
Total	$	518,304	$	42,351	$	560,655

Installment Purchase Obligations from Direct Borrowings
Component Units
June 30, 2019

Maturity	Principal	Interest	Total
2020	$ 8,136,270	$ 1,268,624	$ 9,404,894
2021	10,723,610	1,100,713	11,824,323
2022	5,892,734	931,861	6,824,595
2023	5,032,523	804,611	5,837,134
2024	4,593,390	685,540	5,278,930
2025-2029	14,100,794	1,999,518	16,100,312
2030-2034	6,780,000	447,699	7,227,699
Total	$ 55,259,321	$ 7,238,566	$ 62,497,887

The foundations (component units) had no installment purchase obligations as of June 30, 2019.

On May 23, 2016, the Virginia Department of Transportation (VDOT) (primary government) and Chesterfield County (County) signed a memorandum of understanding concerning payment of interest relating to the County's contribution to VDOT for the construction of the Powhite Parkway Extension Project. The parties agreed that the interest to be paid by VDOT on the County's contribution to the construction of the Powhite Parkway Extension is $18.5 million. The interest requirement paid during fiscal year 2019 totaled $1.4 million. The remaining outstanding interest amount of $4.8 million is payable in annual installments on September 1 in the years 2019 to 2022. This interest is applicable to a note payable that VDOT repaid to the County in fiscal year 2014.

Lottery Prizes Payable

Lottery prizes are paid in 20, 25, 26, or 30 installments. The first installment is paid on the day the prize is claimed. The subsequent annual payments are funded with U.S. Treasury STRIPS purchased by the Virginia Lottery. For Life prizes payable represent estimated prizes payable monthly, quarterly or annually for the life of the winner based on life expectancy tables from the Virginia Bureau of Insurance, and funded with a pool of U.S. Treasury STRIPS.

Lottery prizes payable represent the future annual prize payments valued at cost plus accrued interest (current value of securities held to maturity) of the assets funding the payments.

Lottery prizes payable for the fiscal year ended June 30, 2019, are shown in the following table:

	Jackpot	Win For Life	Total
Due within one year	$ 5,651,248	$ 5,039,615	$ 10,690,863
Due in subsequent years	42,071,002	60,220,748	102,291,750
Total (current value)	47,722,250	65,260,363	112,982,613
Add: Interest to Maturity	15,295,750	27,954,637	43,250,387
Lottery Prizes Payable at Maturity	$ 63,018,000	$ 93,215,000	$ 156,233,000

Tuition Benefits Payable

The Virginia College Savings Plan administers the Prepaid529 program. Prepaid529 offers contracts at actuarially determined amounts that provide for future tuition and mandatory fee payments at state higher education institutions. The contract provisions also allow the benefits to be used for private or out-of-state institutions at differing amounts.

As of June 30, 2019, tuition benefits payable of $2.0 billion have been recorded for the Prepaid529 program on the statement of net position for the actuarially determined present value of future obligations anticipated for payment of benefits and administrative expenses for the Prepaid529 program. In addition, a receivable in the amount of $209.7 million has been recorded to reflect the actuarially determined present value of future payments anticipated from contract holders.

29. OTHER REVENUE

The following table (dollars in thousands) summarizes Other Revenue for the fiscal year ended June 30, 2019.

	Assessments and Receipts for Support of Special Services	Fines, Forfeitures, Court Fees, Penalties, and Escheats	Receipts from Cities, Counties, and Towns	Private Gifts, Grants, and Contracts	Sales of Property
Primary Government:					
General	$ 5,803	$ 223,737	$ 11,763	$ 965	$ 24,990
Major Special Revenue Funds:					
Commonwealth Transportation	20,167	23,874	332,960	12,837	746
Federal Trust	—	323	—	—	—
Literary	—	47,409	—	—	—
Nonmajor Governmental Funds	125,513	66,590	74,455	7,763	7,506
Major Enterprise Funds:					
Unemployment Compensation	—	193	—	—	—
Nonmajor Enterprise Funds	—	15,610	—	—	—
Private Purpose Trust Funds	—	—	—	—	—
Pension and Other Employee Benefit Trust Funds	—	—	—	—	—
Total Primary Government	$ 151,483	$ 377,736	$ 419,178	$ 21,565	$ 33,242

	Tobacco Master Settlement	Taxes	Other (1)	Total Other Revenue
Primary Government:				
General	$ 56,487	$ —	$ 62,457	$ 386,202
Major Special Revenue Funds:				
Commonwealth Transportation	—	—	151,595	542,179
Federal Trust	—	—	4,702	5,025
Literary	—	—	10	47,419
Nonmajor Governmental Funds	—	—	302,957	584,784
Major Enterprise Funds:				
Unemployment Compensation	—	—	—	193
Nonmajor Enterprise Funds	—	4,880	1,501	21,991
Private Purpose Trust Funds	—	—	173	173
Pension and Other Employee Benefit Trust Funds	—	—	4,107	4,107
Total Primary Government	$ 56,487	$ 4,880	$ 527,502	$ 1,592,073

Note (1): $36,900 (dollars in thousands) and $103,750 (dollars in thousands) are related to prior year expenditures refunded in the current fiscal year for the General Fund and the Commonwealth Transportation Fund, respectively. The total amount recorded for the Literary Fund is related to unclaimed prizes in the Virginia Lottery. $157,273 (dollars in thousands) is related to proceeds from unclaimed property in the Unclaimed Property Fund, $53,773 (dollars in thousands) is related to indirect costs, charge card rebate fees and court collection fees in the Other Special Revenue Fund, $26,642 (dollars in thousands) is related to welfare activity receipts in the Health and Social Services Special Revenue Fund, and the remaining $65,269 (dollars in thousands) is related to other miscellaneous activities in the nonmajor governmental funds.

30. TAX ABATEMENTS

GASB Statement No. 77, *Tax Abatements*, requires disclosures to be made for tax abatements. These arise from agreements between the Commonwealth and taxpayers and result in reduced tax revenue when the taxpayer promises to provide economic benefits to the Commonwealth. As of June 30, 2019, the Commonwealth participates in the following tax abatements programs in excess of $1.0 million. There are no provisions for recapturing abated taxes since the requirements must be met prior to receiving the abatement.

- The Retail Sales and Use Tax Data Center Exemptions are intended to attract data centers to the Commonwealth pursuant to Title 58.1-609.3(18) of the *Code of Virginia*. Qualifying entities may purchase or lease certain computer equipment, enabling software and other enabling hardware for use in the data center exempt from the retail sales and use tax. Each recipient's retail sales and use taxes are reduced by being able to purchase qualifying items for use in the data center without having to pay the retail sales and use tax on the purchase price. The amount of the abatement for each recipient is determined by multiplying the purchase price of the qualifying computer equipment, enabling software and other enabling hardware purchased by the recipient by the rate of the retail sales and use tax that would be imposed on the purchase if the exemption was not available. The rate of the retail sales and use tax is 6.0 percent in the Northern Virginia and Hampton Roads localities and 5.3 percent in the remainder of the state. The exemption is available for data centers that (i) are located in a Virginia locality; (ii) result in a new capital investment of at least $150.0 million on or after January 1, 2009; and (iii) meet specified employment and salary requirements. On or after July 1, 2009, the data center or tenants must result in the creation of at least 50 new jobs paying at least one and one-half the prevailing average wage in the locality, or 25 new jobs paying at least one and one-half the prevailing average wage in the locality if the data center is located in a locality that has an unemployment rate for the preceding year of at least 150.0 percent of the average statewide unemployment rate or is located in an enterprise zone. Effective July 1, 2012, the exemption was extended to purchases and leases made by tenants of a data center that meets the requirements of the data center exemption.

  In order to qualify for the exemption, the data center operator must enter into a memorandum of understanding with the Virginia Economic Development Partnership Authority (component unit). The exemption is scheduled to sunset June 30, 2035. The amount of abated taxes for fiscal year 2019 is $92.2 million.

- The Motion Picture Production Tax Credit is intended to encourage the filming of motion picture productions in the Commonwealth. Pursuant to Section 58.1-439.12:03 of the *Code of Virginia*, a motion picture production company with qualifying expenses of at least $250,000 may abate its individual income tax or corporate income tax liability by the amount of the Motion Picture Production Tax Credit. The amount of the tax credit is equal to (i) 15.0 percent of the production company's qualifying expenses or (ii) 20.0 percent of such expenses if the production is filmed in an economically distressed area of the Commonwealth. In addition to the credit for the qualifying expenses incurred by a motion picture production company, such company may receive an Additional Virginia Resident Credit and an Additional Virginia Resident First-Time Industry Employee Credit. The Additional Virginia Resident Credit equals (i) 10.0 percent of the total aggregate payroll for Virginia residents employed in connection with the production of a film in Virginia when total production costs in Virginia are at least $250,000, but not more than $1.0 million or (ii) 20.0 percent of the total aggregate payroll of such residents when total production costs in Virginia exceed $1.0 million. The Additional Virginia Resident First-Time Industry Employee Credit is equal to 10.0 percent of the total aggregate payroll for Virginia residents employed for the first time as actors or members of a production crew in connection with the production of a film in Virginia.

  The Motion Picture Production Tax Credit is a refundable tax credit. Therefore, if the amount of credit that a company is allowed to claim exceeds the company's tax liability for the taxable year, the excess amount of credit will be refunded to the company. Companies must have a memorandum of understanding with the Virginia Film Office (part of primary government) in order to participate in this program.

  The credit is scheduled to sunset January 1, 2022. The annual cap on the amount of credits granted during a fiscal year is $6.5 million, and this amount is expected to be claimed annually. While a motion picture production company may receive approval within a given year, the credits are not claimed by the taxpayer until filing a return. As a result, the credits claimed in a fiscal year may fluctuate compared to the $6.5 million annual cap. For fiscal year 2019, no taxes were abated, however, it is anticipated that abatements will resume in fiscal year 2020.

31. PRIZES AND CLAIMS

The following table summarizes Prizes and Claims Expense for the fiscal year ended June 30, 2019.

(Dollars in Thousands)

	Insurance Claims	Lottery Prize Expense	Total Prizes and Claims
Proprietary Funds:			
Major Enterprise Funds:			
Virginia Lottery	$ —	$ 1,399,749	$ 1,399,749
Unemployment Compensation	273,566	—	273,566
Nonmajor Enterprise Funds	476,936	—	476,936
Total Enterprise Funds	$ 750,502	$ 1,399,749	$ 2,150,251
Internal Service Funds	$ 1,472,386	$ —	$ 1,472,386

32. OTHER EXPENSES

The following table summarizes Other Expenses for the fiscal year ended June 30, 2019.

(Dollars in Thousands)

	Grants and Distributions To Localities	Expendable Equipment/ Improvements	Other (1)	Total Other Expenses
Proprietary Funds:				
Major Enterprise Funds:				
Virginia College Savings Plan	$ —	$ 671	$ 2,185	$ 2,856
Nonmajor Enterprise Funds	94	2,932	379	3,405
Total Enterprise Funds	$ 94	$ 3,603	$ 2,564	$ 6,261
Internal Service Funds	$ 1,886	$ 2,452	$ 6,497	$ 10,835
Pension and Other Employee Benefit Trust Funds (2)	$ —	$ —	$ 11,522	$ 11,522

Note (1): $2,185 (dollars in thousands) can be attributed to the Prepaid529 Program for the SOAR scholarship program and other promotional scholarships. $5,899 (dollars in thousands) can be attributed to expenses related to cyber insurance in the Risk Management internal service fund and $435,739 can be attributed to Affordable Care Act related fees in the Health Care Fund internal service fund.

Note (2): Fiduciary expenses of $11,522 (dollars in thousands) are not included in the Government-wide Statement of Activities.

33. OTHER NON-OPERATING REVENUE/EXPENSES

The following table summarizes Other Non-Operating Revenue/Expenses for the fiscal year ended June 30, 2019.

(Dollars in Thousands)

	Gain/(Loss) on Sale of Capital Assets	Securities Lending	Interest Expense	Other (1)	Total Other Non-Operating Revenue/ (Expenses)
Proprietary Funds:					
Major Enterprise Funds:					
Virginia Lottery	$ 33	$ (332)	$ —	$ 381	$ 82
Virginia College Savings Plan	(26)	(8)	—	—	(34)
Nonmajor Enterprise Funds	—	(489)	(11)	9,191	8,691
Total Enterprise Funds	$ 7	$ (829)	$ (11)	$ 9,572	$ 8,739
Internal Service Funds	$ 1,259	$ (1,529)	$ (1,327)	$ 74	$ (1,523)

Note (1): Other Non-Operating Revenue/Expenses of the nonmajor enterprise funds are primarily comprised of amounts reported by Alcoholic Beverage Control.

34. TRANSFERS

The following table summarizes Transfers In and Transfers Out for the fiscal year ended June 30, 2019 (dollars in thousands).

	Transfers In (Reported In):							
Transfers Out (Reported In):	General	Commonwealth Transportation	Federal Trust	Literary	Nonmajor Governmental Funds	Nonmajor Enterprise Funds	Internal Service Funds	Total Primary Government
Primary Government								
General	$ —	$ 7,616	$ 8	$ —	$ 407,203	$ —	$ —	$ 414,827
Major Special Revenue Funds:								
Commonwealth Transportation	31,738	—	2	—	427,812	—	388	459,940
Federal Trust	500	8,120	—	—	1,281	121	—	10,022
Nonmajor Governmental Funds	62,112	377	199	130,000	28,861	—	—	221,549
Major Enterprise Funds:								
Virginia Lottery	649,704	—	—	1,955	—	—	—	651,659
Virginia College Savings Plan	381	—	—	—	—	—	—	381
Unemployment Compensation	—	—	1,480	—	—	—	—	1,480
Nonmajor Enterprise Funds	206,416	—	—	—	15,581	—	—	221,997
Internal Service Funds	878	—	—	—	6,752	—	—	7,630
Total Primary Government	$ 951,729	$ 16,113	$ 1,689	$ 131,955	$ 887,490	$ 121	$ 388	$ 1,989,485

Transfers are used to (1) move revenues from the fund that the *Code of Virginia* or budget requires to collect them to the fund that the *Code of Virginia* or budget requires to expend them; (2) move receipts restricted for debt service from the funds holding the resources to the debt service fund as principal and interest payments become due; and (3) move unrestricted revenues collected in the General Fund to finance various programs accounted for in other funds in accordance with budgetary authorizations.

During the fiscal year, the following significant transfers were made that do not occur on a routine basis or are inconsistent with the activities of the fund making the transfer.

Various nongeneral funds transferred approximately $18.2 million to the General Fund as required by Chapter 854, 2019 Virginia Acts of Assembly.

35. ENDOWMENTS

Donor restricted endowments reside primarily within the higher education institutions. The net appreciation available for expenditure is $1.5 billion as of June 30, 2019. Of this amount, $1.9 million is reported as unrestricted net position and the remainder is reported as restricted net position. The *Code of Virginia* authorizes acceptance of donations. The governing boards of these entities and the donor agreements determine whether net appreciation can be spent and the accepted spending rate. These policies are entity specific and vary with each institution.

36. CASH FLOWS – ADDITIONAL DETAILED INFORMATION

The following table (dollars in thousands) summarizes specific cash flows for the fiscal year ended June 30, 2019.

	Virginia Lottery	Virginia College Savings Plan	Unemployment Compensation	Nonmajor Enterprise Funds	Total Enterprise Funds	Internal Service Funds
Cash Flows Resulting from:						
Payments for Prizes, Claims, and Loss Control:						
Lottery Prizes	$ (1,418,938)	$ —	$ —	$ —	$ (1,418,938)	$ —
Claims and Loss Control	—	—	(282,473)	(471,856)	(754,329)	(1,513,333)
Total	$ (1,418,938)	$ —	$ (282,473)	$ (471,856)	$ (2,173,267)	$ (1,513,333)
Other Operating Revenue:						
Other Operating Revenue	$ —	$ —	$ 152	$ 5,206	$ 5,358	$ —
Total	$ —	$ —	$ 152	$ 5,206	$ 5,358	$ —
Other Operating Expense:						
Other Operating Expenses (1)	$ —	$ (2,185)	$ —	$ (2,265)	$ (4,450)	$ (10,011)
Total	$ —	$ (2,185)	$ —	$ (2,265)	$ (4,450)	$ (10,011)
Other Noncapital Financing Receipt Activities:						
Advances/Contributions from the Commonwealth	$ —	$ —	$ —	$ 44,995	$ 44,995	$ 155,780
Receipts from Taxes	—	—	—	261,457	261,457	—
Other Noncapital Financing Receipt Activities	399	—	5	75	479	163
Total	$ 399	$ —	$ 5	$ 306,527	$ 306,931	$ 155,943
Other Noncapital Financing Disbursement Activities:						
Repayments of Advances/Contributions from the Commonwealth	$ —	$ —	$ —	$ (40,452)	$ (40,452)	$ (97,378)
Other Noncapital Financing Disbursement Activities	—	—	—	(17)	(17)	(823)
Total	$ —	$ —	$ —	$ (40,469)	$ (40,469)	$ (98,201)

Note (1): $2,185 (dollars in thousands) can be attributed to SOAR scholarship expenses and other scholarships and awards. Also, $5,899 (dollars in thousands) can be attributed to expenses related to cyber insurance in the Risk Management internal service fund and $435,739 can be attributed to Affordable Care Act related fees in the Health Care Fund internal service fund.

37. TOBACCO SETTLEMENT AND SECURITIZATION

On November 23, 1998, 46 states' Attorneys General and the major tobacco companies signed a proposed settlement that reimburses states for smoking-related medical expenses paid through Medicaid and other healthcare programs. At the time of the settlement, it was estimated that the Commonwealth could receive approximately $4.1 billion over the duration of the settlement. The settlement was approved in a Consent Decree in December 1998. On March 29, 1999, the General Assembly enacted a law approving the establishment of the Tobacco Region Revitalization Commission (nonmajor component unit), in compliance with the Consent Decree, to help communities in Virginia hurt by the decline of tobacco.

The Commission was established for the purposes of determining the appropriate recipients of monies in the Tobacco Indemnification and Community Revitalization Fund. The monies are to be used to provide payments to tobacco farmers as compensation for the tobacco equipment and barns and lost tobacco production opportunities associated with a decline in quota. The monies are also to be used to revitalize tobacco dependent communities.

The General Assembly also created the Virginia Foundation for Healthy Youth (Foundation) (nonmajor component unit). The purpose of the Foundation is to determine the appropriate recipients of monies in the Virginia Tobacco Settlement Fund. The Foundation will also be responsible for distributing monies for the purposes provided in the legislation. Disbursements can be made to assist in financing efforts to restrict the use of tobacco products by minors, through educational and awareness programs describing the health effects of tobacco use on minors, and laws restricting the distribution of tobacco products to minors.

Additionally, the General Assembly created two special non-reverting funds. The Tobacco Settlement monies were accounted for in these funds and in the General Fund. Of the Settlement monies, 50.0 percent was deposited into the Tobacco Indemnification and Community Revitalization Fund at the Commission and 10.0 percent continues to be deposited into the Virginia Tobacco Settlement Fund at the Foundation. The remaining 40.0 percent continues to be reported in the General Fund.

Pursuant to Purchase and Sale Agreements executed in 2005 and 2007, the Commonwealth, acting as an agent on behalf of the Commission, sold the Commission's future right, title and interest in the Tobacco Settlement Revenues (TSRs) to the Tobacco Settlement Financing Corporation (Corporation) (related organization).

Consideration paid by the Corporation to the Commission for TSRs consisted of a cash amount deposited into an endowment to fund the long-term spending plan approved by the Commission. Bonds issued by the Corporation to finance the purchase price are asset- backed instruments secured solely by the Corporation's right to receive TSRs. At the time of issuance these revenues were expected to produce sufficient funds to repay the bond obligations issued by the Corporation.

The Commission is a nonmajor component unit of the Commonwealth, and the Corporation is disclosed as a related organization.

38. SERVICE CONCESSION ARRANGEMENTS

GASB Statement No. 60, *Accounting and Financial Reporting for Service Concession Arrangements*, describes the criteria for when an arrangement is classified as a Service Concession Arrangement (SCA). The basic criteria are: the operator of the capital asset owned by the transferor has the right to provide services in exchange for significant consideration; the operator's revenue must come from a third party; the transferor must retain some level of control over the asset; and the transferor must receive significant residual interest at the conclusion of the arrangement.

Primary Government

The Commonwealth of Virginia has five SCAs as of June 30, 2019: Pocahontas 895, the 495 Express Lanes, Elizabeth River – Midtown Tunnel, the 95 Express Lanes, and the I-66 Outside the Beltway Express Lanes. They are all related to highway construction and operation and were established per the Public-Private Transportation Act of 1995, as amended (PPTA). PPTA project goals are to provide highway projects to the public in a timely and cost effective manner with private funding and support.

Pocahontas 895

On June 21, 2006, the Pocahontas Parkway Association (Association – previously reported as a blended component unit of the Virginia Department of Transportation (VDOT), part of primary government) signed an agreement with Transurban (895) LLC (Transurban). Under the terms of the agreement, all assets and rights of the Association under the Comprehensive Agreement with VDOT were transferred to Transurban. In exchange for the existing toll road and other assets, Transurban transferred sufficient funds and securities to pay or defease all outstanding bonds of the Association and pay all other outstanding obligations owed to VDOT. Additionally, Transurban agreed to construct an enhancement to the original toll road, and this enhancement was completed and placed in service in 2011.

During the 99-year agreement term, VDOT will have fee title or good and valid interest in the asset. VDOT retains the right of inspection of the asset and has outlined maximum toll charges and increases in the terms of the agreement. Capital assets of $337.2 million and deferred inflow balances of $495.0 million are included in the government-wide financial statements. No contractual liabilities exist for this arrangement as of June 30.

During fiscal year 2014, the Transurban Board approved the transfer of Pocahontas 895 to the lenders of the asset due to lower revenues than anticipated. On May 15, 2014, DBi Services assumed control of Pocahontas 895. In December 2016, the majority owner of toll rights,

Macquarie and other rights owners closed on the sale of 100.0 percent of the tolling rights to Globalvia. Macquarie CAF Management LLC, Pocahontas Holdings LLC and Meeko LLC entered into a Sale and Purchase Agreement with Pocahontas Parkway Holdings LLC and Magnolia Operations LLC (Globalvia Inversiones SAU Subsidiaries) (as the buyers) in September 2016. The acquisition was effective on December 20, 2016 after VDOT's approval.

VDOT approved Globalvia Operations USA LLC as the new O&M contractor (as defined in the Concession Agreement) and the O&M agreement between Globalvia Operations USA LLC and Pocahontas Parkway Operations LLC (company the concession agreement with VDOT was transferred to after the acquisition in December 2016) on December 2017. Globalvia Operations USA LLC replaced DBi as the new O&M contractor in February 2018.

Globalvia acquired the company that had, at that time, the agreement with VDOT to develop, finance, operate, manage the tolls and maintain Route 895-Pocahontas Parkway. The concession agreement period will end in 2105.

495 Express Lanes

On December 19, 2007, VDOT signed an 80-year public-private partnership agreement with Capital Beltway Express, LLC. The purpose of this agreement is to build new express lanes to provide users with a faster and more reliable travel option. The construction of the express lanes was completed in November 2012.

During the 80-year agreement, VDOT maintains regulatory control and jurisdiction of the express lanes. VDOT will have fee title or good and valid interest in the express lanes. The lanes will remain open for the public as long as the applicable tolls are paid. Capital assets of $818.1 million and deferred inflows of $967.9 million are included in the government-wide financial statements. Liabilities are contingent on specific events occurring pursuant to the agreement.

In fiscal year 2019, VDOT worked with Capital Beltway Express, LLC under a draft Development Framework Agreement related to the northern extension of the 495 Express Lanes (495 Next), which is the approximately 2-mile extension of the existing express lanes from Route 738 to the vicinity of George Washington Memorial Parkway.

Elizabeth River – Midtown Tunnel

On December 5, 2011, VDOT signed a 58-year public private partnership agreement with Elizabeth River Crossings OPCO, LLC. The purposes of this agreement are to build and operate a new tunnel that will be adjacent to the existing Midtown Tunnel for crossing the Elizabeth River, provide improvements to the existing Midtown Tunnel and the Downtown Tunnel, and to provide various extensions and improvements of the Martin Luther King Jr. (MLK) Freeway and I-264. As of January 1, 2017 all project components of this agreement have reached substantial completion and are in service.

During the agreement, Elizabeth River Crossings OPCO, LLC will operate and maintain the road. The revenue source for the concessionaire will be toll collections, excluding the MLK Freeway, which will be used for maintenance, operating and return on investment for constructing the project. At the end of the 58-year term, control of and the rights to operate the facilities will revert back to VDOT. Capital assets of $892.8 million and deferred inflow balances of $884.1 million are included in the government-wide financial statements. Liabilities are contingent on specific events occurring pursuant to the agreement. In July 2017, VDOT issued a Department Project Enhancement directive for Elizabeth River Crossings OPCO LLC, to design and build noise barrier walls for the MLK Freeway. VDOT is committed for these costs estimated at $24.5 million and 30.0 percent of the design plan has been developed as of June 30, 2019. An additional project enhancement commitment previously disclosed for VDOT is a lighting project on the Downtown Tunnel which has been deleted with no cost incurred in fiscal year 2019 for this project. In addition to these project enhancements, the Federal Highway Administration (FHWA) has also required an annual traffic study over the next six fiscal years. The scope of the traffic study is being clarified with the FHWA as of June 30, 2019 and an estimate of the annual costs is still to be determined.

95 Express Lanes

On July 31, 2012, VDOT signed a 73-year public private partnership agreement with 95 Express Lanes, LLC. This project will create approximately 29 miles of Express Lanes on I-95 in Northern Virginia. The project will also add capacity to the existing high occupancy vehicle (HOV) lanes. The construction of the express lanes was completed in December 2014.

During the agreement, 95 Express Lanes LLC will operate and maintain the road. The revenue source for the concessionaire will be toll collections which will be used for maintenance, operating and return on investment for constructing the project. At the end of the 73-year term, control of and the rights to operate the facilities will revert back to VDOT. The lanes will remain open for the public as long as the applicable tolls are paid. Capital assets of $559.6 million and deferred inflows balances of $592.5 million are included in the government-wide financial statements. Liabilities are contingent on specific events occurring pursuant to the agreement.

During fiscal year 2016, the Commonwealth Transportation Board awarded a contract to design and construct a reversible extension of the 95 Express Lanes at the southern terminus in Stafford County. The approximately 2.5-mile extension will carry traffic beyond the location where the 95 Express Lanes currently end. The construction began in fiscal year 2017 and lanes opened to traffic on October 31, 2017. This 2.5-mile extension resulted in an increased value of $25.7 million to the 95 Express Lanes SCA. In addition, plans were announced by VDOT during fiscal year 2016, to extend the 95 Express Lanes north to I-395. This project involves expanding and converting two HOV lanes to three express lanes near the Pentagon. Construction on this 8-mile

extension began in summer of 2017 with project completion scheduled during 2020.

VDOT reached commercial close with Transurban on June 8, 2017, and financial close was completed on July 25, 2017, for this project.

On June 8, 2017, an amended and restated Comprehensive Agreement was signed between VDOT and 95 Express Lanes LLC to include the scope of the project work for the I-395 northern extension. The Comprehensive Agreement was updated to include this addition to the project and payments to the Department for Transit Improvements. In consideration for the rights granted by VDOT to 95 Express Lanes LLC, solely in respect of the I-395 Project, 95 Express Lanes LLC will agree to make a payment to VDOT of $15.0 million on the I-395 Project service commencement date and escalating annually thereafter at a rate of 2.5 percent per annum as such amounts per payment year are set forth in the Amended and Restated Comprehensive Agreement (ARCA).

In fiscal year 2017, planning was initiated on the additional extension of the Express Lanes from Garrisonville Road to Route 17 in Stafford County, which is about 10 miles. It will have direct connection with both the northbound and southbound Rappahannock River crossing projects and will be analyzing access points and operational improvements with the project.

On April 18, 2019, a second amended and restated Comprehensive Agreement was signed between VDOT and 95 Express Lanes LLC to add the scope of the project work for the Fredericksburg Extension. The Comprehensive Agreement was updated to include payments to VDOT. At financial close on April 30, 2019, 95 Express Lanes LLC paid $45.0 million Initial Permit Fee Buyout Payment. The Concessionaire also provided a right of way cost deposit of $2.5 million and $4.0 million for southbound Rappahannock River Crossing work overlap funding. Deferred inflows balance of $51.3 million is included in the fund financial statements. VDOT received an additional $65.9 million from 95 Express Lanes LLC at the additional financial close in July 2019, which is a sum of $11.5 million Private Activity Bonds (PABs) payment and $54.4 million design-build price protection benefits. At service commencement, the concessionaire will make payment of $232.0 million Final Permit Fee Buyout Payment as set forth in the second amended and restated Comprehensive Agreement.

I-66 Outside the Beltway Express Lanes

On December 8, 2016, a 50-year Public Private Partnership Agreement (the Agreement) between VDOT, the Department of Rail and Public Transportation (DRPT), and private partner, I-66 Express Mobility Partners LLC, was signed.

The $2.2 billion I-66 Outside the Beltway Project with Express Mobility Partners is to build express lanes on I-66 outside the I-495 Capital Beltway. During the 50-year Agreement, VDOT maintains regulatory control and jurisdiction of the express lanes. VDOT will have fee title or good and valid interest in the express lanes. The purpose of this Agreement is to build new express lanes to provide users with a faster and more reliable travel option.

The I-66 Outside the Beltway Project will include 22.5 miles of new express lanes alongside three regular lanes from I-495 to University Boulevard in Gainesville, Virginia. The project will also provide new and improved bus service and transit routes, new and improved park and ride lots, and interchange improvements to enhance safety and reduce congestion.

Express Mobility Partners will be responsible for all costs to design, build, operate and maintain the I-66 Express Lanes, without any upfront public contribution.

Financial close on the project occurred on November 9, 2017. Construction work continued on the project during fiscal year 2019. The express lanes will open to traffic in mid-2022. These lanes will remain open for the public as long as the applicable tolls are paid. Liabilities for VDOT from the Agreement are contingent on specific events occurring pursuant to the Agreement.

Express Mobility Partners provided $578.9 million as of June 30, 2018, as an up-front concession payment to the Commonwealth. Pending approval by the Commonwealth Transportation Board, these funds will be used for project oversight by VDOT, contingency risk during construction that is released during the construction period, and projects in the corridor as selected by the Commonwealth Transportation Board. Deferred inflows balance of $559.6 million is included in the fund financial statements.

Additional consideration to be provided by Express Mobility Partners includes several components of the permit fee established in the Agreement. A description of these components and the stipulations around receiving is provided below.

Express Mobility Partners is required to pay VDOT a permit fee that consists of transit funding payments, support for corridor improvements, and revenue sharing as further described below.

The transit funding payment portion of the permit fee that becomes due during the operating period will be payable after debt service and required reserve accounts, and will be subject to the lock-up provisions required in the Transportation Infrastructure Finance and Innovation Act (TIFIA) Loan Agreement, but prior to support for corridor improvements and distributions. If funds are insufficient to make scheduled transit funding payments at the time due, such payments or any unpaid portion thereof will be considered past due and will remain due and payable without interest charges. The net present value of these payments is $768.0 million.

The support for corridor improvements is to be paid as indicated in the Agreement. Amounts to be paid annually are contingent on actual toll revenues. The net present value of the support for corridor improvements is expected to total $350.0 million. At the end of the term of the Agreement, any unpaid balance of these payments is to be forgiven or cancelled.

Express Mobility Partners will make revenue sharing payments in amounts calculated based on actual cumulative net present value of gross revenue at the end of each year of the Agreement. The percentage of gross revenue to be paid by Express Mobility Partners to VDOT increases in accordance with a five-tier revenue sharing scale. Revenue sharing payments do not have to be made if transit funding payments or support for corridor improvements are past due or unpaid.

Additional information on these payments can be found in the Agreement executed between VDOT, DRPT, and Express Mobility Partners.

Component Units

Aramark – Dining Services

During the year ended June 30, 2015, the University of Virginia (nonmajor) entered into an agreement with Aramark Educational Services, LLC (Aramark) for Aramark to provide dining services to the University. In return for use of University facilities, Aramark is required to make certain payments to the University and the University is required to provide certain repair and maintenance services related to the facilities during the term of the agreement. As of June 30, 2019, the University has accrued a $12.8 million receivable, a $25.1 million liability and a $47.7 million deferred inflow of resources related to the service concession arrangement.

39. INFORMATION TECHNOLOGY INFRASTRUCTURE

The Comprehensive Infrastructure Agreement (CIA) was a contract between the Commonwealth of Virginia (Commonwealth) acting through the Virginia Information Technologies Agency (VITA) and Northrop Grumman Systems Corporation (NG). The Commonwealth's primary goal was to significantly improve the Commonwealth's IT infrastructure and the manner in which such infrastructure was operated, supported, and maintained for various IT infrastructure services (i.e. integration, service desk, mainframe, server and storage, voice and data network, messaging, security, and data center facilities). This contract was terminated for convenience effective August 17, 2018. At the termination date, the Commonwealth issued a payment for contractually required resolution and exit fees, totaling approximately $79.3 million. Furthermore, a legal settlement was later reached between NG and VITA whereby the Commonwealth issued a settlement payment totaling $35.8 million.

The Commonwealth has signed new contracts with various IT service providers. The new service providers include SAIC for Multi-Services Integrator (MSI) services; Atos for managed security services; Unisys for server, storage, and data center services; Ironbow for end user computing services; Xerox for managed print services; and Verizon for voice and data network services. The contract terms range from five years to seven years, with additional renewal options on each.

Expenses in fiscal year 2019 associated with the new service providers were $138.3 million. The Commonwealth expects to spend an additional $904.8 million over the remaining life of the current contracts with the new suppliers.

40. CONTINGENCIES

A. Grants and Contracts

The Commonwealth has received federal grants for specific purposes that are subject to review and audit by the grantor agencies or their auditors. Claims against these resources are generally conditional upon compliance with the terms and conditions of grant agreements and applicable federal regulations, including the expenditure of resources for allowable purposes. Any disallowance resulting from a federal audit may become a liability of the Commonwealth.

Institutions of higher education (component units) and other state agencies are required to comply with various federal regulations issued by the Office of Management and Budget, if such agencies are recipients of federal grants, contracts, or other sponsored agreements. Failure to comply with certain requirements of these regulations may result in questions concerning the allowability of related direct and indirect charges pursuant to such agreements. It is believed that the ultimate disallowance pertaining to these regulations, if any, will be immaterial to the overall financial condition of the Commonwealth.

The U.S. Department of Health and Human Services (DHHS) Office of the Inspector General conducted a review and indicated that the Commonwealth's Statewide Indirect Cost Allocation Plan rates have allowed over-recoveries and transfers in the internal service funds and portions of selected rebates. The Commonwealth has paid the amount it believes is owed for fiscal years 2009-2014, and appealed a DHHS determination letter indicating that an additional amount is owed for this time period. While the DHHS Departmental Appeals Board upheld the DHHS determination, the Commonwealth is currently continuing the appeal process. In October 2018, the Commonwealth paid an additional $10.3 million in order to cease interest assessment and prevent potential debt-set off actions on future federal drawdowns. The Commonwealth still disputes that this amount is owed and expects to recover this amount from the appeal settlement. Accordingly, this amount is not included in the accompanying financial statements.

Additionally, the DHHS has received the 2017 and 2016 payback schedules which are based on fiscal year 2016 and 2015 data, respectively. Further, the Commonwealth has computed payback schedules for 2019 and 2018 which are based on fiscal years 2018 and 2017 data, respectively. The Commonwealth has computed a liability of $25.4 million representing the amounts owed to the federal government for internal service fund over-recoveries and transfers, as well as the federal share of various rebates received. This amount has been reflected in the accompanying financial statements.

The Virginia Tourism Authority (nonmajor component unit) had unclaimed awards totaling $1.9 million payable to awardees upon submission of proper claims for reimbursement for the Marketing Leverage Program, in addition to, unclaimed awards totaling $135,719 payable to awardees upon submission of proper claims for reimbursement for the World War Tourism Program and Music Festival Program. Additionally, property at the Virginia/Maryland border to be used for the Gateway Welcome Center was donated to the Authority in July 2008. The deed to the property includes a covenant requiring any or all land to revert to the U.S. Government should it become needed for national defense. The net book value of the property as of June 30, 2019 was $813,850.

B. Litigation

The Commonwealth is named as a party in legal proceedings and investigations that occur in the normal course of governmental operations, some involving substantial amounts. It is not possible at the present time to estimate the ultimate outcome or liability, if any, of the Commonwealth in respect to the various proceedings; however, it is believed that any ultimate liability resulting from these suits or investigations will not have a material, adverse effect on the financial condition of the Commonwealth.

C. Subject to Appropriation

Both the primary government and the discretely presented component units enter into agreements and issue debt secured solely by future appropriations from the General Fund of the Commonwealth. The primary government has leases and other agreements of such debt of $2.9 billion. The discretely presented component units have such debt of $4.6 billion.

D. Bailment Inventory

The Virginia Alcoholic Beverage Control Authority (ABC) houses and controls bailment inventory in the warehouse and is therefore responsible for the exercise of reasonable care to preserve the inventory until it is purchased by ABC or returned to the supplier. ABC uses the bailment system for payment of merchandise for resale. ABC initiates payments to the vendors based on shipments from the ABC warehouse to the retail stores, rather than receipt of invoice from the vendor. As of June 30, 2019, the bailment inventory was valued at $50.1 million.

E. Loan Guarantees

The Virginia Small Business Financing Authority (VSBFA) (nonmajor component unit) has a loan guaranty program which provides guarantees up to the lesser of $500,000, or 75.0 percent, of a bank loan for lines of credit and short-term working capital loans for small businesses authorized by Section 2.2-2285 of the *Code of Virginia*. The relationship of the Commonwealth to the issuer or issuers of the obligations are private banks that contact VSBFA to obtain guarantees if they deem it necessary to approve the loan. The VSBFA staff underwrites the request for guarantees, and the Board of Directors makes the credit decision to approve or decline the loan. The Board has given VSBFA staff delegated authority to approve requests up to, and including, $500,000. The Board reviews all loan packages and ratifies all decisions. The length of time for the guarantees is up to five years for lines of credit and seven years for term loans. Upon a default or event of default under the loan documents and payment by VSBFA under the Guaranty Agreement, the borrower and the guarantor(s), jointly and severally, acknowledge and agree that VSBFA may set off, collect and retain any payments or monies due or owing the borrower or any guarantor from the Commonwealth of Virginia, and/or any governmental authority or agency of the Commonwealth. VSBFA submits collections to the Office of the Attorney General, Division of Debt Collection for legal action and collection of debt. As of June 30, 2019, the loan guaranty program has guarantees outstanding of $6.7 million and restricted assets pledged as collateral of $10.2 million.

GASB Statement No. 70, *Accounting and Financial Reporting for Nonexchange Financial Guarantees,* requires that certain information be disclosed regarding selected nonexchange financial guarantees. As of June 30, 2019, the VSBFA recognized a nonexchange financial guarantee liability of $133,677. This is a decrease of $9,610 from the beginning balance of $143,287. There were no required payments made during fiscal year 2019. Additionally, there have been no cumulative amounts paid on these outstanding loan guarantees nor are there any expected recoveries.

F. Regional Wet Weather Management Plan

Hampton Roads Sanitation District (HRSD) (nonmajor component unit) is party to a federal consent decree with the federal and state governments (the Consent Decree), which requires the HRSD to evaluate the wet weather capacity of the regional sewer system, including collection systems owned by 14 of the localities which the HRSD serves in the Hampton Roads area. Based upon that evaluation, the HRSD, in consultation with the localities, is required to develop a regional wet weather management plan (RWWMP) for submittal to the federal and state environmental agencies for their approval.

The HRSD and the localities believe that addressing wet weather capacity issues from a regional perspective will result in the most affordable and cost-effective approach for rate payers throughout the region. Toward that end, the HRSD and the localities entered into a legally binding Memorandum of Agreement in March of 2014 (the MOA). The MOA commits HRSD to (1) develop the RWWMP in consultation with the localities, (2) fund the approved plan through a regional rate imposed on all regional ratepayers, (3) design and construct the necessary

improvements, and (4) assume responsibility for wet weather capacity throughout the region in each area once the RWWMP is implemented. In exchange, the localities have agreed to (1) cooperate with the HRSD, (2) facilitate the construction of and accept ownership of any improvements which the HRSD may need to construct in the localities' systems, and (3) maintain the integrity of their systems to industry standards. The Consent Decree and MOA also contemplate that the localities' obligation to maintain the integrity of their sewer systems to industry standards was embodied in a State administrative order. While the HRSD is preparing the RWWMP, the Consent Decree also requires the HRSD to implement approximately $200.0 million in priority capital system upgrade projects over a 10-year period, which is included in the capital improvement and expansion program. The HRSD is on schedule to complete these projects. The HRSD has a major capital improvement and expansion program funded through the issuance of debt and its own resources. As of June 30, 2019, the HRSD has outstanding commitments for contracts in progress of approximately $167.2 million.

41. PENDING GOVERNMENTAL ACCOUNTING STANDARDS BOARD STATEMENT

The GASB has issued Statement No. 84, *Fiduciary Activities*, and Statement No. 87, *Leases.* GASB Statement No. 84 will modify the presentation of fiduciary funds and the related disclosures when implemented in fiscal year 2020. GASB Statement No. 87 will redefine leases and significantly impact the Commonwealth's reporting disclosures when implemented in fiscal year 2021.

42. SUBSEQUENT EVENTS

Primary Government

Debt

On August 14, 2019, the Commonwealth of Virginia issued $54.3 million of General Obligation Bonds, Series 2019A, $93.8 million of General Obligation Refunding Bonds, Series 2019B, and $10.5 million of General Obligation Refunding Bonds, Series 2019C (Federally Taxable). The 2019A Bonds will provide funding for authorized 9(c) projects. The 2019B Bonds will refund certain maturities of its Series 2009C (9(b) projects) and 2009D (9(c) projects) Bonds. The 2019C Bonds will refund certain maturities of its Series 2009E-2 (9(b) projects) Bonds.

Other

The Virginia Retirement System (VRS) Board of Trustees modified the assumption for the investments long-term expected rate of return from 7.0 to 6.8 percent effective with the June 30, 2019, measurement date. This change is applicable to the VRS-sponsored pension and OPEB plans and will be applied to all periods of projected benefit payments to determine the total pension/OPEB liability in accordance with GASB Standards. This change will be reflected in the GASB Statement Nos. 68 and 75 data with the measurement date of June 30, 2019, and will be included in the Commonwealth's fiscal year 2020 financial statements.

Component Units

Debt

On July 8, 2019, a local borrower prepaid an outstanding obligation with the Virginia Resources Authority (VRA) (major) in the amount of $19.0 million. The local obligation was funded from bond proceeds from the Virginia Pooled Financing Program (VPFP) Series 2011A and 2011B bonds. It is VRA's intention to defease the related bonds with prepayment proceeds. On August 8, 2019, a local borrower prepaid an outstanding obligation with VRA in the amount of $4.7 million. The local obligation was funded from bond proceeds from the VPFP Series 2009A (ACE) bonds. It is VRA's intention to defease the related bonds with prepayment proceeds. VRA issued revenue bonds in the amount of $93,890,000 dated August 14, 2019 through the VPFP. Interest rates range from 2.0 percent to 5.0 percent with a final maturity date of November 1, 2049.

On July 15, 2019, a Master Equipment Lease Agreement between Banc of America Public Capital Corp, as Lessor, and Virginia Port Authority (VPA) (nonmajor), as Lessee, was entered into for the lease purchase of terminal equipment totaling $22.0 million. The payments associated with this agreement begin January 1, 2020 in the amount of $882,587 and continue with semi-annual payments each July and January for a period of fifteen years at an interest rate of 2.5 percent. Final payment will be due July 1, 2034.

On August 21, 2019, the Virginia Housing Development Authority (VHDA) (major) issued $50.0 million of Rental Housing Bonds Series C-Taxable. On October 1, 2019, the VHDA redeemed $8.2 million and $18.7 million of Series 2010A and $9.6 million of Series 2012C-8 Commonwealth Mortgage Bonds. On October 16, 2019, the VHDA issued Rental Housing Bond 2019 Series D-Taxable in the amount of $50.0 million.

On September 5, 2019, the University of Virginia (UVA) (nonmajor) issued $350.0 million in General Revenue Pledge Bonds, Series 2019A. The proceeds will be used to fund capital projects at the University's academic facilities and refund a portion of the outstanding principal balance of the University's commercial paper notes. On September 10, 2019, UVA issued $150.0 million in General Revenue Pledge Bonds, Series 2019B. The proceeds will primarily be used to fund capital projects at the University's medical center facilities and refund a portion of the outstanding principal balance of the University's commercial paper notes. On September 10, 2019, UVA issued an additional $287.4 million in General Revenue Pledge Refunding Bonds, Series 2019C. The proceeds of the bonds will primarily be used to advance refund a portion of the University's Series 2011, Series 2013A, and Series 2013B bonds originally issued to fund academic and medical center capital projects.

On October 24, 2019, Virginia Public School Authority (VPSA) (major) issued its Special Obligation School Financing Bonds, Montgomery County Series 2019 in the amount of $27.3 million. The Bonds will be used by the County to finance the costs of various school capital improvement projects.

On October 27, 2019, a Master Equipment Lease Agreement between Banc of America Capital Corporation as Lessor and VPA as Lessee was entered into for the lease purchase of terminal equipment totaling $15.1 million. The payments associated with this agreement begin July 1, 2020 in the amount of $842,192 and continue with semi-annual payments each January and July for a period of 10 years at an interest rate of 2.0 percent. Final payments will be due January 1, 2030.

On October 29, 2019, VPSA issued its Special Obligation School Financing Bonds, Prince William County Series 2019A in the amount of $109.2 million. The Bonds will be used by the County to finance the costs of various school capital improvement projects. In addition, VPSA issued its Special Obligation School Financing Refunding Bonds, Prince William County Series 2019B (Federally Taxable) in the amount of $34.6 million. The Bonds will be used by the County to refund certain maturities of Special Obligation School Financing Bond Series 2011, 2012 and 2013 issued by the VPSA for the benefit of the County for the initial financing of the costs of various school capital improvement projects.

On November 5, 2019, VHDA issued Commonwealth Mortgage Bonds Series 2019 A-Taxable in the amount of $106.5 million.

On November 12, 2019, VPSA issued $88.4 million of School Financing Bonds (1997 Resolution), Series 2019C and $22.3 million of School Financing Refunding Bonds (1997 Resolution), Series 2019D (Federally Taxable). The 2019C Bonds will be used to purchase certain general obligation local school bonds to finance capital projects for schools and the 2019D Bonds will be used to refund certain maturities of its Series 2013B Bonds.

On November 20, 2019, VRA issued revenue bonds through the VPFP in the amount of $383.6 million. Interest rates range from 1.8 percent to 5.0 percent with a final maturity date of November 1, 2049.

On December 1, 2019, VHDA redeemed $2.0 million of Series 2010B, $9.6 million of Series 2012C-8, and $19.8 million of Series 2010 B.

On December 4, 2019, the Virginia College Building Authority (VCBA) (major) issued $37.1 million in Educational Facilities Revenue Bonds, Series 2019A under the Public Higher Education Financing Program (the “Pool Program”). VCBA will use the proceeds of the Bonds to acquire Institutional Notes from participating public institutions of higher education. Each participating Institution will use the proceeds of its Institutional Note to finance capital projects approved by the General Assembly.

On December 5, 2019, VCBA issued $134.9 million in Educational Facilities Revenue Bonds (21st Century College and Equipment Programs), Series 2019B and $229.1 million in Educational Facilities Revenue Refunding Bonds (21st Century College and Equipment Programs), Series 2019C. The 2019B Bonds will provide funding for authorized VCBA capital projects at public institutions of higher education around the Commonwealth. The 2019C Bonds will refund certain maturities of VCBA’s Series 2009F-2 Build America Bonds.

Other

Effective July 10, 2019, Jefferson College of Health Sciences, a division of Carilion Clinic, merged with Radford University (nonmajor) resulting in the formation of Radford University Carilion.

In September 2019, the Virginia Commonwealth University Health System Authority (Authority) (a blended component unit of the Virginia Commonwealth University – nonmajor component unit) committed to a majority sale of Virginia Premier to Optima, a wholly owned subsidiary of Sentara Healthcare. The transaction is expected to close by spring of 2020.