

In the opinion of Orrick, Herrington & Sutcliffe LLP, Bond Counsel to the City and County of Honolulu, Hawaii (the "City and County"), based upon an analysis of existing laws, regulations, rulings and court decisions and assuming, among other matters, the accuracy of certain representations and compliance with certain covenants, interest on the Senior Series 2019A Bonds, Senior Series 2019B Bonds and Junior Series 2019A Bonds (collectively, the "Tax-Exempt Bonds") is excluded from gross income for federal income tax purposes under Section 103 of the Internal Revenue Code of 1986. In the further opinion of Bond Counsel, the interest on the Tax-Exempt Bonds is not a specific preference item for purposes of the federal alternative minimum tax. Bond Counsel is of the opinion that the Series 2019 Bonds and the income therefrom are exempt from all taxation by the State of Hawaii or any county or other political subdivision thereof, except inheritance, transfer, estate and certain franchise taxes. Bond Counsel is of the further opinion that interest on the Senior Series 2019C Bonds and the Junior Series 2019B Bonds are not excluded from gross income for federal income tax purposes. Bond Counsel expresses no opinion regarding any other tax consequences related to the ownership or disposition of, or the amount, accrual or receipt of interest on, the Series 2019 Bonds. See "TAX MATTERS" in this Official Statement.

\$496,910,000

**CITY AND COUNTY OF HONOLULU
Wastewater System Revenue Bonds**

\$216,565,000
Senior Series 2019A
First Bond Resolution

\$174,710,000
Senior Series 2019B
(Refunding)
First Bond Resolution

\$20,810,000
Senior Series 2019C
(Taxable Refunding)
First Bond Resolution

\$22,830,000
Junior Series 2019A
(Refunding)
Second Bond Resolution



\$61,995,000
Junior Series 2019B
(Taxable Refunding)
Second Bond Resolution

Dated: Date of Delivery

Due: July 1, as shown on inside cover

The City and County of Honolulu Wastewater System Revenue Bonds (First Bond Resolution) Senior Series 2019A Bonds (the "Senior Series 2019A Bonds"), Senior Series 2019B Bonds (Refunding) (the "Senior Series 2019B Bonds") and Senior Series 2019C Bonds (Taxable Refunding) (the "Senior Series 2019C Bonds," and, collectively with the Senior Series 2019A Bonds and the Senior Series 2019B Bonds, the "Senior Series 2019 Bonds") and the City and County of Honolulu Wastewater System Revenue Bonds (Second Bond Resolution) Junior Series 2019A Bonds (Refunding) (the "Junior Series 2019A Bonds") and Junior Series 2019B Bonds (Taxable Refunding) (the "Junior Series 2019B Bonds," and, together with the Junior Series 2019A Bonds, the "Junior Series 2019 Bonds," and, collectively with the Senior Series 2019 Bonds, the "Series 2019 Bonds") are issuable in fully registered form and when issued will be registered initially in the name of Cede & Co., as nominee of The Depository Trust Company ("DTC"), New York, New York. So long as DTC or its nominee is the registered owner of the Series 2019 Bonds, purchases of the Series 2019 Bonds will be made in book-entry form only, through brokers and dealers who are, or who act through, DTC participants. Beneficial owners of the Series 2019 Bonds will not receive physical delivery of Series 2019 Bond certificates; payment of the principal of and interest and any premium on the Series 2019 Bonds will be made directly to DTC or its nominee; and disbursement of such payments to DTC participants will be the responsibility of DTC and disbursement of such payments to the beneficial owners will be the responsibility of DTC participants. Purchases of the Series 2019 Bonds may be made in the denomination of \$5,000 or any integral multiple thereof.

The Series 2019 Bonds bear interest payable on January 1 and July 1 of each year, commencing July 1, 2020 for the Senior Series 2019A Bonds and January 1, 2020 for the Senior Series 2019B Bonds, Senior Series 2019C Bonds, Junior Series 2019A Bonds and the Junior Series 2019B Bonds. The Series 2019 Bonds are subject to redemption prior to the stated maturity thereof as described herein. Proceeds of the Series 2019 Bonds will be used to: (i) fund the cost of certain additions and improvements to the wastewater system owned by the City and County, (ii) refund certain outstanding bonds previously issued by the City and County pursuant to the First Bond Resolution (as defined below) and the Second Bond Resolution (as defined below), and (iii) pay the costs of issuance of the Series 2019 Bonds.

The Senior Series 2019 Bonds will be issued by the City and County under a bond resolution, as supplemented (the "First Bond Resolution"), pursuant to which the City and County has previously issued bonds and may issue additional bonds on a parity with the Senior Series 2019 Bonds, as described herein. The Senior Series 2019 Bonds are limited special obligations of the City and County payable solely from, and secured solely by a pledge of, the Net Revenues, proceeds of Bonds held or set aside under the First Bond Resolution, and certain funds and accounts established by the First Bond Resolution, on a parity with all other Bonds issued under the First Bond Resolution. Such pledge of the Net Revenues is senior and superior to any pledge of Net Revenues to secure obligations issued under any other bond resolution, including the Second Bond Resolution.

The Junior Series 2019 Bonds will be issued by the City and County under a bond resolution, as supplemented (the "Second Bond Resolution"), pursuant to which the City and County has previously issued bonds and may issue additional bonds on a parity with the Junior Series 2019 Bonds, as described herein. The Junior Series 2019 Bonds are limited special obligations of the City and County payable solely from, and secured solely by a pledge of, the Net Revenues, proceeds of Bonds held or set aside under the Second Bond Resolution, and certain funds and accounts established by the Second Bond Resolution, on a parity with all other Bonds issued under the Second Bond Resolution. Such pledge of the Net Revenues is junior in priority and subordinate to any pledge of Net Revenues to secure obligations issued under the First Bond Resolution.

The Series 2019 Bonds are not a general or moral obligation of the State of Hawaii or any political subdivision thereof, including the City and County, and the faith and credit of the State of Hawaii or any political subdivision thereof, including the City and County, are not pledged to the payment of the principal of, premium, if any, or interest on the Series 2019 Bonds, and no holder of the Series 2019 Bonds shall have the right to compel the exercise of the taxing power of the State of Hawaii or any political subdivision thereof, including the City and County, in connection with any default with respect to the Series 2019 Bonds.

This cover page contains certain information for quick reference only. It is not a summary of the bond issue. Prospective investors must read the entire Official Statement (including the Appendices) to obtain information essential to the making of an informed investment decision.

The Series 2019 Bonds are offered when, as and if issued and received by the Underwriters, and are subject to the approval of legality by Orrick, Herrington & Sutcliffe LLP, Bond Counsel to the City and County. Certain legal matters will be passed upon for the Underwriters by their co-counsel, Dentons US LLP, Honolulu, Hawaii, and Katten Muchin Rosenman LLP, New York, New York. It is expected that the Series 2019 Bonds in definitive form will be available for delivery to DTC, in New York, New York, on or about November 6, 2019.

BofA Securities

Piper Jaffray & Co.

MATURITY SCHEDULE
City and County of Honolulu
Wastewater System Revenue Bonds
(First Bond Resolution)

\$216,565,000 Senior Series 2019A

<u>Year (July 1)</u>	<u>Principal Amount</u>	<u>Interest Rate</u>	<u>Price</u>	<u>Yield</u>	<u>CUSIP[†] (438701)</u>
2020	\$2,240,000	5.000%	102.442%	1.230%	R48
2021	3,815,000	5.000	106.147	1.230	R55
2022	4,010,000	5.000	109.725	1.260	R63
2023	4,220,000	5.000	113.309	1.260	R71
2024	4,435,000	5.000	116.650	1.300	R89
2025	4,640,000	4.000	114.198	1.380	R97
2026	4,825,000	4.000	115.977	1.470	S21
2027	5,025,000	4.000	117.614	1.550	S39
2028	5,230,000	4.000	119.052	1.630	S47
2029	5,440,000	4.000	120.000	1.740	S54
2030	5,665,000	4.000	118.438 ^c	1.900	S62
2031	5,895,000	4.000	117.475 ^c	2.000	S70
2032	6,135,000	4.000	116.425 ^c	2.110	S88
2033	6,385,000	4.000	115.574 ^c	2.200	S96
2034	6,645,000	4.000	115.105 ^c	2.250	T20
2035	6,920,000	4.000	114.731 ^c	2.290	T38
2036	7,200,000	4.000	114.080 ^c	2.360	T46
2037	7,495,000	4.000	113.710 ^c	2.400	T53
2038	7,800,000	4.000	113.341 ^c	2.440	T61
2039	8,120,000	4.000	112.974 ^c	2.480	T79

\$25,000,000 4.000% Term Bonds due July 1, 2044, Priced: 112.062^c to yield 2.580%, CUSIP 438701T87
 \$21,400,000 5.000% Term Bonds due July 1, 2044, Priced: 123.055^c to yield 2.320%, CUSIP 438701T95
 \$30,000,000 4.000% Term Bonds due July 1, 2049, Priced: 111.248^c to yield 2.670%, CUSIP 438701U28
 \$28,025,000 5.000% Term Bonds due July 1, 2049, Priced: 122.473^c to yield 2.380%, CUSIP 438701U36

\$174,710,000 Senior Series 2019B (Refunding)

<u>Year (July 1)</u>	<u>Principal Amount</u>	<u>Interest Rate</u>	<u>Price</u>	<u>Yield</u>	<u>CUSIP[†] (438701)</u>
2020	\$1,790,000	4.000%	101.794%	1.230%	U44
2021	6,480,000	5.000	106.147	1.230	U51
2025	2,355,000	4.000	114.198	1.380	U69
2026	4,935,000	5.000	122.292	1.470	U77
2027	5,190,000	5.000	124.803	1.550	U85
2028	7,840,000	5.000	127.092	1.630	U93
2029	5,325,000	5.000	128.849	1.740	V27
2030	5,585,000	5.000	128.235 ^c	1.800	V35
2031	13,075,000	5.000	127.828 ^c	1.840	V43
2032	10,625,000	5.000	127.422 ^c	1.880	V50
2033	11,655,000	5.000	126.816 ^c	1.940	V68
2034	12,180,000	4.000	115.105 ^c	2.250	V76
2035	16,545,000	4.000	114.731 ^c	2.290	V84
2036	17,475,000	5.000	125.713 ^c	2.050	V92
2037	13,790,000	4.000	113.710 ^c	2.400	W26
2038	14,310,000	4.000	113.341 ^c	2.440	W34
2039	14,940,000	5.000	124.425 ^c	2.180	W42
2040	10,615,000	5.000	124.228 ^c	2.200	W59

\$20,810,000 Senior Series 2019C (Taxable Refunding)

<u>Year (July 1)</u>	<u>Principal Amount</u>	<u>Interest Rate</u>	<u>Price</u>	<u>Yield</u>	<u>CUSIP[†] (438701)</u>
2025	\$3,810,000	2.216%	100.000%	2.216%	W67
2026	5,355,000	2.316	100.000	2.316	W75
2028	5,660,000	2.505	100.000	2.505	W83
2030	5,985,000	2.645	100.000	2.645	W91

[†] Copyright, American Bankers Association. CUSIP data provided by Standard & Poor's CUSIP Service Bureau, a division of The McGraw-Hill Companies, Inc. This data is not intended to create a database and does not serve in any way as a substitute for the CUSIP Service. CUSIP numbers are provided for convenience of reference only. Neither the City and County nor the Underwriters takes any responsibility for the accuracy of such numbers.

^c Priced to July 1, 2029 first optional redemption date.

**City and County of Honolulu
Wastewater System Revenue Bonds
(Second Bond Resolution)**

\$22,830,000 Junior Series 2019A (Refunding)

<u>Year (July 1)</u>	<u>Principal Amount</u>	<u>Interest Rate</u>	<u>Price</u>	<u>Yield</u>	<u>CUSIP[†] (438701)</u>
2020	\$11,585,000	5.000%	102.408%	1.280%	X25
2026	1,425,000	3.000	109.131	1.550	X33
2027	1,460,000	3.000	109.893	1.620	X41
2028	1,525,000	5.000	126.446	1.700	X58
2029	1,595,000	5.000	128.133	1.810	X66
2030	1,680,000	5.000	127.017 ^c	1.920	X74
2031	1,755,000	3.000	106.921 ^c	2.200	X82
2032	1,805,000	3.000	105.671 ^c	2.340	X90

\$61,995,000 Junior Series 2019B (Taxable Refunding)

<u>Year (July 1)</u>	<u>Principal Amount</u>	<u>Interest Rate</u>	<u>Price</u>	<u>Yield</u>	<u>CUSIP[†] (438701)</u>
2024	\$14,455,000	2.233%	100.000%	2.233%	Y24
2025	14,790,000	2.316	100.000	2.316	Y32
2027	16,170,000	2.495	100.000	2.495	Y40
2028	16,580,000	2.585	100.000	2.585	Y57

[†] Copyright, American Bankers Association. CUSIP data provided by Standard & Poor's CUSIP Service Bureau, a division of The McGraw-Hill Companies, Inc. This data is not intended to create a database and does not serve in any way as a substitute for the CUSIP Service. CUSIP numbers are provided for convenience of reference only. Neither the City and County nor the Underwriters takes any responsibility for the accuracy of such numbers.

^c Priced to July 1, 2029 first optional redemption date.

City and County of Honolulu
State of Hawaii
(Incorporated 1907)



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CAUTIONARY STATEMENTS REGARDING
FORWARD-LOOKING STATEMENTS IN
THIS OFFICIAL STATEMENT

Certain statements included or incorporated by reference in this Official Statement constitute forward-looking statements. Such statements are generally identifiable by the terminology used such as “plan,” “expect,” “estimate,” “project,” “budget” or other similar words. The achievement of certain results or other expectations contained in such forward-looking statements involve known and unknown risks, uncertainties and other factors which may cause actual results, performance or achievements described to be materially different from any future results, performance or achievements expressed or implied by such forward-looking statements. No assurance is given that actual results will meet the forecasts of the City and County in any way, regardless of the level of optimism communicated in the information. The City and County is not obligated to issue any updates or revisions to the forward-looking statements if or when its expectations, or events, conditions or circumstances on which such statements are based occur.

THE ACHIEVEMENT OF CERTAIN RESULTS OR OTHER EXPECTATIONS CONTAINED IN SUCH FORWARD-LOOKING STATEMENTS INVOLVE KNOWN AND UNKNOWN RISKS, UNCERTAINTIES AND OTHER FACTORS WHICH MAY CAUSE ACTUAL RESULTS, PERFORMANCE OR ACHIEVEMENTS DESCRIBED TO BE MATERIALLY DIFFERENT FROM ANY FUTURE RESULTS, PERFORMANCE OR ACHIEVEMENTS EXPRESSED OR IMPLIED BY SUCH FORWARD-LOOKING STATEMENTS. THE CITY AND COUNTY DOES NOT PLAN TO ISSUE ANY UPDATES OR REVISIONS TO THOSE FORWARD-LOOKING STATEMENTS IF OR WHEN ANY OF ITS EXPECTATIONS, OR EVENTS, CONDITIONS OR CIRCUMSTANCES ON WHICH SUCH STATEMENTS ARE BASED OCCUR.

* * * * *

The information contained in this Official Statement has been obtained from the City and County of Honolulu and other sources deemed reliable. No guaranty is made, however, as to the accuracy or completeness of such information.

The Underwriters have provided the following sentence for inclusion in this Official Statement. The Underwriters have reviewed the information in this Official Statement in accordance with, and as part of, their responsibilities to investors under the federal securities laws as applied to the facts and circumstances of this transaction, but the Underwriters do not guarantee the accuracy or completeness of such information. This Official Statement, which includes the cover page and appendices, does not constitute an offer to sell the Series 2019 Bonds in any state to any person to whom it is unlawful to make such offer in such state. No dealer, salesman or other person has been authorized to give any information or to make any representations, other than those contained in this Official Statement, in connection with the offering of the Series 2019 Bonds, and if given or made, such information or representations must not be relied upon. The information contained herein is subject to change without notice and neither the delivery of this Official Statement nor any sale hereunder at any time implies that the information contained herein is correct as of any time subsequent to its date.

THE SERIES 2019 BONDS HAVE NOT BEEN REGISTERED UNDER THE SECURITIES ACT OF 1933, AS AMENDED, IN RELIANCE UPON AN EXEMPTION CONTAINED IN SUCH ACT. THE SERIES 2019 BONDS HAVE NOT BEEN REGISTERED OR QUALIFIED UNDER THE SECURITIES LAWS OF ANY STATE. IN CONNECTION WITH THIS OFFERING THE UNDERWRITERS MAY OVER-ALLOT OR EFFECT TRANSACTIONS WHICH STABILIZE OR MAINTAIN THE MARKET PRICE OF THE SERIES 2019 BONDS OFFERED HEREBY AT A LEVEL ABOVE THAT WHICH MIGHT OTHERWISE PREVAIL IN THE OPEN MARKET. SUCH STABILIZING, IF COMMENCED, MAY BE DISCONTINUED AT ANY TIME.

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OFFICIAL STATEMENT

\$496,910,000
City and County of Honolulu
Wastewater System Revenue Bonds

\$216,565,000
Senior Series 2019A
First Bond Resolution

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\$61,995,000
Junior Series 2019B
(Taxable Refunding)
Second Bond Resolution

INTRODUCTORY STATEMENT

This Official Statement, which includes the cover page and the appendices, provides certain information in connection with the issuance by the City and County of Honolulu (the “City and County”) in the State of Hawaii of \$496,910,000 aggregate principal amount of Wastewater System Revenue Bonds (First Bond Resolution) Senior Series 2019A Bonds (the “Senior Series 2019A Bonds”), Senior Series 2019B Bonds (Refunding) (the “Senior Series 2019B Bonds”), and Senior Series 2019C Bonds (Taxable Refunding) (the “Senior Series 2019C Bonds,” and, collectively with the Senior Series 2019A Bonds and the Senior Series 2019B Bonds, the “Senior Series 2019 Bonds”), Wastewater System Revenue Bonds (Second Bond Resolution) Junior Series 2019A Bonds (Refunding) (the “Junior Series 2019A Bonds”) and Junior Series 2019B Bonds (Taxable Refunding) (the “Junior Series 2019B Bonds,” and, together with the Junior Series 2019A Bonds, the “Junior Series 2019 Bonds,” and collectively with the Senior Series 2019 Bonds, the “Series 2019 Bonds”).

The Senior Series 2019 Bonds are to be issued under and secured by the First Wastewater Revenue Bond Resolution adopted by the City Council of the City and County on November 10, 1998 (as amended and supplemented from time to time, the “First Bond Resolution”), and the Senior Series 2019 Resolution adopted by the City Council of the City and County on October 9, 2019 (the “Senior Series 2019 Resolution”). The Senior Series 2019 Bonds are also to be issued under a certain Bond Series Certificate of the City and County dated the date of this Official Statement, relating to the Senior Series 2019 Bonds (the “Senior Series 2019 Certificate”).

The Junior Series 2019 Bonds are to be issued under and secured by the Second Wastewater Revenue Bond Resolution adopted by the City Council of the City and County on November 10, 1998 (as amended and supplemented from time to time, the “Second Bond Resolution”), and the Junior Series 2019 Resolution adopted by the City Council of the City and County on October 9, 2019 (the “Junior Series 2019 Resolution,” and, together with the Senior Series 2019 Resolution, the “Series 2019 Resolutions”). The Junior Series 2019 Bonds are also to be issued under a certain Bond Series Certificate of the City and County dated the date of this Official Statement, relating to the Junior Series 2019 Bonds (the “Junior Series 2019 Certificate,” and, together with the Senior Series 2019 Certificate, the “Series 2019 Certificates”). The First Bond Resolution and the Second Bond Resolution are each individually referred to as a “Bond Resolution” and collectively referred to as the “Bond Resolutions.”

The capitalization of any word below not conventionally capitalized indicates that such word is defined in the First Bond Resolution, the Second Bond Resolution, the Senior Series 2019 Certificate, the Junior Series 2019 Certificate or this Official Statement. A glossary of certain terms used in this Official Statement and the First Bond Resolution and the Second Bond Resolution is set forth in Appendix B under “Certain Definitions.”

Proceeds of the Senior Series 2019A Bonds will be used to: (i) fund the cost of certain additions and improvements to the wastewater system owned by the City and County and (ii) pay the costs of issuance of such Senior Series 2019A Bonds. Proceeds of the Senior Series 2019B Bonds will be used to: (i) current and advance

refund certain outstanding bonds previously issued by the City and County pursuant to the First Bond Resolution and (ii) pay the costs of issuance of such Senior Series 2019B Bonds. Proceeds of the Senior Series 2019C Bonds will be used to: (i) advance refund certain outstanding bonds previously issued by the City and County pursuant to the First Bond Resolution and (ii) pay the costs of issuance of such Senior Series 2019C Bonds.

Proceeds of the Junior Series 2019A Bonds will be used to: (i) current and advance refund certain outstanding bonds previously issued by the City and County pursuant to the Second Bond Resolution and (ii) pay the costs of issuance of such Junior Series 2019A Bonds. Proceeds of the Junior Series 2019B Bonds will be used to: (i) advance refund certain outstanding bonds previously issued by the City and County pursuant to the Second Bond Resolution and (ii) pay the costs of issuance of such Junior Series 2019B Bonds. See “ESTIMATED SOURCES AND USES OF PROCEEDS” below.

The Senior Series 2019 Bonds are the 28th, 29th and 30th series of bonds (each a “Series” and collectively the “Senior Bonds”) issued under and pursuant to the First Bond Resolution and will be secured by and entitled to the protection of the First Bond Resolution on a parity with all Senior Bonds heretofore issued and to be hereafter issued under and pursuant to the First Bond Resolution. The Senior Series 2019 Bonds are limited special obligations of the City and County payable solely from, and secured solely by a pledge of, the Net Revenues, proceeds of Senior Series 2019 Bonds held or set aside under the First Bond Resolution, and certain funds and accounts established by the First Bond Resolution. Such pledge of the Net Revenues is senior and superior to any pledge of the Net Revenues to secure obligations issued under any other bond resolution, including the Second Bond Resolution.

The Junior Series 2019 Bonds are the 12th and 13th series of bonds (each a “Series” and collectively the “Junior Bonds”) issued under and pursuant to the Second Bond Resolution and will be secured by and entitled to the protection of the Second Bond Resolution on a parity with all Junior Bonds heretofore issued and to be hereafter issued under and pursuant to the Second Bond Resolution. The Senior Bonds and the Junior Bonds are collectively referred to as the “Bonds.” The Junior Series 2019 Bonds are limited special obligations of the City and County payable solely from, and secured solely by a pledge of, the Net Revenues, proceeds of Junior Series 2019 Bonds held or set aside under the Second Bond Resolution, and certain funds and accounts established by the Second Bond Resolution. Such pledge of the Net Revenues is junior in priority to the pledge of the Net Revenues to secure obligations issued under the First Bond Resolution, but senior in priority to the pledge of the Net Revenues to secure the Department’s outstanding State Revolving Fund loans and any reimbursable general obligation bonds issued by the City and County for the benefit of the Department. See “SECURITY FOR THE BONDS.”

As of June 30, 2019, the City and County had \$1,836,835,000 principal amount of Senior Bonds outstanding. As of such date, the City and County also had \$307,565,645 principal amount of Junior Bonds outstanding. The Junior Bonds, together with the Department’s outstanding State Revolving Fund loans, are considered to be Subordinate Obligations for purposes of the Bond Resolution. All outstanding Senior Bonds and Subordinate Obligations are fixed rate obligations. See “DEBT AND FINANCIAL POLICIES AND INDEBTEDNESS – Indebtedness” herein.

The Department of Environmental Services (the “Department”) was created on July 1, 1998, as part of a city-wide reorganization. The Department has the full and complete authority to manage, control and operate the Wastewater System owned or managed and under the jurisdiction of the City and County, including all materials, supplies, equipment and properties used or useful in connection with the Wastewater System. Previously, the Department of Wastewater Management, created by a City Charter change effective July 1, 1993, provided operation, maintenance, planning, design and construction of wastewater facilities in the City and County. The City Charter and Chapter 49, Hawaii Revised Statutes (the “Act”) empower the City and County to issue revenue bonds in its name for the purposes of the Wastewater System. See “THE CITY AND COUNTY AND THE DEPARTMENT.”

As of June 30, 2019, the Wastewater System serviced approximately 147,000 separate accounts and a population of approximately 780,000, which is approximately 80% of the total population of the City and County based on the 2018 data book. The service area covers nearly 600 square miles. The customer base includes the residential population, business and industrial users, and other users located in the service area. Of the approximately 147,000 accounts, approximately 138,000 are residential, which generate approximately 67% of the total revenue from sewer service charges, and the remaining approximately 9,000 accounts are non-residential,

which generate approximately 33% of the total revenue from sewer service charges. In the Fiscal Year ended June 30, 2019, the average total volume of wastewater processed by the Wastewater System was approximately 110.0 million gallons per day (“MGD”), a decrease of 3.6% from Fiscal Year 2018. See “THE WASTEWATER SYSTEM.”

In June 2011, the City and County adopted a rate ordinance providing for increases in wastewater rates and future rate adjustments over the six-year period from July 1, 2011, through June 30, 2017. In May 2012, the City and County adopted Ordinance No. 12-7 providing for structural, but revenue neutral, changes to wastewater rates effective from July 1, 2012 through June 30, 2017. See “CERTAIN FINANCIAL OPERATIONS AND OTHER INFORMATION AND STATISTICS—Rates and Charges.”

The Department is currently undertaking a capital improvement program adopted by the Department and approved by the City Council (the “2020-2024 Capital Improvement Program”). The 2020-2024 Capital Improvement Program is projected to cost approximately \$2.6 billion (in inflated dollars, *i.e.*, adjusted from 2017 dollars) and is being undertaken for the purposes, among others, of meeting the requirements of certain consent decrees, permits, or administrative orders entered into by the Department with Federal and State regulatory bodies and reliably serving projected growth in the number of customers served by the Wastewater System. The 2020-2024 Capital Improvement Program is part of the Department’s 2016-2035 twenty-year capital improvement program (the “2016-2035 Capital Improvement Program”). The 2016-2035 Capital Improvement Program is projected to cost approximately \$9.1 billion (in inflated dollars) and has been undertaken for the same basic purposes as the 2020-2024 Capital Improvement Program. The cost of the 2016-2035 Capital Improvement Program, including the 2020-2024 Capital Improvement Program, is expected to be financed primarily from: (i) proceeds of Senior Bonds and Subordinate Obligations (including Clean Water State Revolving Fund loans) previously issued and currently available, (ii) proceeds of additional Senior or Junior Bonds (including the Senior Series 2019A Bonds) and Subordinate Obligations (currently expected to consist primarily of Clean Water State Revolving Fund loans) to be issued in the future, (iii) Net Revenues of the Wastewater System, and (iv) Wastewater System Facilities Charges. See “CAPITAL IMPROVEMENT PROGRAM.”

Pursuant to the Act and the City Charter, the City Council has the power to impose, prescribe and collect rates, rentals, fees or charges for the use and services of, and the facilities furnished by, the Wastewater System so that the Wastewater System will be and remain self-sustaining. The rates, rentals, fees or charges imposed and prescribed are required to produce revenues which will be at least sufficient to pay debt service on all revenue bonds issued for the purposes of the Wastewater System, including the Senior Bonds and the Subordinate Obligations, including Junior Bonds, to provide reserves therefor, to pay the costs of operation, maintenance and repair of the Wastewater System, and to carry out the covenants of all resolutions authorizing the issuance of revenue bonds for the purposes of the Wastewater System, including the First Bond Resolution and the Second Bond Resolution. The rates and charges fixed and imposed by the City Council are not subject to approval by any federal or state regulatory bodies. See discussion under “HISTORICAL AND PROJECTED REVENUES, EXPENSES AND COVERAGES.”

ESTIMATED SOURCES AND USES OF PROCEEDS

The estimated sources and uses of the proceeds of the Series 2019 Bonds are set forth below:

Sources of Funds:	Senior Series 2019A	Senior Series 2019B	Senior Series 2019C	Junior Series 2019A	Junior Series 2019B	Total
Par Amount of Bonds	\$216,565,000.00	\$174,710,000.00	\$20,810,000.00	\$22,830,000.00	\$61,995,000.00	\$496,910,000.00
Plus Original Issue Premium	34,235,438.80	36,857,820.10	-	2,083,254.90	-	73,176,513.80
Release of Debt Service Reserve Funds	-	7,702,245.29	2,335,296.13	3,157,947.56	21,498,671.19	34,694,160.17
Total Sources of Funds...	\$250,800,438.80	\$219,270,065.39	\$23,145,296.13	\$28,071,202.46	\$83,493,671.19	\$604,780,673.97
Uses of Funds:						
Project Fund.....	\$250,000,000.00	\$-	\$-	\$-	-	\$250,000,000.00
Deposit to Escrow Fund ¹		218,628,221.70	23,075,705.67	28,009,676.02	83,306,540.14	353,020,143.53
Underwriters' Discount.....	797,394.70	638,503.14	65,271.14	60,263.46	184,780.05	1,746,212.49
Additional Proceeds	3,044.10	3,340.55	4,319.32	1,262.98	2,351.00	14,317.95
Total Uses of Funds.....	\$250,800,438.80	\$219,270,065.39	\$23,145,296.13	\$28,071,202.46	\$83,493,671.19	\$604,780,673.97

¹ Proceeds of Senior Series 2019B Bonds, Senior Series 2019C Bonds, Junior Series 2019A Bonds and Junior Series 2019B Bonds to be deposited into the Escrow Fund for application as described under "Plan of Refunding" below.

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Plan of Refunding

The Senior Series 2019B Bonds are being issued to refund certain of the City and County’s outstanding Senior Bonds previously issued by the City and County under the First Bond Resolution, as identified in the table below (the “Senior 2019B Refunded Bonds”). The Senior Series 2019C Bonds are being issued to refund certain of the City and County’s outstanding Senior Bonds previously issued by the City and County under the First Bond Resolution, as identified in the table below (the “Senior 2019C Refunded Bonds” and, together with the Senior 2019B Refunded Bonds, the “Senior Refunded Bonds”). Subject to final determination in connection with the pricing of the Senior Series 2019 Bonds, the City and County has identified the bonds set forth below as potential refunding candidates under the First Bond Resolution. The Senior Refunded Bonds were selected based upon market conditions, bond structure or other factors at the time of pricing and the City and County’s internal policies for issuing refunding bonds. These policies generally require, among other things, that the refunding generate sufficient present value savings, net of costs of issuance, as a percentage of the principal amount of bonds refunded and that the debt service savings from each maturity to be refunded be analyzed on an individual basis. Selection of the Senior Refunded Bonds is at the sole and absolute discretion of the City and County.

Senior Refunded Bonds

<u>Series</u>	<u>Maturity (July 1)</u>	<u>Principal Amount Refunded</u>	<u>Interest Rate</u>	<u>CUSIP[†]</u>
2009A	2020	\$2,295,000	5.000%	438701D35
2009A	2021	830,000	5.000	438701D43
2009A	2021	1,565,000	3.500	438701PH1
2009A	2025	2,895,000	4.000	438701L77
2009A	2028	3,335,000	4.250	438701PR9
2009C	2039	29,430,000	6.339	438701PU2
2010B	2021	6,000,000	4.373	438701RB2
2010B	2040	102,720,000	6.121	438701RH9
2012B	2025	3,830,000	4.000	438701TP9
2012B	2026	5,460,000	4.000	438701TQ7
2012B	2028	5,855,000	4.000	438701TS3
2012B	2030	6,275,000	4.000	438701TU8
2015C	2026	5,380,000	3.518	438701WX8
2015C	2027	5,580,000	3.668	438701WY6
2015C	2028	5,395,000	3.868	438701WZ3
2015C	2029	5,620,000	4.018	438701XA7
2015C	2030	5,845,000	4.118	438701XB5
2015C	2035	21,650,000	4.411	438701XD1
2015C	2045	5,620,000	4.561	438701XC3

The Junior Series 2019A Bonds are being issued to refund certain of the City and County’s outstanding Junior Bonds previously issued by the City and County under the Second Bond Resolution, as identified in the table below (the “Junior 2019A Refunded Bonds”). The Junior Series 2019B Bonds are being issued to refund certain of the City and County’s outstanding Junior Bonds previously issued by the City and County under the Second Bond Resolution, as identified in the table below (the “Junior 2019B Refunded Bonds”, and together with the Junior 2019A Refunded Bonds, the “Junior Refunded Bonds,” and, together with the Senior Refunded Bonds, the “Refunded Bonds”). Subject to final determination in connection with the pricing of the Junior Series 2019 Bonds, the City and County has identified the bonds set forth below as potential refunding candidates under the Second Bond Resolution. The Junior Refunded Bonds were selected based upon market conditions, bond structure or other factors at the time of pricing and the City and County’s internal policies for issuing refunding

[†] Copyright, American Bankers Association. CUSIP data provided by Standard & Poor’s CUSIP Service Bureau, a division of The McGraw-Hill Companies, Inc. This data is not intended to create a database and does not serve in any way as a substitute for the CUSIP Service. CUSIP numbers are provided for convenience of reference only. Neither the City and County nor the Underwriters takes any responsibility for the accuracy of such numbers.

bonds. These policies generally require, among other things, that the refunding generate sufficient present value savings, net of costs of issuance, as a percentage of the principal amount of bonds refunded and that the debt service savings from each maturity to be refunded be analyzed on an individual basis. Selection of the Junior Refunded Bonds is at the sole and absolute discretion of the City and County.

Junior Refunded Bonds

<u>Series</u>	<u>Maturity (July 1)</u>	<u>Principal Amount Refunded</u>	<u>Interest Rate</u>	<u>CUSIP[†]</u>
2009A	2020	\$14,740,000	5.000%	438701NR1
2010A	2024	18,370,000	5.000	438701QV9
2010A	2025	19,215,000	4.000	438701QW7
2010A	2027	21,080,000	4.500	438701QY3
2010A	2028	21,990,000	4.000	438701QZ0
2015B	2026	1,420,000	3.768	438701XQ2
2015B	2027	1,470,000	3.918	438701XR0
2015B	2028	1,535,000	4.118	438701XS8
2015B	2029	1,595,000	4.268	438701XT6
2015B	2030	1,665,000	4.368	438701XU3
2015B	2031	1,750,000	4.468	438701XV1
2015B	2032	1,825,000	4.568	438701XW9

Upon the issuance of the Series 2019 Bonds, a portion of the proceeds of the Senior Series 2019B Bonds, Senior Series 2019C Bonds, Junior Series 2019A Bonds and Junior Series 2019B Bonds will be deposited into four escrow funds (the “Senior 2019B Refunding Escrow Fund,” the “Senior 2019C Refunding Escrow Fund,” the “Junior 2019A Refunding Escrow Fund” and the “Junior 2019B Refunding Escrow Fund” respectively, and collectively, the “Escrow Funds”) to be established with U.S. Bank, N.A., as escrow agent (the “Escrow Agent”), for the respective purposes of (i) effecting the refunding of the Senior 2019B Refunded Bonds, (ii) effecting the refunding of the Senior 2019C Refunded Bonds, (iii) effecting the refunding of the Junior 2019A Refunded Bonds, and (iv) effecting the refunding of the Junior 2019B Refunded Bonds.

Pending application, moneys deposited in the Escrow Funds will be invested in noncallable direct obligations of the United States (the “Escrow Securities”) which, together with cash held uninvested in the Escrow Funds, will be sufficient without reinvestment to pay, and will be applied (i) in the case of the Senior 2019B Refunding Escrow Fund, to pay the principal of, premium, if any, and interest on and redemption price of the Senior 2019B Refunded Bonds, (ii) in the case of the Senior 2019C Refunding Escrow Fund, to pay the principal of, premium, if any, and interest on and redemption price of the Senior 2019C Refunded Bonds, (iii) in the case of the Junior 2019A Refunding Escrow Fund, to pay the principal of, premium, if any, and interest on and redemption price of the Junior 2019A Refunded Bonds, and (iv) in the case of the Junior 2019B Refunding Escrow Fund, to pay the principal of, premium, if any, and interest on and redemption price of the Junior 2019B Refunded Bonds. The maturing principal of and interest on the Escrow Securities and cash held in the Escrow Funds, in the amounts needed for the foregoing purposes, are pledged solely for the benefit of the holders of the Senior 2019B Refunded Bonds, the Senior 2019C Refunded Bonds, the Junior 2019A Refunded Bonds and the Junior 2019B Refunded Bonds, respectively. The Escrow Securities will be purchased from the Treasury Department of the United States of America or in the open market, in either case at interest rates and prices which will cause the yield thereon, computed in accordance with the provisions of Section 148 of the Internal Revenue Code of 1986, as amended (the “Code”), not to exceed the applicable yield permitted by such provisions. See “VERIFICATION.”

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THE SERIES 2019 BONDS

General

The Senior Series 2019 Bonds and the Junior Series 2019 Bonds are secured by and issued pursuant to separate resolutions, issuance certificates and other proceedings. The summary set forth below is presented in a consolidated manner for convenience.

The Series 2019 Bonds will be dated as of the date of their issuance and will bear interest at the rates and mature on the dates and in the principal amounts set forth on the inside cover page of this Official Statement. The Series 2019 Bonds will be issued in minimum denominations of \$5,000 principal amount. Interest will accrue on the Series 2019 Bonds from the date of their issuance and will be due and payable semiannually on January 1 and July 1 of each year, commencing July 1, 2020 for the Senior Series 2019A Bonds and January 1, 2020 for the Senior Series 2019B Bonds, the Senior Series 2019C Bonds, the Junior Series 2019A Bonds and the Junior Series 2019B Bonds. The Director of Budget and Fiscal Services of the City and County will serve as the initial Paying Agent for the Series 2019 Bonds.

The Series 2019 Bonds, when issued, will be registered in the name of Cede & Co., as nominee of The Depository Trust Company (“DTC”), New York, New York, which will act as securities depository for the Series 2019 Bonds (together with its successors, if any, in such capacity, the “Securities Depository”). So long as the Securities Depository or its nominee is the registered owner of the Series 2019 Bonds, individual purchases of the Series 2019 Bonds will be made in book-entry form only (the “Book-Entry System”), in authorized denominations of \$5,000 or integral multiples thereof. Purchasers will not receive certificates representing their interest in the Series 2019 Bonds. Principal of and interest on the Series 2019 Bonds will be paid to the Securities Depository, which will in turn remit such principal and interest to its Direct Participants (as defined in Appendix C), for subsequent distribution to Indirect Participants (as defined in Appendix C) and Beneficial Owners (as defined in Appendix C) of the Series 2019 Bonds. The Series 2019 Bonds may be transferred or exchanged in the manner described in the Series 2019 Bonds and as referenced in accompanying proceedings of the City and County. See Appendix C, “Book-Entry System” for certain information regarding the Book-Entry System maintained by DTC, as Security Depository.

Mandatory Redemption

The Series 2019 Bonds identified below are also subject to redemption prior to maturity, in part, on each of the dates and in the respective principal amounts set forth below, at a Redemption Price of 100% of the principal amount thereof, plus accrued interest to the date of redemption, from mandatory Sinking Fund Installments which are required to be made in amounts sufficient to redeem the principal amount of Series 2019 Bonds specified for July 1 of each of the years shown below:

**Senior Series 2019A Bonds
Maturing July 1, 2044
bearing interest at 4.000% per annum**

<u>Year (July 1)</u>	<u>Principal Amount</u>
2040	\$4,510,000
2041	4,745,000
2042	4,990,000
2043	5,240,000
2044*	5,515,000

* Final Maturity.

**Senior Series 2019A Bonds
Maturing July 1, 2044
bearing interest at 5.000% per annum**

Year (July 1)	Principal Amount
2040	\$3,960,000
2041	4,115,000
2042	4,270,000
2043	4,445,000
2044*	4,610,000

* Final Maturity.

**Senior Series 2019A Bonds
Maturing July 1, 2049
bearing interest at 4.000% per annum**

Year (July 1)	Principal Amount
2045	\$5,535,000
2046	5,765,000
2047	5,995,000
2048	6,230,000
2049*	6,475,000

* Final Maturity.

**Senior Series 2019A Bonds
Maturing July 1, 2049
bearing interest at 5.000% per annum**

Year (July 1)	Principal Amount
2045	\$5,055,000
2046	5,310,000
2047	5,585,000
2048	5,880,000
2049*	6,195,000

* Final Maturity.

Optional Redemption

The Senior Series 2019A Bonds, the Senior Series 2019B Bonds and the Junior Series 2019A Bonds maturing on or after July 1, 2030 are subject to redemption prior to the stated maturity thereof at the option of the City and County on or after July 1, 2029, in whole or in part at any time, from any maturities selected by the City and County (in its sole discretion), at a redemption price equal to 100% of the principal amount of the Senior Series 2019A Bonds, Senior Series 2019B Bonds and the Junior Series 2019A Bonds or portions thereof to be redeemed plus accrued interest to the date of redemption.

The Senior Series 2019C Bonds maturing on or after July 1, 2030 are subject to redemption prior to the stated maturity thereof at the option of the City and County on or after July 1, 2029, in whole or in part at any time, from any maturities selected by the City and County (in its sole discretion), at a redemption price equal to

100% of the principal amount of the Senior Series 2019C Bonds or portions thereof to be redeemed plus accrued interest to the date of redemption.

The Senior Series 2019C Bonds and the Junior Series 2019B Bonds are also subject to redemption at any time prior to July 1, 2029, at the option of the City and County, in whole or in part (and if in part on a pro rata basis), on any date, at a redemption price (the "Make-Whole Premium") equal to the greater of:

(1) 100% of the principal amount of the Senior Series 2019C Bonds or the Junior Series 2019B Bonds to be redeemed; or

(2) the sum of the present value of the remaining scheduled payments of principal and interest to the maturity date of such Senior Series 2019C Bonds or the Junior Series 2019B Bonds to be redeemed, not including any portion of those payments of interest accrued and unpaid as of the date on which such Senior Series 2019C Bonds or such Junior Series 2019B Bonds are to be redeemed, discounted to the date on which such Senior Series 2019C Bonds or such Junior Series 2019B Bonds are to be redeemed on a semi-annual basis, assuming a 360-day year consisting of twelve 30-day months, at the Comparable Treasury Yield (defined below) plus 15 basis points with respect to the Senior Series 2019C Bonds or the Junior Series 2019B Bonds;

plus, in each case, accrued interest on such Senior Series 2019C Bonds or such Junior Series 2019B Bonds to be redeemed to the redemption date.

For purposes of calculating the Make-Whole Premium with respect to the optional make-whole redemption of the Senior Series 2019C Bonds or the Junior Series 2019B Bonds, the following terms shall have the following meanings:

"Calculation Agent" means a commercial bank or an investment banking institution of national standing that is a primary dealer of United States government securities in the United States and designated by the State (which may be one of the institutions that served as underwriters for the Senior Series 2019C Bonds and the Junior Series 2019B Bonds).

"Comparable Treasury Issue" means the United States Treasury security selected by the Calculation Agent as having a maturity comparable to the remaining term to maturity of the Senior Series 2019C Bonds or the Junior Series 2019B Bonds being redeemed that would be utilized, at the time of selection and in accordance with customary financial practice, in pricing new issues of corporate debt securities of comparable maturity to the remaining term to maturity of the Senior Series 2019C Bonds or the Junior Series 2019B Bonds being redeemed.

"Comparable Treasury Price" means, with respect to any date on which a Senior Series 2019C Bond or the Junior Series 2019B Bond or portion thereof is being redeemed, either: (a) the average of five Reference Treasury Dealer quotations for the date fixed for redemption, after excluding the highest and lowest such quotations or (b) if the Calculation Agent is unable to obtain five such quotations, the average of the quotations that are obtained. The quotations will be the average, as determined by the Calculation Agent, of the bid and asked prices for the Comparable Treasury Issue (expressed in each case as a percentage of principal amount) quoted in writing to the Calculation Agent, at 5:00 p.m. New York City time at least three business days but no more than 20 business days preceding the date fixed for redemption.

"Comparable Treasury Yield" means the yield that represents the weekly average yield to maturity for the preceding week appearing in the most recently published statistical release designated "H.15(519) Selected Interest Rates" under the heading "Treasury Constant Maturities," or any successor publication selected by the Calculation Agent that is published weekly by the Board of Governors of the Federal Reserve System and that establishes yields on actively traded United States Treasury securities adjusted to constant maturity, for the maturity corresponding to the remaining term to maturity of the Senior Series 2019C Bond or the Junior Series 2019B Bond being redeemed. The Comparable Treasury Yield will be determined at least three business days but no more than 20 business days preceding the date fixed for redemption. If the H.15(519) statistical release sets forth a weekly average yield for United States Treasury securities that have a constant maturity that is the same as the remaining term to maturity of the Senior Series 2019C Bonds being redeemed, then the Comparable Treasury Yield will be equal to such weekly average yield. In all other cases, the Comparable Treasury Yield will be calculated by

interpolation on a straight-line basis, between the weekly average yields on the United States Treasury securities that have a constant maturity: (i) closest to and greater than the remaining term to maturity of the Senior Series 2019C Bonds or the Junior Series 2019B Bonds being redeemed; and (ii) closest to and less than the remaining term to maturity of the Senior Series 2019C Bonds or the Junior Series 2019B Bonds being redeemed. Any weekly average yields calculated by interpolation will be rounded to the nearest 1/100th of 1%, with any figure of 1/200th of 1% or above being rounded upward. If, and only if, weekly average yields for United States Treasury securities for the preceding week are not available in the H.15(519) statistical release or any successor publication, then the Comparable Treasury Yield will be the rate of interest per annum equal to the semiannual equivalent yield to maturity of the Comparable Treasury Issue (expressed as a percentage of its principal amount) equal to the Comparable Treasury Price (each as defined herein) as of the date fixed for redemption.

“Reference Treasury Dealer” means a primary dealer of United States Government securities in the United States (which may be one of the institutions that served as underwriters for the Taxable Bonds) appointed by the State and reasonably acceptable to the Calculation Agent.

Selection for Redemption

If less than all of the Series 2019 Bonds of a series are called for redemption, the City and County will designate the maturities from which the Series 2019 Bonds of such series are to be redeemed. For so long as the Series 2019 Bonds are registered in book-entry form and DTC or a successor securities depository is the sole registered owner of such Series 2019 Bonds, if fewer than all of the Series 2019 Bonds of the same maturity and bearing the same interest rate are to be redeemed, the particular Series 2019 Bonds to be redeemed shall be selected: (i) by lot, in the case of the Senior Series 2019A Bonds, the Senior Series 2019B Bonds and the Junior Series 2019A Bonds, and (ii) on a pro rata pass-through distribution of principal basis in accordance with DTC procedures, in the case of the Senior Series 2019C Bonds and the Junior Series 2019B Bonds; provided that, so long as the Series 2019 Bonds are held in book-entry form, the selection for redemption of the Senior Series 2019C Bonds or the Junior Series 2019B Bonds will be made in accordance with the operational arrangements of DTC then in effect, and if the DTC operational arrangements do not allow for redemption on a pro rata pass-through distribution of principal basis, all Senior Series 2019C Bonds and all Junior Series 2019B Bonds will be selected for redemption in accordance with DTC procedures by lot; provided further that any such redemption must be performed such that all Bonds remaining outstanding will be in authorized denominations. See Appendix C, “Book-Entry System.”

In connection with any repayment of principal of the Senior Series 2019C Bonds or the Junior Series 2019B Bonds, including payments of scheduled mandatory sinking fund payments, the Registrar will direct DTC to make a pass-through distribution of principal to the owners of the Senior Series 2019C Bonds or the Junior Series 2019B Bonds. A form of Pro Rata Pass-Through Distribution of Principal Notice will be provided to the Registrar that includes a table of factors reflecting the relevant scheduled redemption payments, based on the current schedule of mandatory sinking fund payments, which is subject to change upon certain optional redemptions, and DTC's currently applicable procedures, which are subject to change.

For purposes of calculating pro rata pass-through distributions of principal, “pro rata” means, for any amount of principal or interest to be paid, the application of a fraction to such amounts where (a) the numerator is equal to the amount due to the owners of the Senior Series 2019C Bonds or the Junior Series 2019B Bonds on a payment date and (b) the denominator is equal to the total original par amount of the Senior Series 2019C Bonds or the Junior Series 2019B Bonds.

It is the City and County's intent that redemption allocations made by DTC with respect to the Senior Series 2019C Bonds and the Junior Series 2019B Bonds be made on a pro rata pass-through distribution of principal basis as described above. However, neither the City and County nor the Underwriters can provide any assurance that DTC, DTC's direct and indirect participants, or any other intermediary will allocate the redemption of these Bonds on such basis.

If the Series 2019 Bonds are not registered in book-entry form and if fewer than all of the Series 2019 Bonds of the same maturity and bearing the same interest rate are to be redeemed, the particular Senior Series 2019C Bonds or the Junior Series 2019B Bonds of such maturity and bearing such interest rate to be redeemed will be selected on a pro rata basis, and the particular Senior Series 2019A Bonds, Senior Series 2019B Bonds or Junior Series 2019A Bonds of such maturity and bearing such interest rate to be redeemed will be selected by lot, provided

that any such redemption must be performed such that all Series 2019 Bonds remaining outstanding will be in authorized denominations.

Notice of Redemption

Notice of redemption of any Series 2019 Bond is required to be mailed not less than 30 days prior to the redemption date to the holder of such Series 2019 Bond at its address as it appears on the registry books kept pursuant to the provisions of the Bond Resolution. Notice of redemption of Series 2019 Bonds will be given by the Paying Agent.

Each notice of redemption is required to state: (i) the title of the Series 2019 Bonds to be redeemed, the subseries designation thereof (if any), the redemption date, the place or places of redemption and the redemption price payable upon such redemption; (ii) if less than all the Series 2019 Bonds are to be redeemed, the distinctive number of the Series 2019 Bonds to be redeemed, (iii) that the interest on the Series 2019 Bonds, or on the principal amount thereof to be redeemed, designated for redemption in such notice shall cease to accrue from and after such redemption date; and (iv) that on such date there will become due and payable on each such Series 2019 Bond the principal amount thereof to be redeemed at the then applicable redemption price and the interest accrued on such principal amount to the redemption date. Each notice of redemption mailed to the holder of a Series 2019 Bond to be redeemed must, if less than the entire principal sum thereof is to be redeemed, also state the principal amount thereof to be redeemed and, if less than the entire principal sum of a Series 2019 Bond all of the principal of which matures on the same day is called for redemption, that such Series 2019 Bond must be surrendered to the Paying Agent in exchange for the payment of the principal amount thereof to be redeemed and the issuance of a new Series 2019 Bond or Bonds equaling in principal amount that portion of the principal sum not to be redeemed of the Series 2019 Bond to be surrendered.

Any notice of optional redemption may state that such redemption may be conditional upon the receipt by the Paying Agent on the date fixed for redemption of moneys sufficient to pay in full the redemption price of the Series 2019 Bonds proposed to be redeemed. If the notice contains such condition, and moneys sufficient to pay in full the redemption price of the Series 2019 Bonds proposed to be redeemed shall not be received on or prior to the date fixed for redemption, such notice of redemption shall be null and void and of no force and effect, the City and County shall not redeem or be obligated to redeem any Series 2019 Bonds, and the Paying Agent at the City and County's direction shall give notice, in the same manner as notice of redemption is given, that moneys sufficient to pay in full the redemption price of the Series 2019 Bonds proposed to be redeemed were not received on or prior to the date fixed for redemption and such redemption did not occur. In the event of the failure to redeem, all Series 2019 Bonds surrendered for redemption shall be promptly returned to the holder or holders by the Paying Agent.

For so long as a book-entry only system is in effect with respect to the Series 2019 Bonds, notice of redemption, or notice of rescission of any conditional notice of redemption, of Series 2019 Bonds to be redeemed is to be mailed by the Paying Agent to the Securities Depository or its nominee. Any failure of the Securities Depository or of its nominee, or of a direct or indirect participant, to notify a beneficial owner of Series 2019 Bonds of any redemption will not affect the sufficiency or validity of the redemption of the Series 2019 Bonds to be redeemed. See "– Book-Entry System" below for a description of the book-entry only system. Neither the City and County nor the Paying Agent can give any assurance that the Securities Depository, or direct or indirect participants, will distribute such redemption notices to the beneficial owners of the Series 2019 Bonds, or that they will do so on a timely basis.

SECURITY FOR THE BONDS

General

The Bonds issued under and pursuant to the First Bond Resolution and the Second Bond Resolution, including the Senior Series 2019 Bonds and Junior Series 2019 Bonds, respectively, are limited special obligations of the City and County. Pursuant to the respective Bond Resolutions as further described below, the Senior Bonds are equally and ratably payable and secured under the First Bond Resolution, and the Junior Bonds are equally and ratably payable and secured under the Second Bond Resolution, except that the City and County has reserved the right under each Bond Resolution to afford a particular Series of Bonds additional or different security through a Support Facility, escrow funds, or the establishment of separate funds and accounts with respect to a

particular Series of Bonds funded from sources other than the Net Revenues. As discussed further below, the Senior Series 2019 Bonds are limited special obligations of the City and County payable solely from, and secured solely by a pledge of, the Net Revenues, proceeds of Senior Series 2019 Bonds held or set aside under the First Bond Resolution, and certain funds and accounts established by the First Bond Resolution. Such pledge of the Net Revenues is senior and superior to any pledge of the Net Revenues to secure obligations issued under any other bond resolution, including the Second Bond Resolution.

The Junior Series 2019 Bonds are limited special obligations of the City and County payable solely from, and secured solely by a pledge of, the Net Revenues, proceeds of Junior Series 2019 Bonds held or set aside under the Second Bond Resolution, and certain funds and accounts established by the Second Bond Resolution. Such pledge of the Net Revenues is junior in priority to the pledge of the Net Revenues to secure obligations issued under the First Bond Resolution, but senior in priority to the pledge of the Net Revenues to secure the Department's outstanding State Revolving Fund loans and any reimbursable general obligation bonds issued by the City and County for the benefit of the Department.

Under the Bond Resolutions, Net Revenues means, with respect to any period, the Revenues during such period less amounts required to pay Operation and Maintenance Expenses. Revenues means the moneys, including any moneys collected from the City and County or any department thereof other than the Department, derived by the Department from the rates, rentals, fees and charges prescribed for the use and services of, and the facilities and commodities furnished by, the Wastewater System. Revenues include: (i) all income, receipts, profits, and other moneys derived from the furnishing or supplying of the services, facilities and commodities through the Wastewater System; (ii) all income from investments of moneys held under the Bond Resolutions except the Rebate Account, the Subordinate Obligation Account or the Reimbursable Obligation Account; (iii) all payments made by Counterparties pursuant to Interest Rate Exchange Agreements; and (iv) moneys and Investment Securities transferred from the Rate Stabilization Account to the Sewer Fund within ninety (90) days following the end of a Fiscal Year. Certain items do not constitute Revenues under the Bond Resolutions, including certain deposits subject to refund, certain contributions in-aid-of construction and assessment, impact and other similar fees imposed and collected by the City and County, income, fees, charges, receipts, profits or other moneys derived by the Department from the ownership or operation of any separate utility system, and certain gifts, grants and donations, moneys and Investment Securities transferred from the Sewer Fund to the Rate Stabilization Account within ninety (90) days following the end of a Fiscal Year, or Wastewater System Facility Charges.

The pledge of the Net Revenues for the security and payment of the Senior Bonds under the First Bond Resolution is superior to the pledge and security for Subordinate Obligations and Reimbursable Obligations authorized to be issued pursuant to the First Bond Resolution. Subordinate Obligations are obligations of the City and County that are payable from Net Revenues after payment of Senior Bonds, but before payment of Reimbursable Obligations. The City and County's outstanding Subordinate Obligations currently consist of the Junior Bonds, including the Junior Series 2019 Bonds, and State Revolving Fund loans, which are secured by Net Revenues on a basis that is junior in priority to the Junior Bonds. Reimbursable Obligations are general obligation bonds that are payable from moneys in the City and County's general fund, subject to reimbursement from Net Revenues after payment of Senior Bonds and Subordinate Obligations. As shown in Table 22 below, as of June 30, 2019, the City and County had \$517,855,607 principal amount of outstanding Subordinate Obligations (consisting of \$307,565,645 Junior Bonds and \$210,289,962 of State Revolving Fund loans) and \$620,707 of outstanding Reimbursable Obligations. The State Revolving Fund Loans are secured by a pledge of Net Revenues subordinate to the Senior Bonds and the Junior Bonds. See "DEBT AND FINANCIAL POLICIES AND INDEBTEDNESS."

The Senior Series 2019 Bonds will constitute Senior Bonds under the First Bond Resolution. The Senior Series 2019 Bonds are the 28th, 29th and 30th Series of Bonds to be issued under the First Bond Resolution. The City and County expects to issue additional Bonds under the First Bond Resolution on a parity with the Senior Series 2019 Bonds.

The Junior Series 2019 Bonds will constitute Junior Bonds under the Second Bond Resolution. The Junior Series 2019 Bonds are the 12th and 13th Series of Bonds to be issued under the Second Bond Resolution. The City and County expects to issue additional Bonds under the Second Bond Resolution on a parity with the Junior Series 2019 Bonds.

The Series 2019 Bonds are not a general or moral obligation of the State of Hawaii or any political subdivision thereof, including the City and County, and the faith and credit of the State of Hawaii or any political subdivision thereof, including the City and County, are not pledged to the payment of the principal or redemption price of or interest on the Series 2019 Bonds, and no holder of the Series 2019 Bonds shall have the right to compel the exercise of the taxing power of the State of Hawaii or any political subdivision thereof, including the City and County, in connection with any default with respect to the Series 2019 Bonds.

Funds and Accounts

The various funds and accounts established under or pledged by the Bond Resolutions, the flow of Revenues through such funds and accounts, the rights and remedies of Bondholders under the Bond Resolutions and other related matters are summarized in Appendix B, “Summary of Certain Provisions of the Bond Resolutions.”

First Bond Resolution and Senior Bonds. The City and County has established the Sewer Fund by ordinance. Revenues are deposited in the Sewer Fund. The First Bond Resolution establishes in the Sewer Fund a Debt Service Account, a Rate Stabilization Account, a Renewal and Replacement Account and a Wastewater General Account, all of which are pledged as security for the payment of debt service on all Senior Bonds subject to the terms and provisions of and the exceptions provided in the First Bond Resolution. The First Bond Resolution also establishes a Common Reserve Account in the Sewer Fund and permits the establishment in the Sewer Fund of one or more Separate Series Reserve Accounts. The Common Reserve Account is pledged as additional security for the payment of debt service on the Senior Bonds of such Series designated by the City and County to be entitled to the benefit of the Common Reserve Account. Each Separate Series Reserve Account is pledged as additional security for the payment of debt service on the Senior Bonds of such individual Series designated by the City and County to be entitled to the benefit of such Separate Series Reserve Account.

The debt service on and redemption price of the Senior Bonds are payable from the Debt Service Account in the Sewer Fund. In the event of a deficiency in the Debt Service Account, debt service on and redemption price of particular Senior Bonds are payable from the Common Reserve Account or the Separate Series Reserve Accounts, as applicable, but only if such Senior Bonds are entitled to the benefit of such reserve accounts.

It is the City and County’s practice to deposit and maintain moneys in the Sewer Fund in an amount which is reasonable and necessary for working capital and reserves. The Rate Stabilization Account is to be used to stabilize the rates and charges of the Wastewater System. The Rate Stabilization Account is to be maintained in an amount as provided in the Annual Budget and is to be funded from: (i) Revenues but only after paying the Operation and Maintenance Expenses and after transferring required amounts to other funds and accounts as provided in the First Bond Resolution, and (ii) transfers from the Wastewater General Account. In addition, federal interest subsidies received with respect to the Senior Series 2009C and 2010B Bonds, if any, will be deposited in the Rate Stabilization Account and subsequently transferred to the Sewer Fund for so long as such Bonds remain outstanding. The Renewal and Replacement Account is to be used to pay the costs of improvements to or reconstruction of the Wastewater System, repairs, major or extraordinary repairs and renewals or replacements of the Wastewater System and under certain conditions, as set forth in the First Bond Resolution, to meet deficiencies in the Debt Service Account, the Common Reserve Account, Separate Series Reserve Accounts, if any, the Subordinate Obligation Account and the Reimbursable Obligation Account, and will be maintained in an amount provided for in the Annual Budget. The Wastewater General Account may be used for any lawful purpose of the City and County, including funding of the Rate Stabilization Account, and under certain conditions, may be used to meet deficiencies in the Sewer Fund, the Common Reserve Account, Separate Series Reserve Accounts, if any, the Renewal and Replacement Account, the Rebate Account, the Subordinate Obligation Account and the Reimbursable Obligation Account.

The First Bond Resolution also establishes in the Sewer Fund a Rebate Account, a Subordinate Obligation Account and a Reimbursable Obligation Account. Such accounts are not pledged as security for the Senior Series 2019 Bonds, or any other Senior Bonds. The funds in the Subordinate Obligation Account are to be used to pay debt service on and redemption price of Subordinate Obligations, including the Junior Bonds, provide necessary debt service reserves and other reserves and pay other costs related to Subordinate Obligations. The funds in the Reimbursable Obligation Account are to reimburse the General Fund for payments of debt service on and

redemption price of Reimbursable Obligations. The funds in the Rebate Account are to be used to pay required rebates to the United States Treasury Department incurred in respect of the Bonds.

The First Bond Resolution also establishes in the Sewer Fund the Wastewater System Facility Charge Account. Wastewater System Facility Charges collected by the Department are deposited in the Wastewater System Facility Charge Account. The Wastewater System Facility Charge Account is pledged under the First Bond Resolution as security for the payment of debt service on and redemption price of the Senior Bonds. However, if any amounts are used to pay debt service on or redemption price of the Senior Bonds, the Wastewater System Facility Charge Account must be reimbursed from the Net Revenues with the priority set forth in the First Bond Resolution. The Wastewater System Facility Charges are not considered to be Revenues under the First Bond Resolution.

The City and County has also established by ordinance the Improvement Fund. The First Bond Resolution establishes in the Improvement Fund an Improvement Account and permits the establishment within the Improvement Account of one or more Series Improvements Subaccounts and one or more Series Improvement Interest Subaccounts. Proceeds of Senior Bonds issued under the First Bond Resolution are to be deposited in the Improvement Account or a Series Improvement Subaccount pending application to pay the Costs of Improvements. Proceeds of Senior Bonds issued under the First Bond Resolution which are to be used to pay capitalized interest on the Senior Bonds of a Series during the period of construction of an Improvement and for six months thereafter must be deposited in a Series Improvement Interest Subaccount. The Improvement Account, each Series Improvement Subaccount and each Series Improvement Interest Subaccount (but not the Improvement Fund) are pledged under the First Bond Resolution as security for the payment of debt service on and redemption price of the Senior Bonds.

Second Bond Resolution and Junior Bonds. The City and County has established the Sewer Fund by ordinance. Revenues are deposited in the Sewer Fund. The First Bond Resolution establishes various accounts in the Sewer Fund, none of which except the Subordinate Obligation Account is pledged as security for the payment of debt service on the Junior Bonds. Such pledge of the Subordinate Obligation Account is subject to the terms and provisions of and the exceptions provided in the First Bond Resolution and the Second Bond Resolution. Under the First Bond Resolution, the Department will, in each month, transfer from the Sewer Fund to the Subordinate Obligation Account a sufficient amount required by the Bond Resolution to pay all accrued and unpaid amounts and amounts to accrue and become payable during the succeeding calendar month which are payable from the Subordinate Obligation Account, but only after: (i) making the transfer, if any, to the Wastewater System Facility Charge Account of all moneys received as Wastewater System Facility Charges, (ii) paying or setting aside a sufficient amount to pay the Operating and Maintenance Expenses, (iii) making the transfer to the Rebate Account under the First Bond Resolution, (iv) transferring a sufficient amount to the Debt Service Account under the First Bond Resolution to pay debt service on First Resolution Obligations, (v) transferring a sufficient amount to the Common Reserve Account and each Separate Series Reserve Account under the First Bond Resolution to eliminate any deficiency therein, and (vi) maintaining in the Sewer Fund a reasonable and necessary amount for working capital and operating reserves.

The Second Bond Resolution establishes in the Subordinate Obligation Account a Debt Service Subaccount. The Debt Service Subaccount is pledged as security for the payment of debt service on all Junior Bonds subject to the terms and provisions of and the exceptions provided in the Second Bond Resolution. The Second Bond Resolution also establishes a Common Reserve Subaccount in the Subordinate Obligation Account and permits the establishment in the Subordinate Obligation Account of one or more Separate Series Reserve Subaccounts. The Common Reserve Subaccount is pledged as additional security for the payment of debt service on the Junior Bonds of such Series designated by the City and County to be entitled to the benefit of the Common Reserve Subaccount. Each Separate Series Reserve Subaccount is pledged as additional security for the payment of debt service on the Junior Bonds of such individual Series designated by the City and County to be entitled to the benefit of such Separate Series Reserve Subaccount.

The debt service on and redemption price of the Junior Bonds are payable from the Debt Service Subaccount in the Subordinate Obligation Account. In the event of a deficiency in the Debt Service Subaccount, the debt service on and redemption price of particular Junior Bonds are payable from the Common Reserve Subaccount or the Separate Series Reserve Subaccounts, as applicable, but only if such Junior Bonds are entitled to the benefit of such Reserve Subaccounts.

Under the First Bond Resolution, moneys deposited and retained in the Sewer Fund may be maintained in an amount which is reasonable and necessary for working capital and reserves. The First Bond Resolution establishes, among other accounts, the Rate Stabilization Account, the Renewal and Replacement Account and the Wastewater General Account. Such accounts are not pledged as security for the payment of debt service on and redemption price of the Junior Bonds. However, moneys in such accounts may be transferred to the Subordinate Obligation Account on the terms and conditions as provided in the First Bond Resolution. The Rate Stabilization Account is to be used to stabilize the rates and charges of the Wastewater System. The Rate Stabilization Account is to be maintained in an amount as provided in the Annual Budget and is to be funded as provided in the Annual Budget from (i) the Revenues but only after paying the Operation and Maintenance Expenses and after transferring required amounts to other funds and accounts as provided in the First Bond Resolution, and (ii) transfers from the Wastewater General Account. The Renewal and Replacement Account is to be used to pay the costs of improvements to or reconstruction of the Wastewater System, repairs, major or extraordinary repairs and renewals or replacements of the Wastewater System and under certain conditions, as set forth in the Second Bond Resolution, to meet deficiencies in the Debt Service Subaccount, the Common Reserve Account, Separate Series Reserve Accounts, if any, the Subordinate Obligation Account, including the Debt Service Subaccount, the Common Reserve Subaccount and all Separate Series Subaccounts, and the Reimbursable Obligation Account, and will be maintained in an amount provided for in the Annual Budget. The Wastewater General Account may be used for any lawful purpose of the City and County, including funding of the Rate Stabilization Account, and under certain conditions, may be used to meet deficiencies in the Sewer Fund, the Common Reserve Account, Separate Series Reserve Accounts, if any, the Renewal and Replacement Account, the Rebate Account, the Subordinate Obligation Account and the Reimbursable Obligation Account.

The Second Bond Resolution also establishes in the Subordinate Obligation Account a Rebate Subaccount and a Third Lien Obligation Subaccount. Such accounts are not pledged as security for the Junior Series 2019 Bonds, or any other Junior Bonds. The funds in the Third Lien Obligation Subaccount are to be used to pay debt service on and redemption price of Third Lien Obligations, provide necessary debt service reserves and other reserves and pay other costs related to Third Lien Obligations. The funds in the Rebate Subaccount are to be used to pay required rebates to the United States Treasury Department incurred in respect of the Junior Bonds.

The First Bond Resolution also establishes in the Sewer Fund, the Wastewater System Facility Charge Account. Wastewater System Facility Charges collected by the Department are deposited in the Wastewater System Facility Charge Account. The Wastewater System Facility Charge Account is pledged under the First Bond Resolution as security for the payment of debt service on and redemption price of the First Resolution Obligations but not for the Junior Bonds. If any amounts are used to pay the debt service on or redemption price of First Resolution Obligations, the Wastewater System Facility Charge Account must be reimbursed from the Net Revenues with the priority set forth in the First Bond Resolution. The Wastewater System Facility Charges are not considered to be Revenues under the First Bond Resolution.

The City and County has also established by ordinance the Improvement Fund. The Second Bond Resolution establishes in the Improvement Fund an Improvement Second Account and permits the establishment within the Improvement Second Account of one or more Series Improvement Second Subaccounts and one or more Series Improvement Second Interest Subaccounts. Proceeds of Junior Bonds issued under the Second Bond Resolution are to be deposited in the Improvement Second Account or a Series Improvement Second Subaccount pending application to pay the Costs of Improvements. Proceeds of Junior Bonds issued under the Second Bond Resolution which are to be used to pay capitalized interest on the Junior Bonds of a Series during the period of construction of an Improvement and for six months thereafter must be deposited in a Series Improvement Second Interest Subaccount. The Improvement Second Account, each Series Improvement Second Subaccount and each Series Improvement Second Interest Subaccount (but not the Improvement Fund) are pledged under the Second Bond Resolution as security for the payment of debt service on and redemption price of the Junior Bonds.

Reserve Accounts

The First Bond Resolution and the Second Bond Resolution establish a Common Reserve Account and a Common Reserve Subaccount, respectively (and collectively, the “Common Reserves” or individually each a “Common Reserve”) and authorize the establishment of Separate Series Reserve Accounts and Separate Series Reserve Subaccounts, respectively (and collectively, the “Separate Series Reserves”) for Bonds that are not entitled to the benefit of the Common Reserves. The Common Reserve Account (for Senior Bonds) and the Common Reserve Subaccount (for Junior Bonds) secure all applicable outstanding Senior Bonds and Junior Bonds except for

\$194,775,000 principal amount of Senior Bonds issued in 2010 (the “Senior Series 2010 Bonds”), \$165,640,000 principal amount of Senior Bonds issued in 2011 (the “Senior Series 2011 Bonds”), and \$260,185,000 principal amount of Senior Bonds issued in 2012 (the “Senior Series 2012 Bonds”) each of which is secured by applicable Separate Series Reserves. The \$560,655,000 principal amount of Senior Bonds issued in 2015 (the “Senior Series 2015 Bonds”), \$418,550,000 principal amount of Senior Bonds issued in 2016 (the “Senior Series 2016 Bonds”), \$252,520,000 principal amount of Senior Bonds issued in 2017 (the “Senior Series 2017 Bonds”), \$273,530,000 principal amount of Senior Bonds issued in 2018 (the “Senior Series 2018 Bonds”), \$138,275,000 principal amount of Junior Bonds issued in 2015 (the “Junior Series 2015 Bonds”), \$29,605,000 principal amount of Junior Bonds issued in 2016 (the “Junior Series 2016 Bonds”) and \$51,215,000 principal amount of Junior Bonds issued in 2018 (the “Junior Series 2018 Bonds”) are not secured by either a Common Reserve Account, a Common Reserve Subaccount or a Separate Series Reserve Account. As of January 1, 2019, the cash balances in the Common Reserves and Separate Series Reserves were as set forth in the following table:

<u>Reserve Accounts</u>	<u>Cash Balance</u>
<i>Common Reserve Account:</i>	
Senior Bonds	\$22,899,942
<i>Common Reserve Subaccount:</i>	
Junior Bonds	\$24,656,619
<i>Separate Series Reserve Accounts:</i>	
Senior Series 2010 Bonds	\$ 6,244,493
Senior Series 2011 Bonds	5,003,403
Senior Series 2012 Bonds	3,599,559
Total Reserve Funds	\$62,404,016

No Series 2019 Bonds will be secured by either Common Reserve or any Separate Series Reserves. Due to the amount of Bonds to be refunded and reduction in debt service associated with Outstanding Bonds, the Department will release \$7,379,467.21 from the Common Reserve Subaccount for the Senior Bonds, \$24,656,618.75 from the Common Reserve Subaccount for the Junior Bonds, and \$2,658,074.21 from the Separate Series Reserve Account of the Senior Series 2010B Bonds.

Common Reserve Account and Separate Series Reserve Accounts with Respect to the Senior Bonds

Common Reserve Account. Under the First Bond Resolution, the City and County may designate one or more Series of Bonds to be entitled to the benefit of the Common Reserve Account. No Senior Series 2019 Bonds will be entitled to the benefit of the Common Reserve Account.

The moneys held in the Common Reserve Account are to be used to pay debt service on the Senior Bonds entitled to the benefit of the Common Reserve Account in the event of a deficiency in the Debt Service Account to pay such debt service. The Common Reserve Account is to be maintained in an amount not less than the Common Reserve Account Requirement. The Common Reserve Account Requirement is an amount that is equal to the greatest amount of Aggregate Debt Service for the then current or any future Fiscal Year on all Outstanding Senior Bonds entitled to the benefit of the Common Reserve Account; provided, however, that if upon the issuance of a Series of Senior Bonds entitled to the benefit of the Common Reserve Account, such amount would require moneys credited to the Common Reserve Account from the proceeds of such Senior Bonds in an amount in excess of the maximum amount permitted under the Code, the Common Reserve Account Requirement will then be the Common Reserve Account Requirement immediately preceding the issuance of such Senior Bonds and the maximum amount permitted under the Code to be deposited from the proceeds of such Senior Bonds, as certified by an Authorized Officer. The First Bond Resolution provides that the Aggregate Debt Service is to be computed with respect to each Variable Rate Bond entitled to the benefit of the Common Reserve Account by using the Assumed Long-Term Fixed Rate.

Separate Series Reserve Accounts. The First Bond Resolution permits the establishment of a Separate Series Reserve Account to provide additional security for the Senior Bonds of a Series which is not entitled to the benefit of the Common Reserve Account. In the event of a deficiency in the Debt Service Account to pay debt service on the Senior Bonds of a Series entitled to the benefit of a Separate Series Reserve Account, the amounts held in such Separate Series Reserve Account are to be used exclusively to pay such debt service. The amount to be maintained in any such Separate Series Reserve Account for a Series of Senior Bonds is to be

determined at the time such Senior Bonds are authorized or sold. The credit quality of a Support Facility to be deposited in any Separate Series Reserve Account for a Series of Senior Bonds is also to be determined at the time such Senior Bonds are authorized or sold.

The Senior Series 2010 Bonds, Senior Series 2011 Bonds, and the Senior Series 2012 Bonds are each secured by a Separate Series Reserve Account established for such Series of Senior Bonds. The amount required to be maintained in each of these accounts is equal to 50% of the greatest annual Debt Service payable during any Fiscal Year with respect to each such outstanding Series of Senior Bonds.

No Senior Series 2019 Bonds will be secured by a Separate Series Reserve Account.

Transfers to Reserve Accounts. The First Bond Resolution requires that in each month, after paying and setting aside an amount sufficient to pay the Operation and Maintenance Expenses for such month, and after transferring to the Debt Service Account an amount sufficient to pay debt service on the Senior Bonds to accrue in such month, moneys in the Sewer Fund are to be transferred pro rata to the Common Reserve Account and each Separate Series Reserve Account in such amounts as are required so that the balances in the Common Reserve Account and each Separate Series Reserve Account are equal to their respective requirements, or at the election of the Department, so that at least one-sixth of any deficiency in the Common Reserve Account or each Separate Series Reserve Account is eliminated.

Common Reserve Subaccount with Respect to the Junior Bonds

Common Reserve Subaccount. The Second Bond Resolution establishes a Common Reserve Subaccount and authorizes the establishment of a Separate Series Reserve Subaccount for Junior Bonds of any Series not entitled to the benefit of the Common Reserve Subaccount. The Common Reserve Subaccount secures all Junior Bonds previously issued and currently outstanding under the Second Bond Resolution. Under the Second Bond Resolution, the City and County may designate one or more Series of Junior Bonds to be entitled to the benefit of the Common Reserve Subaccount.

No Junior Series 2019 Bonds will be secured by the Common Reserve Subaccount or Separate Series Reserve Subaccounts. The moneys held in the Common Reserve Subaccount are to be used to pay debt service on the Junior Bonds entitled to the benefit of the Common Reserve Subaccount in the event of a deficiency in the Debt Service Subaccount to pay such debt service. The Common Reserve Subaccount is to be maintained in an amount not less than the Common Reserve Subaccount Requirement. The Common Reserve Subaccount Requirement is an amount that is equal to the greatest amount of Aggregate Debt Service for the then current or any future Fiscal Year on all Outstanding Junior Bonds entitled to the benefit of the Common Reserve Subaccount; provided, however, that if upon the issuance of a Series of Junior Bonds entitled to the benefit of the Common Reserve Subaccount, such amount would require moneys credited to the Common Reserve Subaccount from the proceeds of such Junior Bonds in an amount in excess of the maximum amount permitted under the Code, the Common Reserve Subaccount Requirement will then be the Common Reserve Subaccount Requirement immediately preceding the issuance of such Junior Bonds and the maximum amount permitted under the Code to be deposited from the proceeds of such Junior Bonds, as certified by an Authorized Officer. The Second Bond Resolution provides that the Aggregate Debt Service is to be computed with respect to each Variable Rate Bond entitled to the benefit of the Common Reserve Subaccount by using the Assumed Long-Term Fixed Rate.

Separate Series Reserve Accounts. The Second Bond Resolution permits the establishment of a Separate Series Reserve Account to provide additional security for the Junior Bonds of a Series which is not entitled to the benefit of the Common Reserve Account.

No Junior Series 2019 Bonds will be secured by a Separate Series Reserve Account.

Transfers to Reserve Subaccounts. The Second Bond Resolution requires that in each month, after transferring to the Debt Service Subaccount an amount sufficient to pay debt service on the Bonds to accrue in such month, moneys in the Subordinate Obligation Account are to be transferred pro rata to the Common Reserve Subaccount and each Separate Series Reserve Subaccount in such amounts as are required so that the balances in the Common Reserve Subaccount and each Separate Series Reserve Subaccount are equal to their respective

requirements, or at the election of the Department, so that at least one-sixth of any deficiency in the Common Reserve Subaccount or each Separate Series Reserve Subaccount is eliminated.

Reserve Account Replacement Securities

In lieu of cash or securities, the First Bond Resolution and the Second Bond Resolution permit the Department to satisfy the Common Reserve Account Requirement and the Common Reserve Subaccount Requirement, respectively (in either case the “Applicable Common Reserve Requirement”), in part or in whole by causing to be deposited into the applicable Common Reserve a Support Facility (which may be an irrevocable letter of credit, surety bond, loan agreement, standby bond purchase agreement, or other agreement facility or insurance or guaranty agreement issued by a bank or banks, or other financial institution or institutions, or any combination of the foregoing) in an amount equal to the difference between the Applicable Common Reserve Requirement and the sums then on deposit in the applicable Common Reserve, if any. The Support Facility must be payable (upon the giving of notice as required thereunder) on or before any interest payment date on which moneys will be required to be withdrawn from the applicable Common Reserve and applied to the payment of principal or redemption price of or interest on any Senior Bonds or Junior Bonds, as applicable, and such withdrawal cannot be met by amounts on deposit in the applicable Common Reserve or provided from any other available Fund under the First Resolution or the Second Bond Resolution, as applicable. Any Support Facility deposited in a Common Reserve or the long-term debt of the issuer of any Support Facility deposited in a Common Reserve must, in each case, be rated in the highest rating category by each Rating Agency and, if rated by A.M. Best & Company, must also be rated in the highest rating category by A.M. Best & Company. In the event any Support Facility deposited in a Common Reserve or the long-term debt of the issuer of any Support Facility deposited in a Common Reserve falls below the second highest rating category of each Rating Agency, and A.M. Best & Company, if rated by A.M. Best & Company, the City and County must, within 120 days, obtain a new Support Facility which, or which the long-term debt of the issuer of such new Support Facility, is rated in the highest rating category of such rating agencies; provided, however, that if the new Support Facility is not obtained within 120 days, the City and County must deposit in the applicable Common Reserve Net Revenues in the amount provided in the First Bond Resolution or the Second Bond Resolution, as applicable. If a disbursement is made pursuant to a Support Facility deposited in a Common Reserve, the City and County must: first, reinstate the full amount of such Support Facility; and second, if necessary, deposit Net Revenues in such Common Reserve in the amount of the disbursement made under such Support Facility, in either case such that the amount in such Common Reserve Account will equal the Applicable Common Reserve Requirement within a period of time not longer than would be required to restore such Common Reserve by application of moneys in the Sewer Fund as required by the applicable Bond Resolution. The City and County may at any time deposit cash or Investment Securities as replacement for one or more Support Facilities.

Rate Covenant With Respect to the Senior Bonds

The City and County is required by the First Bond Resolution, among other things, to fix, charge and collect such rates and other charges as shall be required in order that in each Fiscal Year the Net Revenues shall not be less than the Net Revenue Requirement for such Fiscal Year. The Net Revenue Requirement means with respect to any Fiscal Year or any period, an amount equal to the greater of: (i) the sum of (a) the Aggregate Debt Service in such Fiscal Year or such period and (b) the Required Deposits for such Fiscal Year or such period; or (ii) 1.20 times the Aggregate Debt Service in such Fiscal Year plus 1.00 times the aggregate Support Facility Reimbursement Obligations outstanding as of the end of such Fiscal Year. Net Revenues means, with respect to any period, the Revenues during such period less amounts required to pay Operation and Maintenance Expenses. Aggregate Debt Service means, for any period and as of any date of computation, the sum of the amounts of Debt Service for such period with respect to all Series of Bonds. Support Facility Reimbursement Obligations are obligations of the City and County to directly reimburse the Support Facility Provider of a Support Facility for amounts paid thereunder or a Counterparty under an Interest Rate Exchange Agreement for amounts paid, whether or not such obligation to reimburse is evidenced by a promissory note or similar instrument.

Failure by the City and County to comply with the foregoing rate covenant in any Fiscal Year will not constitute an Event of Default under the First Bond Resolution so long as the City and County complies with the provisions of the First Bond Resolution described below. Prior to the end of each Fiscal Year the Director of Environmental Services or the Director of Budget and Fiscal Services if requested by the Director of Environmental Services is required by the First Bond Resolution to complete a review of the financial condition of the Department for the purpose of estimating whether the Net Revenues for such Fiscal Year and for the next succeeding Fiscal Year will be sufficient to comply with the foregoing rate covenant and to make a written certification with respect to

compliance or noncompliance. Such review is to take into consideration the completion of any uncompleted Improvements and the issuance of future Series of Senior Bonds if necessary to finance the completion of such Improvements. Such written certification is to set forth a reasonably detailed statement of the actual and estimated Revenues, Operation and Maintenance Expenses, Aggregate Debt Service, and any other estimates or assumptions upon which such determination was based, shall be filed with the City Clerk on or before July 1 in each year. If it is determined in such written certification that the Revenues may not be so sufficient, the Director of Environmental Services or the Director of Budget and Fiscal Services if requested by the Director of Environmental Services must forthwith make a study for the purpose of determining a schedule of fees, rates and charges which, in the opinion of the Director of Environmental Services or the Director of Budget and Fiscal Services, will cause sufficient Revenues to be collected in the following Fiscal Year to comply with such rate covenant, or the Director of Environmental Services or the Director of Budget and Fiscal Services may elect to cause the Consulting Engineer to make such a study and render such certification. The City Council, as promptly as practicable but no later than 120 days following such determination by the Director of Environmental Services or the Director of Budget and Fiscal Services, or receipt of the Consulting Engineer's recommendation, is required to adopt and place in effect a schedule of fees, rates and charges as so determined or recommended. See "CERTAIN FINANCIAL, OPERATING AND OTHER INFORMATION AND STATISTICS – Rates and Charges" for current sewer charges, "HISTORICAL AND PROJECTED REVENUES, EXPENSES AND COVERAGES" for a discussion of the Department's projected rates, revenues and expenses, and "THE CITY AND COUNTY AND THE DEPARTMENT – Purpose and Powers" for a discussion of the rate making powers of the City Council.

Rate Covenant With Respect to the Junior Bonds

The City and County is required by the Second Bond Resolution, among other things, to fix, charge and collect such rates and other charges as shall be required in order that in each Fiscal Year the Net Revenues shall not be less than the Net Revenue Requirement for such Fiscal Year. The Net Revenue Requirement means with respect to any Fiscal Year or any period, an amount equal to the greater of: (i) the sum of (a) the Aggregate Debt Service under the First Bond Resolution and the Aggregate Debt Service in such Fiscal Year or such period and (b) the Required Deposits for such Fiscal Year or such period; or (ii) 1.10 times the Aggregate Debt Service (as defined in the First Bond Resolution) under the First Bond Resolution and 1.10 times the Aggregate Debt Service in such Fiscal Year or such period plus 1.00 times the aggregate Support Facility Reimbursement Obligations outstanding as of the end of such Fiscal Year or such period. Net Revenues means, with respect to any period, the Revenues during such period less amounts required to pay Operation and Maintenance Expenses. Required Deposits means, for any period: (i) the Required Deposits under the First Bond Resolution exclusive of transfers from the Sewer Fund to the Subordinate Obligation Account; and (ii) the amounts, if any, required: (a) to be paid into the Rebate Subaccount, the Common Reserve Subaccount, each Separate Series Reserve Subaccount, and the Third Lien Obligation Subaccount, and (b) to pay Support Facility Reimbursement Obligations. Required Deposits under the First Bond Resolution means, for any period, the amounts, if any, required: (i) to be paid into the Common Reserve Account, each Separate Series Reserve Account, the Subordinate Obligation Account and the Reimbursable Obligation Account under the First Bond Resolution; and (ii) to pay Support Facility Reimbursement Obligations under the First Bond Resolution. Aggregate Debt Service means, for any period and as of any date of computation, the sum of the amounts of Debt Service for such period with respect to all Series of Junior Bonds or all First Resolution Obligations (which include the Senior Bonds), as applicable. Support Facility Reimbursement Obligations are obligations of the City and County to directly reimburse the Support Facility Provider of a Support Facility for amounts paid thereunder or a Counterparty under an Interest Rate Exchange Agreement for amounts paid, whether or not such obligation to reimburse is evidenced by a promissory note or similar instrument.

Failure by the City and County to comply with the foregoing rate covenant in any Fiscal Year will not constitute an Event of Default under the Second Bond Resolution so long as the provisions of the Second Bond Resolution described below are complied with. Prior to the end of each Fiscal Year the Director of Environmental Services or the Director of Budget and Fiscal Services if requested by the Director of Environmental Services is required by the Second Bond Resolution to complete a review of the financial condition of the Department for the purpose of estimating whether the Net Revenues for such Fiscal Year and for the next succeeding Fiscal Year will be sufficient to comply with the foregoing rate covenant and to make a written certification with respect to compliance or noncompliance. Such review is to take into consideration the completion of any uncompleted Improvements and the issuance of future Series of Junior Bonds if necessary to finance the completion of such Improvements. Such written certification is to set forth a reasonably detailed statement of the actual and estimated Revenues, Operation and Maintenance Expenses, Aggregate Debt Service, and any other estimates or assumptions upon which such determination was based, shall be filed with the City Clerk on or before July 1 in each year. If it is

determined in such written certification that the Revenues may not be so sufficient, the Director of Environmental Services or the Director of Budget and Fiscal Services if requested by the Director of Environmental Services must forthwith make a study for the purpose of determining a schedule of fees, rates and charges which, in the opinion of the Director of Environmental Services or the Director of Budget and Fiscal Services, will cause sufficient Revenues to be collected in the following Fiscal Year to comply with such rate covenant, or the Director of Environmental Services or the Director of Budget and Fiscal Services may elect to cause the Consulting Engineer to make such a study and render such certification. The City Council, as promptly as practicable but no later than 120 days following such determination by the Director of Environmental Services or the Director of Budget and Fiscal Services, or receipt of the Consulting Engineer's recommendation, is required to adopt and place in effect a schedule of fees, rates and charges as so determined or recommended. See "CERTAIN FINANCIAL, OPERATING AND OTHER INFORMATION AND STATISTICS – Rates and Charges" for current sewer charges, "HISTORICAL AND PROJECTED REVENUES, EXPENSES AND COVERAGES" for a discussion of the Department's projected rates, revenues and expenses, and "THE CITY AND COUNTY AND THE DEPARTMENT – Purpose and Powers" for a discussion of the rate making powers of the City Council.

Additional Bonds and Refunding Bonds Under the First Bond Resolution

The First Bond Resolution permits the issuance of additional Series of Senior Bonds (exclusive of refunding Bonds) on a parity with the Senior Bonds then Outstanding ("Additional Senior Bonds") for any lawful use or purpose relating to the Wastewater System, including, without limitation, payment of all or a portion of the Costs of Improvements, but only upon compliance as to each such Series with the conditions set forth in the First Bond Resolution. The Senior Series 2019 Bonds are being issued as Additional Senior Bonds under the First Bond Resolution and their issuance is subject to compliance with such conditions, which include delivery to the Director of Budget and Fiscal Services of the following documents or moneys or securities:

1. A written certificate of the City and County stating the amount required to be in the Common Reserve Account after issuance of the Senior Bonds then to be issued and that the amounts deposited will not be less than the Common Reserve Account Requirement.

2. A written certificate of the City and County stating the amount required to be in the Separate Series Reserve Account established for the Senior Bonds of such Series after issuance of the Senior Bonds then to be issued and that the amounts deposited will not be less than the Separate Series Reserve Account Requirement for the Senior Bonds of such Series.

3. Either:

(I) a written certificate of the City and County based: (i) on audited figures or (ii) to the extent audited figures are not available, on figures taken by an independent certified public accountant from the Department's books and records, showing that the Net Revenues for: (a) the most recent Fiscal Year, or (b) any consecutive 12-month period out of 24 months immediately preceding the month in which such Bonds are issued were not less than 1.20 times the maximum Aggregate Debt Service on all Senior Bonds then Outstanding and on the proposed Series of Senior Bonds in any Fiscal Year plus 1.00 times the aggregate Support Facility Reimbursement Obligations outstanding as of the date of the written certificate of the City and County; or

(II) a written certificate of the City and County or Certificate of the Consulting Engineer that the Net Revenues to be derived in each of the five (5) Fiscal Years following the earlier of: (i) the end of the period during which interest is capitalized or, if no interest is to be capitalized, the Fiscal Year in which the proposed Series of Senior Bonds are issued, and (ii) the date on which substantially all Improvements to be financed with the proceeds of the proposed Series of Senior Bonds are expected to commence operations, or, if the proceeds of such Series of Senior Bonds will not be used to fund the Costs of Improvements, the Fiscal Year in which the proposed Series of Senior Bonds are issued, are estimated to be not less than 1.20 times the maximum Aggregate Debt Service on all Senior Bonds then Outstanding and on the proposed Series of Senior Bonds in any such Fiscal Year, plus 1.00 times the aggregate Support Facility Reimbursement Obligations outstanding as of the date of such written certificate of the City and County or certificate of the Consulting Engineer.

In determining Net Revenues for purposes of the certificates described above, the City and County or the Consulting Engineer, as the case may be, is permitted, and in certain instances is required, to make certain adjustments as provided in the First Bond Resolution. In addition, the First Bond Resolution requires that certain other adjustments to Net Revenues derived from Debt Service on Variable Rate Bonds and debt service on Bond Anticipation Notes and short-term Subordinate Obligations and Reimbursable Obligations be made for purposes of the written certificates described above. See Appendix B, “SUMMARY OF CERTAIN PROVISIONS OF THE BOND RESOLUTIONS – The First Bond Resolution.”

Senior Bonds may be issued as variable rate bonds, fixed rate bonds, bonds providing for the right of the owner thereof to present the Senior Bond for redemption or purchase prior to maturity, zero interest rate or deep discount bonds, bonds providing for the compounding of interest, or any combination thereof. Senior Bonds may be issued or outstanding from time to time with or without credit enhancement provisions. See Appendix B, “SUMMARY OF CERTAIN PROVISIONS OF THE BOND RESOLUTIONS – The First Bond Resolution.”

The First Bond Resolution also permits the issuance of Senior Bonds (“Senior Refunding Bonds”) on a parity with the Senior Bonds then Outstanding to refund all or any part of: (i) a Series of Outstanding Senior Bonds; (ii) Subordinate Obligations; or (iii) Reimbursable Obligations. Senior Refunding Bonds may only be issued by the City and County upon satisfaction of certain conditions set forth in the First Bond Resolution.

A more detailed description of the requirements relating to the issuance of Additional Senior Bonds or Senior Refunding Bonds is set forth in Appendix B under “Additional Bonds and Refunding Bonds.”

The First Bond Resolution also permits the issuance of notes in anticipation of a Series of Senior Bonds if the City and County has theretofore authorized the issuance of such Senior Bonds. The interest on such notes (and any renewal thereof) shall be payable from the proceeds of such notes or other notes or from the proceeds of the sale of the Senior Bonds in anticipation of which such notes are issued. A more detailed description of the provisions for security for payment of such notes and other requirements relating to the issuance of notes is set forth in Appendix B under “Bond Anticipation Notes.”

Additional Bonds and Refunding Bonds Under the Second Bond Resolution

The Second Bond Resolution permits the issuance of additional Series of Junior Bonds (exclusive of refunding Bonds) on a parity with the Junior Bonds then Outstanding (“Additional Junior Bonds”) for any lawful use or purpose relating to the Wastewater System, including, without limitation, payment of all or a portion of the Costs of Improvements, but only upon compliance as to each such Series with the conditions set forth in the Second Bond Resolution. The Junior Series 2019 Bonds are being issued as Additional Junior Bonds under the Second Bond Resolution and their issuance is subject to compliance with such conditions, which include delivery to the Director of Budget and Fiscal Services of the following documents or moneys or securities:

1. A written certificate of the City and County stating the amount required to be in the Common Reserve Subaccount after issuance of the Junior Bonds then to be issued and that the amounts deposited will not be less than the Common Reserve Subaccount Requirement.
2. A written certificate of the City and County stating the amount required to be in the Separate Series Reserve Subaccount established for the Junior Bonds of such Series after issuance of the Junior Bonds then to be issued and that the amounts deposited will not be less than the Separate Series Reserve Subaccount Requirement for the Junior Bonds of such Series.
3. Either: (I) a Written Certificate of the City and County based: (i) on audited figures or (ii) to the extent audited figures are not available, on figures taken by an independent certified public accountant from the Department’s books and records, showing that the Net Revenues for: (a) the most recent Fiscal Year, or (b) any consecutive twelve (12) months’ period out of twenty four (24) months immediately preceding the month in which such Junior Bonds are issued were not less than the sum of: (1) 1.10 times the maximum Aggregate Debt Service (as defined in the First Bond Resolution) on all First Resolution Obligations issued and outstanding under and pursuant to the terms of the First Bond Resolution and the Aggregate Debt Service on all Bonds then Outstanding and on the proposed Series of Junior Bonds in any Fiscal Year and (2) 1.00 times the aggregate Support Facility Reimbursement Obligations outstanding under the First Bond Resolution and the Second Bond Resolution as of the date of the Written

Certificate of the City and County; or (II) a Written Certificate of the City and County or Certificate of the Consulting Engineer that the Net Revenues to be derived in each of the five (5) Fiscal Years following the earlier of: (i) the end of the period during which interest is capitalized or, if no interest is to be capitalized, the Fiscal Year in which the proposed Series of Junior Bonds are issued, and (ii) the date on which substantially all Improvements to be financed with the proceeds of the proposed Series of Junior Bonds are expected to commence operations, or, if the proceeds of such Series of Junior Bonds will not be used to fund the Costs of Improvements, the Fiscal Year in which the proposed Series of Junior Bonds are issued, are estimated to be not less than the sum of: (1) 1.10 times the maximum of the sum of the Aggregate Debt Service (as defined in the First Bond Resolution) on all First Resolution Obligations issued and outstanding under and pursuant to the First Bond Resolution and the Aggregate Debt Service on all Junior Bonds then Outstanding and on the proposed Series of Junior Bonds in any such Fiscal Year, and (2) 1.00 times the aggregate Support Facility Reimbursement Obligations outstanding under the First Bond Resolution and this Resolution as of the date of such Written Certificate of the City and County or certificate of the Consulting Engineer, as the case may be.

In determining Net Revenues for purposes of the certificates described above, the City and County or the Consulting Engineer, as the case may be, is permitted, and in certain instances is required, to make certain adjustments as provided in the Second Bond Resolution. In addition, the Bond Resolution requires that certain other adjustments to Net Revenues derived from Debt Service on Variable Rate Bonds and debt service on Bond Anticipation Notes and short-term Subordinate Obligations and Reimbursable Obligations be made for purposes of the written certificates described above. See Appendix B, “SUMMARY OF CERTAIN PROVISIONS OF THE BOND RESOLUTIONS – The Second Bond Resolution.”

Junior Bonds may be issued as variable rate bonds, fixed rate bonds, bonds providing for the right of the owner thereof to present the Junior Bond for redemption or purchase prior to maturity, zero interest rate or deep discount bonds, bonds providing for the compounding of interest, or any combination thereof. Junior Bonds may be issued or outstanding from time to time with or without credit enhancement provisions. See Appendix B, “SUMMARY OF CERTAIN PROVISIONS OF THE BOND RESOLUTIONS – The Second Bond Resolution.”

The Second Bond Resolution also permits the issuance of Junior Bonds (“Refunding Junior Bonds”) on a parity with the Junior Bonds then Outstanding to refund all or any part of: (i) a Series of Outstanding Bonds; (ii) Subordinate Obligations; or (iii) Reimbursable Obligations. Junior Refunding Bonds may only be issued by the City and County upon satisfaction of certain conditions set forth in the Second Bond Resolution.

A more detailed description of the requirements relating to the issuance of Additional Bonds or Junior Refunding Bonds is set forth in Appendix B under “Additional Bonds and Refunding Bonds.”

The Second Bond Resolution also permits the issuance of notes in anticipation of a Series of Junior Bonds if the City and County has theretofore authorized the issuance of such Junior Bonds. The interest on such notes (and any renewal thereof) shall be payable from the proceeds of such notes or other notes or from the proceeds of the sale of the Junior Bonds in anticipation of which such notes are issued. A more detailed description of the provisions for security for payment of such notes and other requirements relating to the issuance of notes is set forth in Appendix B under “Bond Anticipation Notes.”

THE CITY AND COUNTY AND THE DEPARTMENT

Purpose and Powers

The City and County. Honolulu, the capital and principal city of the State of Hawaii, is located on the Island of Oahu. The City and County of Honolulu includes the entire island of Oahu and a number of small outlying islands. Of the eight major islands that constitute the State of Hawaii, Oahu, with an area of 597 square miles, is smaller than the islands of Hawaii and Maui but larger than the island of Kauai, Molokai, Lanai, Niihau, and Kahoolawe. With slightly less than one-tenth of the land area in the entire State, Oahu contains nearly three fourths of the State’s resident population. According to the 2018 State of Hawaii Data Book, as of July 1, 2018, the resident population of the State was 1,420,491, and that of Oahu was 980,080, approximately 69% of the total State population. Honolulu is the seat of the State Government and is the State’s trade, finance, communication, and transportation center. Most federal establishments and personnel (both civilian and military, including substantial army, navy, air force, marine, and coast guard installations), manufacturing, major educational and scientific, and

significant agricultural activities are located on Oahu. There are no active volcanoes on the Island of Oahu. The Kīlauea Volcano which experienced several months of activity in 2018, is located on the Island of Hawaii, over 200 miles from the City and County. Reference is made to Appendix A for certain additional demographic and economic information with respect to the State and the City and County.

City Council and Mayor. The City Council is the governing body of the City and County and consists of nine members, each of whom represents a separate council district. Councilmembers are elected for a four-year term and are limited to two consecutive terms. The current terms of councilmembers for council districts I, III, V, VII and IX will expire on January 2, 2021, while the current terms of councilmembers for council districts II, IV, VI and VIII will expire on January 2, 2023. Pursuant to the City Charter, the City Council has the power, among other things: (i) to exercise the legislative power of the City and County, (ii) to enact operating and capital budget ordinances, (iii) with certain exceptions, to fix fees and charges for services rendered by the City and County, and (iv) to authorize the issuance of revenue bonds for the purpose of initiating, constructing, acquiring, extending, replacing or otherwise improving any revenue-producing facility. The Mayor is the Chief Executive Officer of the City and County. The Mayor is elected to serve a four-year term with a limitation of two consecutive full terms. The next regular mayoral election is scheduled to take place in November 2020. The Mayor exercises direct supervision over all agencies specifically identified in the City Charter and, through the Managing Director, exercises supervision over all other executive agencies of the City and County.

Department of Environmental Services. The Department was established on July 1, 1998, pursuant to a plan of reorganization which combined certain components of the Department of Wastewater Management, the department which previously administered the Wastewater System, with other administrative departments having compatible functions. The Department, among other things, is charged with the responsibility to administer the planning, design and construction of wastewater facilities, oversee the operation and maintenance of sewer lines, treatment plants and pumping stations, monitor the collection, treatment and disposal of wastewater, provide pumping of cesspools, provide solid waste processing, collection and disposal, promulgate rules and regulations as necessary to administer and enforce requirements established by law, and perform such other duties as may be required by law. The Department consists of five divisions: Wastewater Engineering and Construction, Environmental Quality, Wastewater Treatment and Disposal, Collection System Maintenance, and Refuse Collection and Disposal, plus an Office of Administrative Support. Department programs are funded from two major sources: wastewater programs are funded through the Wastewater Enterprise Sewer Fund, and solid waste programs are funded through the Solid Waste Enterprise Solid Waste Fund. Another City and County Department, the Department of Facilities Management, is responsible for planning, design, operation and maintenance of the City and County's storm water drainage system.

Power to Fix and Collect Rates and Charges. By ordinance and resolution, the City Council requires that revenues of the Wastewater System be kept in the Sewer Fund and that the wastewater program shall be self-supporting. Consistent with such requirements, the Department is budgeted as a self-sustaining enterprise for the purpose of determining costs associated with providing wastewater services. Through the adoption of the annual operating and capital budgets, the revenue requirements and wastewater rates are reviewed to determine the adequacy of revenues to meet needs. Pursuant to the Act and the City Charter, the City Council has the power to impose, prescribe and collect rates, rentals, fees or charges for the use and services of, and the facilities furnished by, the Wastewater System so that the Wastewater System will be and remain self-sustaining. The rates, rentals, fees or charges imposed and prescribed are required to produce revenues which will be at least sufficient to pay debt service on all revenue bonds issued for the purposes of the Wastewater System, including the Bonds, and including reserves therefor, to pay the costs of operation, maintenance and repair of the Wastewater System, and to carry out the covenants of all resolutions authorizing the issuance of revenue bonds for the purposes of the Wastewater System, including the First Bond Resolution and the Second Bond Resolution. The rates and charges fixed and imposed by the City Council are not subject to approval by any federal or state regulatory bodies. Rates and charges are determined on the basis of a recommendation by the Director of Environmental Services and the Mayor, subject to approval by ordinance of the City Council. An ordinance requires three readings and a public hearing for enactment by the City Council.

Department Principal Officers

The principal officers of the Department include the Director, Deputy Directors and Executive Assistant. The following are brief biographies of the Department's principal officers:

Lori M.K. Kahikina, P.E., Director. Ms. Kahikina has been serving as the Director of Environmental Services for seven years. Prior to that, she was the Director of the Department of Design and Construction for the City and County of Honolulu. She has been in public service for about 12 years, and in wastewater management for over 20 years. Ms. Kahikina has a Bachelor of Science degree in Mechanical Engineering from the University of Hawaii and a professional license in Civil Engineering from the State of Hawaii. She has held several officer positions with Hawaii Water Environment Association including Secretary, Treasurer, Vice President, President, Past President and Chair of the large annual conference. She is a current member of the University of Hawaii Engineering Dean's Council and is an active member of the Innovation and Advocacy Committees.

Timothy A. Houghton, Deputy Director. Mr. Houghton was appointed Deputy Director, Department of Environmental Services in 2013. He previously served as Executive Assistant in the Department of Environmental Services since its creation in 1998, and previously served in that role in the former Department of Wastewater Management beginning in 1993. Mr. Houghton also served as Deputy Director of the Department from July 2003 to December 2004. Mr. Houghton has a Bachelor of Arts degree from San Francisco State University and a Master of Science degree in Systems Management from the University of Southern California. Mr. Houghton was a member of the Board of Directors of the National Association of Clean Water Agencies (NACWA) having been elected in September 2008 and serving through July 2017. NACWA provides one voice for clean water and its prominence as a nationally-recognized leader in environmental policy, and close working relationship with Congress and EPA, allow it to help shape the course of environmental protection into the next century. Mr. Houghton has led the organization's Clean Water Funding workgroup; been Vice-Chair of the Clean Water Funding Task Force; and has been Vice-Chair of the Utility Management Committee.

Ross S. Tanimoto, P.E., Deputy Director. Mr. Tanimoto was appointed Deputy Director in 2007. Mr. Tanimoto has been with the Department of Environmental Services and its predecessor agencies since 1992 and has served as both the Assistant Chief, Division of Environmental Quality, and Branch Chief, Monitoring and Compliance Branch. He has a Master of Science degree in Mechanical Engineering from California State University, Long Beach, and Bachelor of Science degrees in Mechanical Engineering and Meteorology from the University of Hawaii. Mr. Tanimoto is a registered Professional Engineer in Mechanical Engineering in the States of Hawaii and California.

Michael O'Keefe, LEED AP, Executive Assistant. Mr. O'Keefe became Executive Assistant in January 2019. Prior to that, he served in various positions in the Department of Environmental Services' Refuse Division since 2008, including Assistant Division Chief. Mr. O'Keefe has a Bachelor of Arts degree in Law & Society from DeSales University, a Master's Degree in Public Administration from the University of Hawaii at Manoa, and he is a LEED Accredited Professional.

Department Work Force

The Department's current operating budget provides for 907 full-time equivalent employees in various managerial, clerical, engineering and operational positions in support of wastewater activities. This workforce, with the exception of 27 excluded and 4 exempt employees, comprises five separate bargaining units—one each for blue-collar non-supervisory employees, blue-collar supervisory employees, white-collar non-supervisory employees, white-collar supervisory employees, and professional and scientific employees.

The City and County has collective bargaining agreements with each of the Hawaii Government Employees Association ("HGEA"), which represents the bargaining units for blue-collar supervisory, white-collar non-supervisory, white-collar supervisory, and professional and scientific employees, and United Public Workers ("UPW"), which represents the bargaining unit for blue-collar non-supervisory employees. See "EMPLOYEE RELATIONS AND EMPLOYEE BENEFITS – Employee Relations."

Reference is made to "EMPLOYEE RELATIONS AND EMPLOYEE BENEFITS – Employee Benefits" herein for a discussion of health care benefits, pension benefits and other post-employment benefits for which Department employees are eligible.

THE WASTEWATER SYSTEM

Introduction

As of June 30, 2019, the Wastewater System serviced approximately 147,000 separate accounts and a population of approximately 780,000, which is approximately 80% of the total population of the City and County based on the 2018 data book. The service area covers nearly 600 square miles. The customer base includes the residential population, business and industrial users, and other users located in the service area. Of the approximately 147,000 accounts, approximately 138,000 are residential, which generate approximately 67.0% of the total revenue from sewer service charges, and the remaining approximately 9,000 accounts are non-residential, which generate approximately 33.0% of the total revenue from sewer service charges. See “CERTAIN FINANCIAL, OPERATING AND OTHER INFORMATION AND STATISTICS.” In the Fiscal Year ended June 30, 2019, the average total volume of wastewater processed by the Wastewater System was approximately 110.7 million gallons per day (“MGD”), a decrease of 2.9% from Fiscal Year 2018. The average volume of wastewater processed by private systems during the same period was approximately 3.857 MGD.

General Description of Existing Facilities

The Wastewater System serving the island of Oahu is divided into eight wastewater basins for planning purposes: East Mamala Bay, West Mamala Bay, Kailua/Kaneohe/Kahaluu, North Oahu (West), North Oahu (East), Central Oahu, Waianae and Waimanalo. Each basin is served by a major wastewater treatment plant (“WWTP”). The function of each WWTP is to treat wastewater by removing or reducing organic and inorganic materials to levels that satisfy federal and state permit requirements for the discharge of such wastewater into the ocean, streams, reservoirs or injection wells. In addition to wastewater treatment plants, the Wastewater System includes collection, pumping and other related facilities with approximately 2,100 miles of pipe, 70 pumping stations, and four preliminary treatment facilities.

A description of the wastewater basins and major facilities is as follows:

East Mamala Bay. The largest and the most densely populated basin is East Mamala Bay. Approximately 361,500 people reside in East Mamala Bay, representing approximately 39% of the resident population of the entire island. The basin is served by the Sand Island WWTP, a primary treatment plant, and the largest treatment facility in the Wastewater System in terms of wastewater flow. The treatment plant has a primary treatment capacity of 94.5 MGD, and in Fiscal Year 2019, average daily flows were 63.99 MGD.

West Mamala Bay. West Mamala Bay is the second largest basin and includes Ewa, Central Oahu as far north as Mililani, and the Halawa to Pearl City area. The population of the basin area is approximately 292,500, or 35% of the estimated population of Oahu. The basin is served by the Honouliuli WWTP, which is the second largest treatment plant in the Wastewater System, with a primary treatment design capacity of 38 MGD, including a secondary treatment design capacity of 13 MGD. In Fiscal Year 2019, average daily flows were 26.83 MGD. The secondary treated effluent is provided to a recycled water facility.

Kailua/Kaneohe/Kahaluu. The third largest basin includes the communities of Kailua, Kaneohe, and Kahaluu and surrounding areas in the eastern part of the island. The eastern portion of Oahu is also referred to as the Windward basin area. The basin area population is approximately 104,100, or approximately 12% of the island’s population. The basin is served by the Kailua Regional WWTP, the third largest treatment plant in the Wastewater System. The Kailua WWTP has a design capacity of 15.25 MGD and in Fiscal Year 2019 average daily flows were approximately 13.20 MGD.

North Oahu (East and West). Most of the North Oahu area does not have centralized sewer service though there are three small facilities, including the Kahuku WWTP (0.4 MGD capacity, secondary), the Pa‘alaa Kai WWTP (0.14 MGD capacity, secondary), and the formerly privately operated Laie Water Reclamation Facility (WRF) (0.9 MGD capacity, tertiary) which the City and County began operating on November 1, 2006. In Fiscal Year 2019, these facilities treated average daily flows of 0.13 MGD, 0.09 MGD and 0.46 MGD, respectively.

Central Oahu. Central Oahu (with a population of approximately 37,500, including military bases and the communities of Wahiawa and Whitmore Village) is served by the Wahiawa WWTP (2.5 MGD capacity, disinfected secondary). The average daily flows were 1.35 MGD in Fiscal Year 2019.

Waianae. The Waianae basin serves the west coast of the island, which has a population of approximately 44,500. The Waianae WWTP has the capacity to process 5.2 MGD at a secondary level. Average daily flows were 3.48 MGD in Fiscal Year 2019.

Waimanalo. The Waimanalo basin is served by the Waimanalo WWTP, a secondary plant with sand filtration and a capacity to process an average daily flow of 1.10 MGD. The City and County acquired ownership of the plant from the State of Hawaii in June 2014 after having operated the plant for the State since its opening. The WWTP serves the Waimanalo community, with a population of approximately 10,000. In Fiscal Year 2019 average daily flows were 0.54 MGD.

The Sand Island WWTP, the Honouliuli WWTP and the Kailua Regional WWTP are the three largest WWTPs. The remaining WWTPs provide treatment of wastewater to the rest of the island. Though the six basin areas of Central Oahu, North Oahu (East and West), Waianae, and Waimanalo comprise the majority of the geographical area of the island, the population density is much lower in comparison to the East and West Mamala Bay and the Kailua/Kaneohe/Kahaluu basin areas. The combined population of the six basin areas is less than 14% of the total population of Oahu. The total design capacity of the WWTPs in the six basin areas is approximately 10.24 MGD and the wastewater flow in Fiscal Year 2019 was 6.05 MGD. A private wastewater system provides collection and treatment for the community of Hawaii Kai. The Hawaii Kai system has an average flow of 3.857 MGD, including flows from the City and County's Kuliouou Wastewater Pumping Station ("WWPS"). The system processes about 3.5% of the average flow of the City and County's Wastewater System.

Environmental Compliance

The WWTPs and other facilities operated by the Department are governed either by National Pollutant Discharge Elimination System (NPDES) permits or by the State of Hawaii's Department of Health ("DOH") Underground Injection Control or Wastewater Management Permits or Clean Air Branch Covered Source and Non-Covered Source Permits.

The NPDES permits for the City and County's two largest treatment plants, Sand Island WWTP and Honouliuli WWTP, were reissued with effective dates of January 1, 2015, and March 30, 2014, respectively. The Sand Island WWTP permit was modified effective September 1, 2018, and the Honouliuli WWTP permit was modified effective February 1, 2019. The NPDES permit for the Kailua WWTP was reissued with an effective date of March 16, 2014. The NPDES permit for the Waianae WWTP was issued with an effective date of December 1, 2016. The City and County is contesting certain permit conditions for the Kailua WWTP and Waianae WWTP permits. The majority of these contested conditions have been stayed pending further review and consideration by DOH. DOH issued a modification to the Kailua WWTP NPDES permit on with an effective date of August 1, 2017; however, this modification is limited to modifying two conditions in the Kailua WWTP NPDES permit, and the contested conditions that are not subject to the modification remain actively contested by the City and County.

One air consent order is currently in effect until December 31, 2016 between the State of Hawaii DOH and the City and County relating to air quality at the Kailua WWTP. The consent order provides for the payment of stipulated penalties when covered and non-covered source permit requirements are not met.

In addition, during the course of operating the Wastewater System, occasional events of non-compliance with other permits, laws, and regulations occur, including:

- Wastewater spills, which are subject to reporting pursuant to the NPDES permits, the 2010 Consent Decree described below, and DOH regulations.
- Exceedance of interim effluent limits set forth in the 2010 Consent Decree for the Sand Island and Honouliuli WWTPs, which are reported monthly with the discharge monitoring reports for the plants.

- Exceedance of effluent limits set forth in the NPDES permits for the WWTPs, which are reported monthly with the discharge monitoring reports for the plants.
- On November 26, 2014, DOH issued a Notice of Apparent Violation regarding the City's pretreatment program. The City and County responded on March 6, 2015.
- No other incident of noncompliance is subject to existing or threatened enforcement.

The City and County is complying with the terms of a consent decree (the "2010 Consent Decree") entered by the United States District Court in Hawaii to settle certain previous environmental lawsuits relating to the Wastewater System. The Court retains continuing jurisdiction to enforce the 2010 Consent Decree. The following is a brief discussion of the 2010 Consent Decree and the City and County's obligations thereunder.

The 2010 Consent Decree, approved by the Environmental Protection Agency ("EPA"), DOH, the Sierra Club, Hawaii Chapter, Our Children's Earth Foundation, and Hawaii's Thousand Friends, was entered by the United States District Court in Hawaii. Three previous environmental lawsuits were dismissed. The City and County's appeal of the EPA's January 2009 final decisions denying the City and County's applications to renew its permit variances from secondary treatment for the Honouliuli and Sand Island WWTP was dismissed on February 2, 2011. The 2010 Consent Decree allows 10 years for completion of work on the collection system, 14 years for the upgrade of the Honouliuli WWTP to secondary treatment, and up to 25 years, with the possibility of a three-year extension, for the upgrade of the Sand Island WWTP to secondary treatment. The City and County is expected to incur approximately \$3.5 billion in capital costs through Fiscal Year 2020 (which coincides with the term of the collection system portion of the 2010 Consent Decree). This amount will largely be spent on the collection system, and much of it will go toward work that was already required or planned. This amount also includes a portion of the costs of treatment plant upgrades at Sand Island and Honouliuli. Costs for the treatment plant upgrades include approximately \$550 million to replace primary treatment facilities at both plants and \$1.15 billion to upgrade the plants to secondary treatment plants. As part of the settlement, the City and County paid a civil penalty in the amount of \$800,000 to the United States, and \$800,000 to the State of Hawaii. In addition, the City and County paid \$800,000 to the Sierra Club, Hawaii Chapter, Our Children's Earth Foundation, and Hawaii's Thousand Friends, to fund four supplemental environmental projects. Honouliuli WWTP and Sand Island WWTP upgrades are expected to be completed by 2024 and 2035, respectively.

The 2010 Consent Decree became effective upon its entry by the Court on December 17, 2010. The City and County also settled the nonprofit organizations' claim for their attorneys' fees and costs, for an additional payment of \$1.1 million.

The 2010 Consent Decree was amended on March 27, 2012. This amendment modified the 2010 Consent Decree to substitute construction of a Kaneohe-Kailua gravity tunnel and an associated influent pump station for the construction of a new force main between the City and County's Kaneohe pump station and its Kailua treatment plant and to eliminate requirements to proceed with and maintain storage projects in Kaneohe and Kailua.

In addition to the 2010 Consent Decree, the City and County is complying with the terms of an Administrative Order on Consent that the City and County and DOH voluntarily entered into on March 13, 2017 ("2017 Administrative Order on Consent"). The 2017 Administrative Order on Consent resolved all liability of the City and County for certain 2015 wastewater spills, and the City and County made no admissions as to fact, violation, fault, or liability in entering the 2017 Administrative Order on Consent. Pursuant to the 2017 Administrative Order on Consent, the City and County has agreed to conduct a storm water inflow detection, identification, and quantification study in certain high density or ultra-urbanized areas; to revise its Standard Operating Procedures to improve response to spill prevention alarms; to upgrade its Supervisory Control and Data Acquisition ("SCADA") system; to revise its sewage spill volume estimate procedures; and to pay a monetary penalty of \$100,000.00 to DOH, which has been paid.

See "CAPITAL IMPROVEMENT PROGRAM" below.

Projected Customer Growth

As shown in Table 1 below, the resident population in Oahu, the area served by the Wastewater System, is projected to grow modestly through 2040. The average annual population increase between 2010 and 2040 is projected to be 5,687, or roughly 0.4% annually. Consequently, population growth is not a significant driver in the 2016-2035 Capital Improvement Program.

Almost all of growth between the years 2010 and 2040 is expected to occur in East and West Mamala Bay. Of the total population growth projected to occur during this period, approximately 126,700, or 79%, is expected to take place in West Mamala Bay, and approximately 34,000, or 21%, is expected to occur in East Mamala Bay.

Table 1

**Actual and Projected Resident Population
by Basin, Oahu, 2010-2040**

<u>Basin</u>	<u>2010</u>	<u>2040</u>	<u>2010-2040 Average Annual Change</u>
Kahuku	5,657	7,933	76
Laie	7,643	8,313	22
Kailua-Kaneohe	111,025	108,574	-82
Waimanalo	10,021	10,752	24
East Mamala Bay	356,227	390,141	1,130
West Mamala Bay	292,468	419,120	4,222
Waianae	44,490	53,594	303
Wahiawa	37,504	39,563	69
North Shore	17,724	15,425	-77
Total	882,759	1,053,415	5,687

Source: City and County of Honolulu, Department of Environmental Services; City and County of Honolulu, Department of Planning and Permitting, 2015.

CAPITAL IMPROVEMENT PROGRAM

The Department staff manages and updates at least annually a long-range Capital Improvement Program (the “CIP”) to achieve several goals. The CIP is a long-range planning tool used to estimate project costs and timing of expenditures over a 20-year period, currently through 2035. The Department has developed the 2020-2024 Capital Improvement Program, the 2020-2029 Capital Improvement Program and the 2016-2035 Capital Improvement Program. The 2020-2024 Capital Improvement Program and the 2020-2029 Capital Improvement Program are part of this 20-year plan. The Department develops the CIP with the objective of providing safe and reliable facilities to process the wastewater discharge of all sewer customers throughout Oahu. CIP projects are needed to meet the requirements of the 2010 Consent Decree, for the rehabilitation of existing facilities, the expansion of capacity to accommodate growth, and the improvement of facilities and processes.

Criteria for Ranking CIP Projects by Priority

The Department considers the CIP to be a flexible tool which allows the Department staff to determine the impact of adjusting the phasing and priority of projects. As of September 1, 2019, the long-range CIP covering the 20-year period from 2016 through 2035 included a list of projects with estimated appropriations totaling approximately \$9.1 billion (in inflated dollars). Many of the projects shown in the CIP may not begin in the year specified or at all if needs change. The Department staff has developed a policy for ranking the CIP projects by

priority to determine order and timing of projects. The policy is shown in the following table, with the highest priority criteria listed first:

Table 2
Priority for CIP Projects

<u>Priority Class</u>	<u>Description</u>
I	Safety and public health – immediate
II	Protection of the environment – immediate
III	Permit and regulatory compliance – immediate
IV	Completion of ongoing projects
V	Preventive
VI	Funding requirements
VII	System expansion
VIII	Other

The rankings are intended as guidelines for CIP project planning rather than as rigid categories or criteria, not as hard and fast rules. A project considered in a low priority class may be upgraded to a high priority position in the CIP due to any number of factors. For example, if a service area is very close to reaching and surpassing the capacity of its wastewater facilities, the expansion of the system in that area rises in priority. System expansion can entail projects which affect permit and regulatory compliance, protection of the environment, or safety and public health. Through the use of these guidelines combined with analyses of funding and other resource constraints, Department staff can develop a CIP which best satisfies the needs of the Department customer base. The 2016-2035 Capital Improvement Program was developed using these CIP guidelines and constitutes the current 20-year CIP.

Classification of CIP Projects

The City and County expects to use various funding sources to finance CIP projects: (i) proceeds of Senior Bonds and Subordinate Obligations previously issued and currently available, (ii) proceeds of additional Senior Bonds or Junior Bonds (including the Series 2019 Bonds) and Subordinate Obligations (currently expected to consist primarily of State Revolving Fund loans) to be issued, (iii) the Net Revenues of the Wastewater System, and (iv) Wastewater System Facility Charges. Revenues from Wastewater System Facility Charges are intended to cover a portion of the project expenditures relating to expansion of the Wastewater System to serve future growth in the number of customers. Revenues from sewer service charges are earmarked for the expenditures resulting from rehabilitation or upgrade of the wastewater system for existing users. To effectively determine the costs to be recouped by these respective charges, the Department makes a fair estimate of the share of costs attributable to expansion and rehabilitation. Where an improvement benefits both existing and future users, the Department identifies the relative portion allocable to each. The classes of CIP projects include system expansion, system upgrade, and replacement/rehabilitation.

System expansion: Improvements which increase the design capacity of treatment, transmission, or support facilities and equipment to accommodate new or future growth. Future users would finance system expansion project costs partially through revenues from Wastewater System Facility Charges.

System upgrade: Improvements which upgrade the service level standard. For example, an upgrade to secondary treatment processes where only primary treatment processes were used. To fairly allocate costs between future and existing users, the portions of upgrade costs attributable to expansion and current use must be identified.

Replacement/rehabilitation: Improvements which replace or rehabilitate facilities serving existing development. Existing users pay the costs of replacement and rehabilitation projects through sewer service charges.

2020-2024 Capital Improvement Program

To meet the 2010 Consent Decree entered into by the Department with Federal and State regulatory bodies and to reliably serve projected growth in the number of customers served by the Wastewater System, the Department has developed and adopted the 2020-2024 Capital Improvement Program. The additions and improvements to the Wastewater System, the costs of which are to be financed in part from the proceeds of the Series 2019 Bonds, are part of the 2020-2024 Capital Improvement Program. The City and County expects to appropriate approximately \$2.6 billion (in inflated dollars) for the 2020-2024 Capital Improvement Program. A portion of these appropriations will actually be expended after the 2020-2024 period. The projected appropriations for the various CIP projects of and the expected sources of funding for the 2020-2024 Capital Improvement Program are set forth in the following tables.

Table 3

**Projected Appropriations for
2020-2024 Capital Improvement Program
(Dollars in Thousands)**

<u>Project</u>	<u>Projected Cost</u>
CIP Projects	\$2,606,193
Project Management	46,075
Capital Equipment	71,427
Total	<u>\$2,723,695</u>

Table 4

**Expected Sources of Funding for
2020-2024 Capital Improvement Program
(Dollars in Thousands)**

<u>Funding Source</u>	<u>Projected Amount</u>
Subordinate Obligations ¹	\$50,000
Facility Charges ²	56,514
Net Revenues ³	766,501
Additional Revenue Bonds	1,850,681
Total	<u>\$2,723,696</u>

¹ State Revolving Fund loan proceeds.

² Fees collected for new Wastewater System connections.

³ Cash funded CIP.

2020-2029 Capital Improvement Program

The 2020-2029 Capital Improvement Program is part of the 2016-2035 Capital Improvement Program. The City and County expects to appropriate approximately \$5.3 billion (in inflated dollars) for the 2020-2029 Capital Improvement Program. A portion of these appropriations will actually be expended after the 2020-2029 period. The projected appropriations for the various CIP projects of and the expected sources of funding for the 2020-2029 Capital Improvement Program are set forth in the following tables.

Table 5

**Projected Appropriations for
2020-2029 Capital Improvement Program
(Dollars in Thousands)**

<u>Project</u>	<u>Projected Cost</u>
CIP Projects	\$5,252,504
Project Management	92,700
Capital Equipment	146,427
Total	<u>\$5,491,631</u>

Table 6

**Expected Sources of Funding for
2020-2029 Capital Improvement Program
(Dollars in Thousands)**

<u>Funding Source</u>	<u>Projected Amount</u>
Subordinate Obligations ¹	\$100,000
Facility Charges ²	121,658
Net Revenues ³	1,666,501
Additional Revenue Bonds	3,603,472
Total	<u>\$5,491,631</u>

¹ State Revolving Fund loan proceeds.

² Fees collected for new Wastewater System connections.

³ Cash funded CIP.

2016-2035 Capital Improvement Program

The 2016-2035 Capital Improvement Program is the current twenty-year CIP the Department has undertaken. The City and County expects to appropriate approximately \$9.1 billion (in inflated dollars) for the 2016-2035 Capital Improvement Program. A portion of these appropriations will actually be expended after the 2016-2035 period. The projected appropriations for the various CIP projects of and the expected sources of funding for the 2016-2035 Capital Improvement Program are set forth in the following tables.

Table 7

**Projected Appropriations for
2016-2035 Capital Improvement Program**

<u>Project</u>	<u>Projected Cost</u>
CIP Projects	\$9,124,808
Project Management	188,032
Capital Equipment	277,644
Total	<u>\$9,586,484</u>

Table 8

**Expected Sources of Funding for
2016-2035 Capital Improvement Program
(Dollars in Thousands)**

<u>Funding Source</u>	<u>Projected Amount</u>
Subordinate Obligations ¹	\$200,000
Facility Charges ²	251,612
Net Revenues ³	3,817,692
Revenue Bonds ⁴	5,317,179
Total	<hr/> \$9,586,484

¹ State Revolving Fund loan proceeds.

² Fees collected for new Wastewater System connections.

³ Cash funded CIP.

⁴ Includes proceeds from revenue bonds previously issued and proceeds from additional revenue bonds expected to be issued in the future.

Climate Change Preparation

The Department has begun to incorporate climate change preparations into its CIP. For example, the Sand Island Wastewater Treatment Plant is being upgraded to provide secondary treatment in accordance with the City's 2010 Consent Decree. The new structures as part of this upgrade are designed to be 16 feet above sea level, which is eight feet higher than the current structures, to safeguard the plant against storm surge and sea level rise. This site improvement will be part of the initial phases of the secondary treatment project, which will be constructed in 2021 through 2026 at a cost of \$685 million. The Department also is assessing infrastructure throughout its nine wastewater basins to identify additional capital improvements to address potential risks from climate change.

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HISTORICAL AND PROJECTED REVENUES, EXPENSES AND COVERAGES

Since its initial revenue bond issue in 1998, the Department has exceeded coverage requirements under the Bond Resolution annually. Table 9 below sets forth historical revenues, expenses and debt service coverage of the Wastewater System for Fiscal Year 2018 and the Department's projection of revenues, expenses and debt service coverage of the Wastewater System for Fiscal Years 2019 through 2024.

Table 9
Historical and Projected Revenues, Expenses and Debt Service Coverages
(Dollars in Thousands)
(Fiscal Year Ending June 30)

	Actual		Projected				
	2018	2019	2020	2021	2022	2023	2024
Revenues ¹							
Sewer Service Charges ^{2,3}	\$ 445,417	\$ 451,041	\$ 453,430	\$ 481,801	\$ 511,933	\$ 548,824	\$ 593,598
Interest Earnings ⁴	11,274	7,739	21,113	5,701	4,291	3,576	3,578
BABs/RZEDBs Subsidy ⁵	5,367	5,367	4,997	4,582	3,541	2,873	2,830
Other Revenues ⁶	1,157	428	317	318	320	322	324
Total Revenues	\$ 463,216	\$ 464,575	\$ 479,857	\$ 492,402	\$ 520,086	\$ 555,595	\$ 600,330
Operating Expenses ⁷	152,017	184,863	190,101	193,749	200,933	206,607	207,452
Net Revenues	311,199	279,712	289,755	298,654	319,153	348,987	392,878
Annual Debt Service							
Senior Lien Bonds ⁸	110,052	126,004	142,372	161,828	184,776	211,785	242,587
D/S Coverage ⁹	2.83	2.22	2.04	1.85	1.73	1.65	1.62
Senior & Junior Lien Bonds ^{8,10}	144,922	160,080	176,235	195,688	218,631	245,949	276,454
D/S Coverage ⁹	2.15	1.75	1.64	1.53	1.46	1.42	1.42
Total Obligations ¹¹	170,232	185,544	202,667	222,253	245,637	261,140	303,916
D/S Coverage ⁹	1.85	1.57	1.48	1.39	1.35	1.38	1.33

¹ Does not include Wastewater System Facility Charges, which are pledged under the Bond Resolution but are not defined in the Revenues.

² Sewer service charges remained constant for Fiscal Years 2018, 2019 and 2020. Projections reflect increases of 6% in Fiscal Year 2021 and 2022, 7% in Fiscal Year 2023, 8% in Fiscal Year 2024 and 9% in Fiscal Year 2025.

³ Estimated amounts for 2019 and 2020 reflect budgeted amounts and the amounts for 2021 and beyond are based on 2018 revenue.

⁴ The interest rate used to project earnings is 1% for Fiscal Year 2021 and each fiscal year thereafter.

⁵ Includes Refundable Credits in the form of federal interest subsidies received with respect to the Series 2009B and 2009C Bonds and Subseries 2010B Bonds issued under the Bond Resolution. By current Department practice, interest subsidies are not treated as Revenues in the year of receipt. However, such Revenues are initially deposited in the Rate Stabilization Account and subsequently transferred to the Sewer Fund within 90 days following the end of a fiscal year. Such interest subsidies are then treated as Revenues in the year of the transfer.

⁶ Other revenues include overtime reimbursement from contractors for overtime inspection of construction projects. As a widely variable amount, revenue projections are maintained at a lower level beyond budgeted years.

⁷ Operating expense projections reflect anticipated operational changes. Salary costs beyond Fiscal Year 2019 are inflated at 3% and fringe benefit costs are inflated at 3% thereafter. Operating expenses do not include debt service, depreciation, or cash expenditures on capital improvements.

⁸ Includes actual debt service for outstanding Senior Bonds, estimated debt service for Series 2019 Bonds, assumes a 4.75% interest rate for additional issues of Senior Bonds. Excludes any potential refunding savings.

⁹ Minimum debt service coverage requirements are: Senior Lien Bonds – 1.2x; Senior and Junior Lien Bonds – 1.1x; Total Obligations – 1.0x. Debt service coverage for Total Obligations includes revenue from System Facility Charges. System Facility Charge revenues are shown in Table 17. The current debt policy resolution establishes debt service coverage ratio targets of 1.6x for Senior Lien Bonds and 1.25x for all Revenue Bonds.

¹⁰ Includes actual debt service for outstanding Junior Bonds. Excludes any potential refunding savings.

¹¹ Includes actual debt service for existing obligations including Senior and Junior Bonds; Reimbursable General Obligation Bonds; State Revolving Fund loans; and any other debt obligations and assumes future interest rates for Revenue Bonds as indicated above.

CERTAIN FINANCIAL, OPERATING AND OTHER INFORMATION AND STATISTICS

Management's Discussion of Financial Performance

In the period since the wastewater program became fully self-supporting in 1993, the program's financial position has been consistently strong. The change to enterprise fund status in 1998 further strengthened the position of the utility through clearer definition of enterprise assets, understanding of their current value, and clarity in responsibilities. The sale of the initial wastewater revenue bonds in 1998, accompanied by a debt and financial policy adopted by the City Council, served to insure a continuing commitment to a strong financial posture for the wastewater enterprise.

In 2011, the City and County adopted a rate ordinance providing for increases in wastewater rates and future rate adjustments for the period from July 1, 2011, through June 30, 2017. In May 2012, the City and County adopted Ordinance No. 12-7 providing for structural, but revenue neutral, changes to wastewater rates from July 1, 2012 through June 30, 2017. See "Rates and Charges" below. Revenues have been sufficient throughout the period to meet all operation and maintenance and debt service requirements, including coverage. The significant base component of the rate structure and growth in customers prevents changes in water use from having a major impact on revenues. The sewer service charge program will remain strong reflecting the high residential component of wastewater customers and the lack of any single large commercial customer.

The Wastewater System Facility Charge constitutes a minimal amount of the Wastewater System's total revenues, is solely dedicated to expansion, and is not considered when calculating debt service coverage for the Senior Bonds and Junior Bonds and Subordinate Obligations. Revenue fluctuations are due largely to the timing of major development projects. This revenue source reflects the limited growth of service area population and generally only the redistribution of that population. As such, it is not considered a major source of funds on which to base financial capability.

Efforts continue to control expenses, however, cost escalation, additional facilities, and increased operational requirements have resulted in higher operating budgets. Continuing analyses of operational procedures and increased automation opportunities are expected to help control expenses in the long term.

Net revenues have increased through Fiscal Year 2019, reflecting increased revenue from an increase in the number of customers and rate increases. The enterprise has continued to maintain a surplus throughout that period. Revenues are expected to exceed projections for Fiscal Year 2020 and the Department expects to meet or exceed revenue projections for Fiscal Year 2021. This consistency in revenues is due to the lack of reliance on a specific business or industry as a major source of revenue. The residential customer class continues to pay water/sewer bills without a significant increase in delinquencies. Further, revenue projections are conservative and have been consistently exceeded in previous years. Net revenues are being increasingly used for cash funding of capital improvement programs in current and future years. The Department is evaluating the need to recommend rate increases for Fiscal Year 2021 and beyond.

As part of the commitment to ensure the financial strength of the Wastewater System, the City Council adopted Ordinance No. 05-006 on March 31, 2005, pledging not to transfer Sewer Fund monies to the City and County's General Fund.

In the opinion of the Department, the financial position of the Wastewater System is strong, with a substantial reserve balance which provides reasonable protection against unforeseen events and financial flexibility for the future. Financial planning continues to identify the best alternative to maintain a strong financial posture while providing quality service to the customer and the community at a reasonable price. City Council and administration policies support the continuing revenue levels necessary to provide for current and future requirements.

See Appendix A, "Economic and Demographic Factors," for a discussion of certain economic conditions that could potentially impact the City and County's revenues.

Billing and Collection

All Wastewater System sewer service charge billing is done by the Board of Water Supply through inclusion as a separate portion of the water bill. The delinquency rate for this billing program (*i.e.*, the dollar amount of bills more than 60 days past due expressed as a percentage of total revenues) during fiscal years 2017, 2018, and 2019 was 1.25%, 1.18%, and 1.57%, respectively. Should bills not be paid, the authority exists, and has been exercised, to terminate water service for nonpayment of water and sewer service charges or to physically disconnect wastewater service.

In May 2012, the City and County adopted Ordinance No. 12-7 providing for structural, but revenue neutral, changes to wastewater rates effective from July 1, 2012 through June 30, 2017. Billing for non-residential customers using the new rate structure was temporarily deferred and implemented in January 2013. The approved rate changes for these customers were implemented during the deferral period using the previous structure.

Ten Largest Customers

The ten largest customers of the Wastewater System in Fiscal Year 2019 (see table below) account for 6.85% of the annual sewer service charge revenues of the system.

Table 10

**Ten Largest Customers
Fiscal Year 2019¹**

<u>Customer</u>	<u>Sewer Service Charges</u>	<u>Percentage of Sewer Service Charge Revenues</u>
Hawaii Dept. of Transportation, Honolulu International Airport	\$6,197,282.52	1.32%
University of Hawaii	5,089,323.90	1.08%
Hilton Hawaiian Village Lessee LLC	4,824,624.35	1.03%
Hawaii Public Housing Authority	4,123,126.58	0.88%
Sheraton Hotels Hawaii	3,599,921.81	0.77%
GGP Ala Moana LLC, Ala Moana Center	2,501,432.25	0.53%
Marriott International Inc.	2,016,431.96	0.43%
United Laundry Services	1,724,233.28	0.37%
Hyatt Regency Waikiki	1,052,785.84	0.22%
Queens Medical Center	1,029,442.73	0.22%
Total	<u>\$32,158,605.22</u>	<u>6.85%</u>

¹ Totals may not add due to rounding.

Certain Operating and Financial Statistics

Certain operating and financial statistics of the Department are summarized in the following tables. Unless otherwise noted, tables provided herein contain data furnished by the City and County.

Table 11**WW Customer Accounts as of June 2019**

Customer Class	Sewer Regular Monthly Charges	Cesspool Per Call	Revenue	Percent of Accounts
1 - Public Sewer				
10 - Single family/duplex	131,143	582	\$184,003,797.49	89.37%
15 - Mixed residential	213		3,519,002.18	.14%
20 - Multi-family	6,026		110,172,264.56	4.09%
25 - Mixed users	355		16,313,255.63	0.24%
WW Res Accts	137,737	582	314,008,319.86	93.85%
30 - Commercial	4,810		65,407,365.34	3.26%
40 - Hotels	233		25,986,236.50	.16%
50 - Industrial	356		1,606,293.16	.24%
61 - US Military Installation	5		628,719.46	0%
62 - US Non-military	25		511,346.88	.02%
63 - State	198		23,278,564.21	.13%
65 - City	147		1,523,654.94	.11%
70 - Agriculture	2		2,398.28	0%
80 - Religious	460		2,575,102.95	.31%
Unknown	2,835		34,817,288.09	1.92%
WW Non-res Accts	9,071		156,336,969.81	6.15%
Total WW Accts	146,808	582	470,345,289.67	100.00%

Table 12**History of New Sewer Connections by Type**

Fiscal Year Ended June 30	Single Family	Multi Family		Nonresidential	Total
	New Units	New Units	ESDUs	ESDUs	ESDUs
2011	403	739	517	79	999
2012	756	758	531	63	1,349
2013	230	1,241	838	30	1,098
2014	60	736	497	59	616
2015	156	1,325	927	149	1,233
2016	217	1,681	1,177	143	1,537
2017	300	1,935	1,354	142	1,796
2018	220	514	734	137	1,111
2019	<u>257</u>	<u>63</u>	<u>320</u>	<u>74</u>	<u>651</u>
Five year average	230	1,104	902	129	1,267
Projected annual growth					

Table 13

**Existing Sewer Users
Fiscal Year Ended June 30, 2019**

<u>Customer Classification</u>	<u>Number of Living Units</u>	<u>Number of Equivalent Single-Family Dwelling Units (ESDUs)</u>	<u>Estimated Wastewater Flow (MGD)</u>
Residential			
Single family/duplex	139,109	139,109	42.200
Multi-family residences	129,399	90,206	27.513
Less: Hawaii Kai	<u>994</u>	<u>994</u>	<u>(0.303)</u>
Total residential	269,502	229,562	69.410
Nonresidential		79,117	24.131
Infiltration/Inflow			<u>23.775</u>
Total	<u>269,502</u>	<u>308,679</u>	<u>110.7</u>

Table 14

**Historic Population Growth
Oahu, 2008 – 2017**

<u>Calendar Year</u>	<u>Resident Population</u>	<u>De facto Population¹</u>
2008	933,680	962,908
2009	943,177	972,202
2010	956,296	988,275
2011	967,287	1,000,687
2012	978,073	1,019,083
2013	986,222	1,032,103
2014	987,649	1,040,269
2015	991,339	1,049,836
2016	992,692	1,049,121
2017	986,429	1,049,470

¹ Includes visitor population.

Source: State of Hawaii, Department of Business, Economic Development & Tourism, Data Book 2018.

Table 15

Number of Equivalent Single-Family Dwelling Units (ESDUs)

<u>Fiscal Year Ending June 30</u>	<u>Single-Family Units</u>	<u>Multifamily Units</u>	<u>Commercial ESDUs</u>	<u>Total ESDUs</u>
2010	136,240	120,407	83,706	298,187
2011	136,643	121,146	84,223	299,186
2012	137,399	121,904	84,754	300,536
2013	137,629	123,145	85,892	301,934
2014	137,689	123,881	86,089	302,250
2015	137,845	125,206	87,016	303,483
2016	138,062	126,887	88,193	305,020
2017	138,362	128,822	89,152	306,816
2018	138,582	129,336	89,886	307,511
2019	138,839	129,399	90,206	308,162

Table 16

Wastewater Flows by Treatment Facility (MGD)¹

Treatment Facility²	Design Capacity³	2019 Flow⁴
Sand Island	94.50	63.99
Kahuku WWTP	0.40	.13
Honouliuli WWTP	38.00	26.83
Waimanalo WWTP	1.10	.54
Kuliouou WWPS (Hawaii Kai WWTP) ^{2,4}	--	--
Wahiawa WWTP	2.50	1.35
Kailua WWTP	15.25	13.2
Waianae WWTP	5.20	3.48
Paalaa Kai WWTP	0.14	.09
Laie WRF	0.90	.46
TOTAL:	157.99	110.07

¹ Average day annual flow (ADAF), MGD. Historic flows were 105.44 MGD for FY 2014, 105.43 MGD for FY2015, 112.70 MGD for FY 2016, 116.9 MGD for FY 2017, 114.00 for FY 2018, and 110.07 for FY 2019.

² Does not include 0.51 MGD of flow from the City and County’s Kuliouou WWPS which is treated by the Hawaii Kai WWTP, a private treatment facility.

³ ADAF estimated based on 105% of design capacity for average dry weather flow.

⁴ The Kuliouou WWPS does not provide treatment, but pumps wastewater from a Department Collection System to a private treatment plant (Hawaii Kai WWTP). Inclusion here is to show total volume of wastewater handled by the Department.

Table 17

History of Major Wastewater Revenue Sources

Fiscal Year Ended June 30	Sewer Service Charges¹	Wastewater System Facility Charges²
2009	\$250,264,958	\$1,555,359
2010	299,501,972	6,686,130
2011	343,659,885	3,224,263
2012	357,158,868	5,093,736
2013	368,124,784 ³	4,056,750
2014	384,095,528 ³	5,965,191
2015	387,957,158 ³	9,093,869
2016	411,995,764	11,519,323
2017	447,457,260	11,111,800
2018	445,417,028	4,411,314
2019	447,774,650	2,138,555

¹ Sewer service charge only - does not include connection or lateral installation charges.

² Fluctuations in Wastewater System Facility Charges are due largely to the timing of major development projects.

³ Differs from presentation in Table 9 due to the fact that information presented in this Table 17 is presented in conformance with GAAP whereas information in Table 9 is presented in accordance with definitions presented in the First Bond Resolution.

Rates and Charges

In June 2011, the City and County adopted a rate ordinance providing for increases in wastewater rates and future rate adjustments over the six-year period from July 1, 2011 through June 30, 2017. In May 2012, the City and County adopted Ordinance No. 12-7 providing for structural, but revenue neutral, changes to wastewater rates from July 1, 2012 through June 30, 2017. The schedule of rates under the Ordinance No. 12-7 is intended to allow for financial planning and projection for the Department and the City and County. Tables 18 and

19 below set forth schedules under the Ordinance No. 12-7 for residential and non-residential users, respectively, as currently effective. Table 20 sets forth a schedule of Wastewater System Facility Charge adjustments, effective July 1, 2012 (Ordinance No. 12-7) as currently effective.

Table 18
Schedule of Residential Sewer Service Charges

Effective as of July 1, 2016

Single-family and duplex dwellings served by city water system per dwelling unit per month:

- | | |
|--|---------|
| 1. Monthly base charge | \$77.55 |
| 2. Charge per 1,000 gallons of metered water consumed, the water consumed reduced by the water irrigation factor of 20%; provided that residential users who install and maintain a water meter for submetering nonsewer water shall not have the water consumed reduced by the water irrigation factor. | \$4.63 |

Single-family and duplex dwellings not served by city water system per dwelling unit per month:

\$110.89

Multiple-unit dwellings served by city water system per dwelling unit per month:

- | | |
|--|---------|
| 1. Monthly base charge | \$53.32 |
| 2. Charge per 1,000 gallons of metered water consumed, the water consumed reduced by the water irrigation factor of 20%; provided that residential users who install and maintain a water meter for submetering nonsewer water shall not have the water consumed reduced by the water irrigation factor. | \$4.63 |

Multiple-unit dwellings not served by city water

\$86.65

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Table 19

Schedule of Non-Residential Sewer Service Charges

Effective as of July 1, 2016

Domestic Strength Wastewater:

1. Metered Water Usage:

- (1) Monthly base charge per Equivalent Single Family Dwelling Unit (ESDU): \$77.55
- (2) Charge per 1,000 gallons of metered water consumed, the water consumed reduced by the water irrigation factor of 20%: \$4.63

2. Metered Wastewater Discharge:

- (1) Monthly base charge per Equivalent Single Family Dwelling Unit (ESDU): \$77.55
- (2) Charge per 1,000 gallons: \$4.63

Extra Strength Wastewater

- 1. Charge per 1,000 gallons of metered water consumed, the water consumed reduced by the water irrigation factor of 20%, use the following formula: \$4.63
 $0.857 + 0.143(SSm/200)$ multiplied by applicable rate
- 2. Charge per 1,000 gallons of wastewater discharge, use the following formula: \$4.63
 $0.857 + 0.143(SSm/200)$ multiplied by applicable rate

Table 20

Schedule of Wastewater System Facility Charges

as of July 1, 2016

- (1) Residential wastewater system facility charge per ESDU: \$6,616
- (2) Low-income housing wastewater system facility charges per ESDU: \$1,368
- (3) Nonresidential wastewater system facility charge for domestic strength wastewater per ESDU: \$6,616
- (4) Nonresidential wastewater system facility charge for extra-strength wastewater per ESDU based on the following formula:

$$\text{Wastewater System Facility Charge for extra-strength wastewater} = A + ((SSi/200) \times B)$$

where SSi = the imputed suspended solids loading, in mg/L and applicable values for terms "A" and "B" are set forth as follows:

Terms in Extra-Strength Surcharge Formula

A	B
\$5,687	\$929

DEBT AND FINANCIAL POLICIES AND INDEBTEDNESS

General

The City Council, by resolution adopted on November 10, 1998, established the Debt and Financial Policies for the Wastewater System to provide a general framework for the conduct of financial activities and has been in compliance with such policies since their adoption. Such debt and financial policies specify, among other things, that the City and County will target to maintain revenues (excluding Wastewater System Facility Charges) of 1.60 times senior revenue bond debt service and 1.25 times debt service for all revenue bonds, regardless of the priority of lien. It is expected that the City and County will adopt increases in the sewer service charges necessary to meet the debt service coverage requirements prescribed in its debt and financial policies. The debt and financial policies do not constitute an agreement with holders of Bonds, and the City and County has not undertaken any obligation to such holders or any other person to comply with such policies or to meet such targets. Since establishment of these policies in November 1998, the Wastewater System has consistently met or exceeded all policy requirements.

Investments

The City and County manages its own investment portfolio in accordance with State law and a written investment policy of the City and County. The City and County does not engage in pooled investments, speculate with investments or leverage its investments. The City and County's investment portfolio does not include any derivative or auction rate securities. The City and County's philosophy and policy in managing its investments is: first, for safety of public funds; second, for liquidity, so that funds are available when needed; and third, for yield, after the first two considerations are met. All Sewer Fund investments, except for a single investment agreement holding the common reserve subaccount for the Senior Series 2006 Bonds issued under the First Bond Resolution, are managed as part of the City and County investment pool.

Indebtedness

Table 21 sets forth the Senior Bonds and Junior Bonds of the City and County secured by the Net Revenues under the First Bond Resolution and the Second Bond Resolution as of June 30, 2019, prior to the issuance of the Senior Series 2019 Bonds and Junior Series 2019 Bonds. Table 22 sets forth the debt service requirements for the Senior Bonds and Junior Bonds, prior to the issuance of the Senior Series 2019 Bonds and Junior Series 2019 Bonds.

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Table 21

Outstanding Wastewater Revenue Bonds

<u>Senior Bonds</u>	<u>Original Issue Amount</u>	<u>Amount Outstanding as of June 30, 2019</u>
Senior Series 2009 Bonds	\$ 148,285,000	\$ 86,065,000
Senior Series 2010 Bonds	204,435,000	184,255,000
Senior Series 2011 Bonds	169,190,000	12,365,000
Senior Series 2012 Bonds	265,610,000	124,655,000
Senior Series 2015 Bonds	560,655,000	498,280,000
Senior Series 2016 Bonds	418,550,000	414,440,000
Senior Series 2017 Bonds ⁽¹⁾	252,520,000	246,995,000
Senior Series 2018 Bonds	273,530,000	269,780,000
Total		\$1,836,835,000
<u>Junior Bonds</u>		
Junior Series 1998 Bonds	\$264,152,890	\$ 2,335,645 ⁽²⁾
Junior Series 2009 Bonds	127,045,000	22,450,000
Junior Series 2010 Bonds	100,755,000	80,655,000
Junior Series 2015 Bonds	138,275,000	123,700,000
Junior Series 2016 Bonds	29,605,000	28,440,000
Junior Series 2018 Bonds	51,215,000	49,985,000
Total		\$307,565,645

⁽¹⁾ The Senior Series 2017 Bonds were purchased directly by Bank of America, N.A pursuant to a bond purchase contract by and between the City and County and Bank of America, N.A .

⁽²⁾ Represents stated initial value Capital Appreciation Bonds with a maturity value of \$6,500,000

In addition to the outstanding Senior Bonds and Junior Bonds shown above, \$210,289,962 principal amount of State Revolving Fund loans (classified as Subordinate Obligations under the Bond Resolution) and \$620,707 of Reimbursable Obligations were outstanding as of June 30, 2019. All of the outstanding Senior Bonds, Junior Bonds, State Revolving Fund loans, and Reimbursable Obligations are fixed rate obligations, and the City and County has not entered into any interest rate swap agreements or other derivative product arrangements with respect to any of these obligations.

No Obligations Subject to Mandatory Purchase or Acceleration

The City and County currently has no outstanding variable rate obligations subject to purchase by the City and County upon an event of default and no direct bank loans or other obligations subject to acceleration upon an event of default which are, in either case, secured or otherwise supported by the Net Revenues, and no privately placed energy leases. The City and County could in the future incur such obligations under certain circumstances, and such obligations may under certain circumstances be subject to payment in full prior to the payment of the Senior Bonds and the Junior Bonds. The City and County's Senior Series 2017 Bonds were issued pursuant to a private placement but are not subject to acceleration.

Table 22**Revenue Bond Debt Service Requirements
(Years Ending June 30)¹**

Fiscal Year	Debt Service on 2019 Senior Bonds	Debt Service on Outstanding Senior Bonds ²	Total Senior Debt Service	Debt Service on 2019 Junior Bonds	Debt Service on Outstanding Junior Bonds ²	Total Junior Debt Service	Other Debt Service ³	Total Debt Service ⁴
2020	\$1,319,135	\$120,052,001	\$121,371,136	\$383,465	\$31,497,977	\$31,881,442	\$23,159,389	\$176,411,967
2021	23,344,151	110,807,533	134,151,684	13,805,326	14,759,886	28,565,212	22,659,109	185,376,005
2022	27,832,413	104,570,246	132,402,658	1,930,701	29,862,909	31,793,610	22,385,877	186,582,145
2023	21,189,788	112,919,563	134,109,351	1,930,701	30,171,990	32,102,691	21,533,739	187,745,781
2024	21,194,038	112,693,211	133,887,249	1,930,701	29,875,165	31,805,866	21,446,924	187,140,039
2025	21,192,663	112,991,875	134,184,538	16,224,311	12,915,665	29,139,976	21,359,940	184,684,454
2026	27,269,673	105,619,581	132,889,254	16,226,653	12,917,165	29,143,818	21,272,687	183,305,759
2027	31,115,672	102,096,361	133,212,033	2,669,010	30,777,345	33,446,355	18,655,317	185,313,705
2028	25,703,536	107,654,943	133,358,479	18,629,014	10,947,225	29,576,239	10,882,667	173,817,385
2029	33,616,795	99,238,205	132,855,000	18,627,972	10,940,675	29,568,647	8,981,454	171,405,101
2030	25,038,378	105,193,325	130,231,703	1,825,675	10,945,675	12,771,350	8,923,768	151,926,821
2031	30,934,377	99,021,695	129,956,072	1,828,800	10,947,175	12,775,975	8,866,050	151,598,097
2032	31,892,525	98,291,624	130,184,149	1,835,475	10,944,175	12,779,650	8,041,035	151,004,834
2033	28,849,425	91,123,844	119,973,269	1,832,075	10,943,213	12,775,288	683,091	133,431,647
2034	29,322,025	90,698,462	120,020,487	-	-	-	678,102	120,698,589
2035	29,311,450	90,694,844	120,006,294	-	-	-	673,145	120,679,439
2036	33,105,650	85,103,225	118,208,875	-	-	-	-	118,208,875
2037	33,265,475	75,359,100	108,624,575	-	-	-	-	108,624,575
2038	28,868,900	66,121,250	94,990,150	-	-	-	-	94,990,150
2039	28,826,000	57,520,500	86,346,500	-	-	-	-	86,346,500
2040	28,797,900	57,525,766	86,323,666	-	-	-	-	86,323,666
2041	23,832,425	57,516,891	81,349,316	-	-	-	-	81,349,316
2042	12,955,075	57,513,378	70,468,453	-	-	-	-	70,468,453
2043	12,950,750	46,855,928	59,806,678	-	-	-	-	59,806,678
2044	12,953,275	38,361,088	51,314,363	-	-	-	-	51,314,363
2045	12,951,800	38,364,194	51,315,994	-	-	-	-	51,315,994
2046	12,954,175	38,360,219	51,314,394	-	-	-	-	51,314,394
2047	12,954,050	26,339,669	39,293,719	-	-	-	-	39,293,719
2048	12,951,475	13,239,706	26,191,181	-	-	-	-	26,191,181
2049	12,950,350	-	12,950,350	-	-	-	-	12,950,350
2050	12,954,375	-	12,954,375	-	-	-	-	12,954,375
Total	\$702,397,717	\$2,321,848,224	\$3,024,245,941	\$99,679,877	\$258,446,240	\$358,126,117	\$220,202,294	\$3,602,574,353

¹ Based on payments, not on accruals. Totals may not add in some columns due to rounding.² Excludes Debt Service on Refunded Bonds.³ Includes \$210,289,962 principal amount of State Revolving Fund loans and \$620,707 principal amount of Reimbursable General Obligation Bonds for Wastewater.⁴ Does not include expected BAB/RZEDB subsidies.

FINANCIAL STATEMENTS

The operations of the Department are accounted for in the Sewer Fund and the Wastewater System Facility Charge Account. The Sewer Fund is classified as an enterprise fund of the City and County and is currently audited as a part of the City and County's general purpose financial statements that are prepared annually.

Extracts from the financial statements of the City and County as of June 30, 2018, relating to the Sewer Fund, together with the auditor's report thereon delivered by KMH LLP, may be found at the website of the City and County at <https://www.honolulu.gov/budget/budget-cafr.html>, or may be obtained from the Department by request to the attention of the Director of Budget and Fiscal Services, City and County of Honolulu, 530 South King Street, Honolulu, Hawaii 96813. Except for such financial statements and auditor's report, the contents of the City and County's website are not part of this Official Statement and are not incorporated herein by the above reference. KMH LLP has not reviewed and has no responsibility with respect to this Official Statement.

The Bond Resolution requires the Department to maintain and keep proper books of account relating to the Wastewater System and in accordance with generally accepted accounting principles. The Bond Resolution also requires that within one hundred eighty (180) days after the end of each Fiscal Year the Department will cause such books of account to be audited by an independent certified public accountant. Such audit may be part of a comprehensive audit of the City and County if the Wastewater System in such audit is treated as an "enterprise fund" and the revenues and expenses of the Wastewater System are stated in a manner which permits identification by category of the sources and uses of the Revenues.

The following tables have been extracted from audited financial statements for fiscal years 2016 2017, and 2018 of the City and County relating to the Department. It should be noted that "Revenues" as defined in the Bond Resolution does not include Wastewater System Facility Charges.

Table 23 summarizes revenues and expenses and Table 24 provides fund balances, both reflecting enterprise accounting and consistency with GASB 34 reporting requirements.

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Table 23

Department of Environmental Services - Sewer Fund
Enterprise Fund Statement of Revenues, Expenses and Charges in Retained Earnings (Deficit)
(Dollars in Thousands)¹

	<u>2016</u>	<u>2017</u>	<u>2018</u>
Operating Revenues:			
Sewer Service Charges	\$ 411,996	\$ 447,457	\$ 450,541
Other Revenue	11,802	11,316	4,897
Total Operating Revenues	<u>423,798</u>	<u>458,773</u>	<u>455,438</u>
Operating Expenses:			
Administrative and general	\$ 48,599	\$ 44,315	\$ 48,338
Maintenance	509	410	575
Depreciation	62,384	64,012	68,546
Contractual services	20,881	21,743	20,530
Fringe benefits	20,176	27,284	29,361
Materials and supplies	13,803	14,325	14,344
Fuel and lubricants	902	752	1,106
Utilities	20,779	21,768	23,149
Total Operating Expenses	<u>\$ 188,033</u>	<u>\$ 194,609</u>	<u>\$ 205,949</u>
Operating Income	\$ 235,765	\$ 264,164	\$ 249,489
Nonoperating Revenues (Expenses):			
Interest income	\$ 3,432	\$ 7,718	\$ 14,436
Interest expense	(51,542)	(52,061)	(74,614)
Forgiveness of advance	--	--	--
Unrealized (loss) on investments	--	(2,114)	(620)
Other	2,724	5,048	4,198
Total Nonoperating Expenses	<u>\$ (45,386)</u>	<u>\$ (41,409)</u>	<u>\$ (56,600)</u>
Income before operating transfers and contributed capital	\$ 190,379	\$ 222,755	\$ 192,889
Operating Transfers Out	(13,426)	(16,199)	(18,170)
Contributed Capital	424	205	8
Change in Net Position	<u>\$ 177,377</u>	<u>\$ 206,761</u>	<u>\$ 174,727</u>
Net Assets at Beginning of Year, previously reported	<u>\$1,446,902</u>	<u>\$1,621,177</u>	<u>\$1,827,938</u>
Restatement due to Change in Accounting Principle	<u>(3,102)</u>	<u>--</u>	<u>(77,725)</u>
Net Position at Beginning of Year, as restated	<u>1,443,800</u>	<u>1,621,177</u>	<u>1,750,213</u>
Net Assets at End of Year	<u>\$1,621,177</u>	<u>\$1,827,938</u>	<u>\$1,924,940</u>

¹ Differs from presentation in Table 9 because information presented in this Table 23 is presented in conformance with GAAP whereas information in Table 9 is presented in accordance with definitions presented in the First Bond Resolution.

Table 24

**Department of Environmental Services - Sewer Fund
Enterprise Fund Balance Sheet***
(Dollars in Thousands)

<u>ASSETS</u>	<u>2016</u>	<u>2017</u>	<u>2018</u>
Current Assets:			
Cash and cash equivalents	\$ 127,856	\$ 123,233	\$ 157,181
Investments	759,729	919,358	983,106
Receivables			
Accounts	55,381	60,887	66,419
Interest	1,124	1,860	4,049
Employee advances	894	802	733
Due from other funds	325	--	--
Inventories of parts, materials and supplies at cost	15,406	15,032	13,857
Prepaid expenses	2,640	--	--
Total Current Assets	<u>\$ 963,355</u>	<u>\$ 1,121,172</u>	<u>\$ 1,225,345</u>
Capital Assets, Net:			
Land	\$ 45,839	\$ 46,025	\$ 46,033
Land improvements	3,841	7,508	7,598
Buildings and Improvements	1,137,389	1,140,510	1,357,132
Transmission and distribution system	1,749,530	1,797,655	2,100,265
Equipment and machinery	77,104	82,375	119,345
Construction work in progress	481,124	651,279	297,885
Accumulated depreciation	(685,255)	(746,893)	(815,090)
Total Capital Assets, Net	<u>\$2,809,572</u>	<u>\$2,978,459</u>	<u>\$3,113,168</u>
Restricted Assets - Investments	156,042	247,765	438,207
Other Assets	265	135	--
Total Assets	<u>\$3,929,234</u>	<u>\$4,347,531</u>	<u>\$4,776,720</u>
Deferred Outflows of Resources:			
Deferred refunding costs, net	35,887	52,652	57,325
Deferred pension costs	13,807	48,979	33,265
Deferred other postemployment benefits costs	--	--	8,779
Total Assets and Deferred Outflows	<u>\$3,978,928</u>	<u>\$4,449,162</u>	<u>\$4,876,089</u>
LIABILITIES AND FUND EQUITY (DEFICIENCY)			
Current Liabilities:			
Accounts payable	\$ 48,153	\$ 64,341	\$ 54,396
Due to other funds	13	4	356
Interest payable-current	44,627	46,647	46,553
Notes payable-current	22,066	23,587	22,670
Bonds payable-current	51,813	59,875	70,545
Accrued Payroll	1,666	1,715	1,738
Other current liabilities	499	489	502
Total Current Liabilities	<u>\$ 168,837</u>	<u>\$ 196,658</u>	<u>\$ 196,760</u>
Notes payable	230,082	229,182	206,728
Net Pension Liability	88,686	127,677	117,720
Net Other Postemployment Benefit Liability	--	--	115,525
General obligation bonds payable	784	715	651
Revenue bonds payable	1,817,024	2,012,389	2,287,667
Deferred credits and other liabilities	33,304	35,260	7,128
Total Liabilities	<u>\$2,338,717</u>	<u>\$2,601,881</u>	<u>\$2,932,179</u>
Deferred Inflows of Resources			
Deferred other postemployment benefits costs	--	--	432
Deferred Pension Costs	19,034	19,343	18,538
Total deferred inflows of resources	<u>19,034</u>	<u>19,343</u>	<u>18,970</u>
Net Assets:			
Invested in capital assets	785,313	874,926	852,641
Reserved for debt service	174,514	165,226	260,091
Unrestricted	661,350	787,786	812,208
Total net assets	<u>\$1,621,177</u>	<u>\$1,827,938</u>	<u>\$1,924,940</u>
Total liabilities and net assets	<u>\$3,978,928</u>	<u>\$4,449,162</u>	<u>\$4,876,089</u>

* Totals may not add due to rounding.

EMPLOYEE RELATIONS AND EMPLOYEE BENEFITS

Employee Relations

Article XIII of the State Constitution grants public employees in Hawaii the right to organize for the purpose of collective bargaining as provided by law. Chapter 89, Hawaii Revised Statutes, as amended, provides for 14 recognized bargaining units (“BU”s) for all public employees in the State, including City and County employees. Nine of these bargaining units represent City and County employees: BU 01 (blue-collar non-supervisory employees), BU 02 (blue-collar supervisory employees), BU 03 (white-collar non-supervisory employees), BU 04 (white-collar supervisory employees), BU 10 (institutional health and correctional workers), BU 11 (fire fighters), BU 12 (police officers), BU 13 (professional and scientific employees), and BU 14 (ocean safety and water safety officers).

Each bargaining unit designates an employee organization as the exclusive representative of all employees of the unit, which organization negotiates with the public employer. The State and the counties are required to bargain collectively with the bargaining units. Decisions by the employer representatives are determined by simple majority vote. For matters concerning BUs 01, 02, 03, 04, 10, 13 and 14, the Governor has six votes and each of the county mayors, the Chief Justice of the State Supreme Court and the board of directors of the Hawaii Health Systems Corporation has one vote if such employers have employees in the particular bargaining unit. For matters concerning BUs 11 and 12, the Governor has four votes and each of the county mayors has one vote.

In the event of an impasse, blue-collar non-supervisory employees are permitted to conduct a strike after following prescribed impasse procedures. In the case of the City and County’s other bargaining units, any impasse is required to be resolved through mediation and compulsory final and binding arbitration. Although the statute characterizes arbitration as “final and binding,” it also provides that all cost items are subject to approval by the respective legislative bodies of the State and each county. The State and the four counties must collectively approve the cost items before the cost items may take effect. If any legislative body rejects any cost item, the parties will need to return to the bargaining table. In the case of blue-collar workers, if final and binding arbitration is not agreed upon, it could result in a strike. The other bargaining units are prohibited from striking by law. Certain employees are not party to a formal labor contract including excluded management employees, elected and appointed officials, and certain contractual hires.

The status of awards for wages and health benefits of Department of Environmental Services employees for the period from July 1, 2017 to June 30, 2019 (June 30, 2021 with respect to certain bargaining units) and negotiations for the period beginning July 1, 2019 is as follows:

BU 01 (blue-collar workers): An agreement was ratified by the UPW on August 14, 2017, covering the four-year period from July 1, 2017, through June 30, 2021. The agreement provided for across the board wage adjustments of 2% on July 1, 2019, and 2% on July 1, 2020. Pursuant to a “reopener” provision in the agreement, the parties conducted further negotiations in April 2019 and reached an agreement that provides for an across the board wage adjustment of 1.2% on January 1, 2020, and 1.2% on January 1, 2021. The “reopener” agreement was ratified by UPW on April 25, 2019. On June 5, 2019, the City Council approved appropriations for these wage adjustments.

BU 02 (blue-collar supervisors): An arbitration award was issued April 27, 2017, for the two-year period July 1, 2017, through June 30, 2019. The award provides for across the board wage adjustments of 1.2% on January 1, 2019, and for continuation of step movement adjustments for eligible employees. Negotiations with “HGEA” regarding a new contract for the two-year period beginning July 1, 2019, reached an impasse, and the Hawaii Labor Relations Board (“HLRB”) set the impasse date as December 10, 2018. The arbitration hearing is scheduled for the week starting November 18, 2019.

BU 03 (white-collar workers): An arbitration award was issued April 27, 2017, for the two-year period July 1, 2017, through June 30, 2019. The award provides for across the board wage adjustments of 1.25% on January 1, 2019. Employees on Step A move to Step B. Negotiations with HGEA regarding a new contract for the two year period beginning July 1, 2019, reached an impasse, and the HLRB set the impasse date as November 7, 2018. The arbitration hearing is scheduled for the week starting January 13, 2020

BU 04 (white-collar supervisors): An arbitration award was issued April 27, 2017, for the two-year period July 1, 2017, through June 30, 2019. The award provides for across the board wage adjustments of 1.25% on January 1, 2019. Employees on Step A move to Step B. Negotiations with HGEA regarding a new contract for the two-year period beginning July 1, 2019, reached an impasse, and the HLRB set the impasse date as November 21, 2018. The arbitration hearing is scheduled for the week starting September 30, 2019.

BU 13 (professional and scientific employees): An arbitration award was issued April 27, 2017 for the two-year period July 1, 2017, to June 30, 2019. Negotiations with HGEA regarding a new contract for the two-year period beginning July 1, 2019, reached an impasse, and the HLRB set the impasse date as October 31, 2018. The arbitration hearing is scheduled for the week starting October 14, 2019.

Employee Benefits

Set forth below is certain information regarding health care benefits, pension benefits and other post-employment benefits for which City and County employees are eligible. The information included under the captions “Pensions” and “Other Post-Employment Benefits” below relies on information produced by the Employees’ Retirement System of the State (the “System” or “ERS”) and the Hawaii Employer-Union Health Benefits Trust Fund (the “Trust Fund” or “EUTF”), respectively. Actuarial assessments are “forward-looking” information that reflect the respective judgments of the fiduciaries of the ERS and the Trust Fund. Such actuarial assessments are based upon a variety of assumptions, one or more of which may prove to be inaccurate or be changed in the future, and will change with the future experiences of the ERS and the Trust Fund.

The EUTF operates as an agent multiple-employer plan, meaning separate accounts are maintained for each employer. Although assets are pooled for investment purposes, the contributions of each employer, such as the City and County, may provide benefits only for the employees of that employer. A separate actuarial valuation is performed for each employer to determine that employer’s contribution rate.

ERS, on the other hand, operates under a cost-sharing arrangement. The System’s assets are used to pay benefits to retirees of any employer.

Health Care Benefits

All regular employees of the City and County are eligible for coverage under health plans provided through the Trust Fund, which was established in 2003 to design, provide and administer health and other benefit plans for State and county employees, retirees and their dependents. The Trust Fund is administered by a ten-member Board of Trustees (the “Board”) appointed by the Governor comprised of five union representatives and five management representatives. The Board is responsible for determining the nature and scope of health plans offered by the Trust Fund, negotiating and entering into contracts with insurance carriers, ruling on eligibility and establishing management policies for the Trust Fund and overseeing Trust Fund activities. The Trust Fund currently provides medical, prescription drug, dental, vision, chiropractic and group life benefits. Benefits with respect to regular employees are funded by a combination of employer contributions set by collective bargaining agreement or by executive order (with respect to non-union employees) and employee contributions through payroll deductions. Benefits for retirees are funded by a statutory formula.

In recent years, public and private health plan providers nationwide and in Hawaii, including the Trust Fund, have experienced substantial increases in health care costs. In the case of the Trust Fund, the current fiscal situation faced by the State and county employers has made it extremely difficult for the employers to increase employer contributions for health benefits in order to maintain the historical employer-employee contribution ratio. In the past, the Board has attempted to mitigate health plan rate increases by modifying benefits, and employees have been required to bear a larger share of the increased rates. The City and County cannot predict what actions will be taken (including changes to future plan benefits or employer-employee contribution rates) to address the impact of rising health care costs on the Trust Fund or what financial effects such changes may have on the City and County.

Other Post-Employment Benefits

Eligible employees of the City and County, including those of the Department, participate in retirement health care coverage plans provided by the Trust Fund. The City and County allocates a share of its required employer contributions to the Department. For FY 2017, the City and County calculated the Department's proportionate share of its total annual required contribution (ARC) at 6.2%. The Department's FY 2018 contribution was \$8.8 million. The Department's allocated share of the City and County's net OPEB obligation was \$115.5 million at fiscal year-end 2018. Under current accounting standards, the Department does not report a share of the City and County's unfunded actuarial accrued liability (UAAL) for retiree healthcare.

Beginning with the Fiscal Year ending June 30, 2008, state and local governments are required to account for and report other post-employment benefits ("OPEBs") under Statement No. 45 ("GASB 45") issued by the GASB. OPEBs consist of certain health and life insurance benefits provided through the Trust Fund to retired State and county employees and their dependents, including retired City and County employees and their dependents. The Trust Fund operates as an agent multiple employer defined benefit plan; liabilities and contribution requirements are measured for each participating government employer and the assets of each employer are held in separate accounts, although pooled for investment purposes. Beginning in Fiscal Year 2015, employer contributions to the Trust Fund for these benefits are determined by the Trust Fund based on an actuarial analysis of the amounts required to prefund the retiree benefits.

The following table describes the number of retired and active City and County employees receiving OPEBs at July 1, 2017 and July 1, 2018:

Table 25

City and County of Honolulu Retiree Health Care Plan Membership		
<u>Category</u>	<u>July 1, 2017</u>	<u>July 1, 2018</u>
Retirees	7,185	7,370
Deferred Inactives	885	911
Actives	8,612	8,576

Since July 1, 2017, the Trust Fund has been required to complete annual actuarial studies of the OPEB obligations of the State and each of the four counties. In the most recent actuarial valuation report as of July 1, 2018, the Trust Fund's actuarial consultant calculated the Annual Required Contributions for the Fiscal Years ending June 30, 2020 and 2021 and provided an estimate of the actuarial accrued OPEB liabilities under GASB 45 for each participating employer. The City and County's actuarial accrued liability was estimated to be \$2.357 billion, its unfunded actuarial accrued liability was estimated to be \$1.893 billion, with a funded ratio of 19.7%. The actuarial calculations for the City and County assumed full prefunding of its obligation and a discount rate of 7%.

The City and County reported a net OPEB unfunded actuarial accrued liability of \$1.893 billion as of July 1, 2018, compared with \$1.869 billion as of July 1, 2017. Based on this valuation, the City and County's consulting actuary determined the City and County's annual required contribution ("ARC") is estimated to be approximately \$183.677 million for Fiscal Year 2020 and \$190.106 million for fiscal year 2021 with full prefunding, compared to \$177.331 million for Fiscal Year 2019. The City and County's annual OPEB ARC was \$166.8 million for Fiscal Year 2018 and \$161.2 million for Fiscal Year 2017.

The City and County’s net OPEB unfunded actuarial accrued liability for Fiscal Year 2018 was allocated among various funds as follows:

<u>Fund</u>	<u>Amount</u>
General Fund	\$1,668,749,000
Sewer Fund	115,525,000
Transportation Fund	4,113,000
Refuse	74,960,000
H-Power	561,000
Glass Incentive	187,000
Recycling	<u>5,234,000</u>
Total:	\$1,869,329,000

Transfers to the Trust Fund to prefund the City and County’s OPEB obligations are determined on a year- by-year basis. For Fiscal Years 2014–2019, the City and County transferred the following respective amounts to the Trust Fund for this purpose: \$41.5 million, \$47.1 million, \$30.8 million, \$48.8 million, \$63.1 million and \$83.7 million.

Act 268, Session Laws of Hawaii 2013, requires EUTF to establish and administer a separate trust fund account for each public employer for the purpose of receiving irrevocable employer contributions to prefund OPEB benefit costs. The City and County’s previous pre-funding contributions and related net investment earnings were transferred to its OPEB Trust account. Act 268 requires all public employers within the State to contribute annually to the Trust Fund the full amount of their actuarially-determined contributions beginning in Fiscal Year 2019, and obligates the State finance director to use the transient accommodations tax and other revenues collected by the State on behalf of a county to supplement deficient county contributions. The Act’s full-funding requirement is being phased in over a five-year period, with employers required to contribute 20% of their actuarially-determined contributions in Fiscal Year 2015, 40% in Fiscal Year 2016, 60% in Fiscal Year 2017, 80% in Fiscal Year 2018 and 100% in Fiscal Year 2019. The Trust actuary determines the contributions required under Act 268 by first establishing the amount of the full actuarially-determined ARC, then deducting the amount estimated to be paid by the employer to cover pay-as-you-go benefits, then applying the required payment percentage (e.g. 80% for FY 2018) to the remaining portion of the full ARC.

The following table shows the City and County’s ARC, actual contributions and, for fiscal years 2012 to 2019, the contribution requirements of Act 268. Through Fiscal Year 2018 the City and County has exceeded the percentage of ARC requirement.

Table 26**City and County of Honolulu: History of OPEB Contributions**
(dollar amounts in thousands)

Fiscal Year	OPEB ARC	Benefit Payment (Pay-Go)	EUTF Trust Deposit	Total City Contribution	% of ARC Paid	Act 268 Minimum Percentage	Act 268 Minimum Contribution ⁽¹⁾
2012	\$153,979	\$63,077	\$40,000	\$103,077	67%	0%	NA
2013	140,695	68,101	38,500	106,601	76	0	NA
2014	144,624	65,511	41,540	107,051	74	0	NA
2015	147,058	64,683	47,123	111,806	76	20	\$15,708
2016	152,205	69,470	30,845	100,315	66	40	30,845
2017	161,233	79,905	48,797	128,702	80	60	48,797
2018	166,876	87,989	63,110	151,009	91	80	63,110
2019	177,331	93,600	83,731	177,331	100	100	83,731

⁽¹⁾ The Act 268 minimum contributions are based on the required statutory percentages applied to the difference between the ARC and projected pay-as-you-go amounts of \$68.518 million for FY 2015 and \$75.092 million for FY 2016, rather than the actual pay-as-you-go amounts for retirees.

The following table sets forth the OPEB funding progress for the City and County since FY 2009:

Table 27**City and County of Honolulu: OPEB Funding Progress**
(dollar amounts in thousands)

Actuarial Valuation Date	Actuarial Value of Assets	Actuarial Accrued Liability	Unfunded AAL (UAAL)	Funded Ratio	Covered Payroll	UAAL as a Percentage of Covered Payroll
July 1, 2018	\$464,588	\$2,357,481	\$1,892,893	19.7%	\$659,664	286.9%
July 1, 2017	372,671	2,241,999	1,869,328	16.6	647,203	288.8
July 1, 2015	242,593	2,009,083	1,766,490	12.1	613,054	288.1
July 1, 2013	123,406	1,795,635	1,672,229	6.9	551,642	303.1
July 1, 2011	40,177	1,776,061	1,735,884	2.3	548,355	316.6
July 1, 2009	40,110	1,924,859	1,884,749	2.1	556,742	338.5

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The OPEB ARC, actuarial accrued liability, and unfunded actuarial accrued liability are provided by the Trust Fund’s actuary, measured in the most recent actuarial valuation report as of July 1, 2018. Significant actuarial methods and assumptions utilized in the Trust Fund’s 2018 Actuarial Valuation Report are as follows:

Amortization method	Level percentage, closed
Equivalent single amortization period	20.1 years
Asset valuation method	Market
Actuarial assumptions	
Inflation rate	2.50%
Investment rate of return	7.00%
Projected salary increase	3.50%
Healthcare inflation rates	
PPO	6.60%, 6.60% and 9.00% initial, declining to 4.86% after 14 years
HMO	9.00% initial, declining to 4.86% after 14 years
Dental	3.50%
Vision	2.50%
Medicare Part B	2.00% and 5.00% initial, declining to 4.70% after 14 years
Life Insurance	0.00%

In June 2015, GASB approved new accounting and financial reporting standards for state and local government OPEB. Statement No. 74, Financial Reporting for Postemployment Benefit Plans Other Than Pension Plans (GASB 74) applies to OPEB plans. Statement No. 75, Accounting and Financial Reporting for Postemployment Benefits Other Than Pensions (GASB 75) applies to state and local employers that sponsor OPEB. Generally, the new OPEB standards parallel those applied to defined-benefit pension plans and participating employers by GASB 67 and 68, respectively. The new standards introduce new procedures for measuring OPEB liabilities and costs, require employers to report a net OPEB liability on their financial statements, and require more extensive disclosure in plan and employer financial statements. GASB 74 will be effective for plans with fiscal years beginning after June 15, 2016. The Trust Fund has implemented GASB 75 for fiscal years beginning July 1, 2016, and July 1, 2017, and has prepared its GASB 75 report for the fiscal year ended June 30, 2018. The City and County implemented Statement 75. The implementation resulted in a restatement of \$1,241.4 million to the net position of the City for the fiscal year ended June 30, 2017.

Pensions

All eligible employees of the City and County, including those of the Department, are covered under the Employees’ Retirement System of the State (the “System” or “ERS”), a cost-sharing, multiple employer defined benefit pension plan that provides retirement, disability and death benefits funded by employee contributions and by employer contributions. As is further described below, employer contributions are set by State statute as a percentage of the covered payroll. The Sewer Fund’s contribution requirements as of June 30, 2018, June 30, 2017 and 2016 were approximately \$7.5 million, \$11.9 million and \$7.5 million, respectively. At June 30, 2018, the Sewer Fund reported a liability of \$117.7 million for its proportionate share of the net pension liability.

This section contains certain information relating to the System, derived primarily from information produced by the System, its independent accountant and its actuary. The City and County has not independently verified the information provided by the System, its independent accountant and its actuary, and makes no representations nor expresses any opinion as to the accuracy of such information. The comprehensive annual financial report of the System and most recent valuation report of the System may be obtained by contacting the System. The comprehensive annual financial reports of the System are also available on the State’s website at <http://portal.hawaii.gov>, and other information about the System is available on the System’s website at <http://ers.hawaii.gov>. Such documents and other information are not incorporated herein by reference.

The System uses a variety of assumptions to calculate the total pension liability, net pension liability, annual pension expense and other actuarial calculations and valuations of the System and, in turn, to attribute a share of its liabilities and costs to participating employers, including the City and County. No assurance can be given that any of the assumptions underlying such calculations and valuations will reflect the actual results experienced by the System. Actuarial assessments are “forward-looking” information that reflect the judgment of

the fiduciaries of the pension plans, and variances between the assumptions and actual results may cause an increase or decrease in, among other things, the System's total pension liability, net pension liability or funded ratio and, in turn, the City and County's share of the System's costs and liabilities. Actuarial assessments will change with the future experience of the pension plans. See "*—General Information*" and "*—Actuarial Valuation*" herein for more information on the actuarial assumptions used by the System.

General Information

The System began operation on January 1, 1926. The statutory provisions of HRS Chapter 88 govern the operation of the System. Responsibility for the general administration of the System is vested in a Board of Trustees, with certain areas of administrative control being vested in the State Department of Budget and Finance. The Board of Trustees consists of eight members: the Director of Finance of the State, ex officio; four members of the System (two general employees, one teacher, and one retiree) who are elected by the members of the System; and three citizens of the State (one of whom shall be an officer of a bank authorized to do business in the State, or a person of similar experience) who are appointed by the Governor and may not be employees of the State or any county. All contributions, benefits and eligibility requirements are established by statute, under HRS Chapter 88, and may only be amended by legislative action.

The ERS provides retirement, disability and death benefits that are covered by the provisions of the noncontributory, contributory and hybrid retirement plans. The three plans provide a monthly retirement allowance equal to the benefit multiplier (generally 1.25% or 2%) multiplied by the average final compensation (AFC) multiplied by years of credited service. The benefit multiplier decreased by 0.25% for new hybrid and contributory plan members hired after June 30, 2012. For members hired before January 1, 1971, AFC is the higher of the average salary earned during five highest paid years of service, including the payment of salary in lieu of vacation, or the three highest paid years of service excluding the payment of salary in lieu of vacation. For members hired on or after January 1, 1971 and before July 1, 2012, AFC is based on the three highest paid years of service, excluding the payment of salary in lieu of vacation. For members hired after June 30, 2012, AFC is based on the five highest paid years of service, excluding the payment of salary in lieu of vacation.

For members hired before July 1, 2012, the original retirement allowance is increased by 2.5% each July 1 following the calendar year of retirement. This cumulative benefit is not compounded and increases each year by 2.5% of the original retirement allowance without a ceiling (2.5% of the original retirement allowance the first year, 5.0% the second year, 7.5% the third year, etc.). For members hired after June 30, 2012, the post-retirement annuity increase was decreased to 1.5% per year.

Retirement benefits for certain groups, such as police officers, firefighters, some investigators, sewer workers, judges, and elected officials, vary from general employees. Further details of the benefits provisions of the pension plans may be found in the City and County's Comprehensive Annual Financial Report and in the financial and actuarial reports of the System. The System is funded from contributions by employers and, for the contributory and hybrid plans, by employees as well. Employer contribution rates are set by statute.

City and County Pension Liabilities

This section contains certain historical information regarding the City and County's pension obligations at June 30, 2018, as set forth in the City and County's Comprehensive Annual Financial Report for the fiscal year ended on that date. Such historical information is derived from the System's 2017 actuarial valuation report (the "2017 Valuation Report"), as the City and County's proportionate share of pension liability is based on the System's valuation at the end of the preceding fiscal year.

As of Fiscal Year 2015, the City and County's financial reporting for pensions conforms to GASB Statement No. 68 (GASB 68), Accounting and Financial Reporting for Pensions. GASB 68 requires government employers participating in cost sharing multi-employer plans such as ERS to report a proportionate share of the net pension liability and pension expense of the plan. These measurements were provided by the System's consulting actuary, based on the actuarial valuation of the System.

At June 30, 2018, the City and County reported a liability of \$2.307 billion for its proportionate share of the net pension liability. The net pension liability was measured as of June 30, 2017, and the total pension liability used to calculate the net pension liability was determined by an actuarial valuation as of that date. The System's net pension liability as of June 30, 2017 was \$12.950 billion. The City and County's proportion of the net pension liability was based on the actual employer contributions to the pension plan relative to the contributions of all participating employers. At June 30, 2017, the City and County's proportion was 17.816%, which was a decrease of 0.0352% from its proportion measured as of June 30, 2016. The Sewer Fund's proportionate share of the City's proportionate share at June 30, 2017, was 5.10%, a decrease of 0.16% from the prior year.

For the Fiscal Year ended June 30, 2018, the City and County recognized pension expense of \$336 million. For the Fiscal Year ended June 30, 2018, the Sewer Fund recognized pension expense of \$14.7 million.

Contributions are established by HRS Chapter 88 and may be amended through legislation. The employer rate is set by statute based on the recommendations of the ERS actuary resulting from an experience study conducted every five years. Since July 1, 2005, the employer contribution rate is a fixed percentage of compensation, including the normal cost plus amounts required to pay for the unfunded actuarial accrued liabilities. The contribution rates for Fiscal Year 2018 were 28.00% for police and firefighters and 18.00% for all other employees. Contributions to the System from the City and County, excluding its component units, for June 30, 2018, 2017, and 2016 were \$157.686 million, \$139.569 million and \$129.245 million, respectively.

The employer is required to make all contributions for members in the noncontributory plan. For contributory plan employees hired prior to July 1, 2012, general employees are required to contribute 7.8% of their salary and police and firefighters are required to contribute 12.2% of their salary. For contributory plan employees hired after June 30, 2012, general employees are required to contribute 9.8% of their salary and police and firefighters are required to contribute 14.2% of their salary. Hybrid plan members hired prior to July 1, 2012 are required to contribute 6.0% of their salary. Hybrid plan members hired after June 30, 2012 are required to contribute 8.0% of their salary.

Table 28

SCHEDULE OF EMPLOYER PENSION CONTRIBUTIONS
(dollar amounts in thousands)

Fiscal Year (June 30)	Statutorily Required Contribution	Actual Contributions Recognized by the Plan	Contribution Deficiency (Excess)	City and County's Covered Payroll	Contributions as a % of Covered Payroll
2013	\$ 93,503	\$ 87,840	\$ (5,663)	\$509,130	17.25%
2014	102,885	87,979	(14,906)	536,304	16.40
2015	121,465	132,308	10,843	578,043	22.89
2016	135,217	129,245	(5,972)	599,494	21.56
2017	140,342	139,569	(773)	626,639	22.27
2018	152,657	157,686	5,029	640,203	24.63

The following table presents the sensitivity of the City and County’s proportionate share of the net pension liability, recorded at June 30, 2018, calculated using the discount rate of 7.00%, as well as the City and County’s proportionate share of the net pension liability if it were calculated using a discount rate that is 1-percentage-point lower (6.00%) or 1-percentage-point higher (8.00%):

Table 29

	<u>1% Decrease (6.00%)</u>	<u>Current Discount Rate (7.00%)</u>	<u>1% Increase (8.00%)</u>
City and County’s share of net pension liability (\$000)	\$3,029,030	\$2,307,225	\$1,712,060
Sewer Fund’s share of net pension liability (\$000)	\$154,548	\$117,720	\$87,353

The total pension liability in the 2017 Valuation Report was determined using the following actuarial assumptions, applied to all periods included in the measurement:

Inflation	2.50%
Payroll growth rate	3.50% per annum
Investment rate of return	7.00% per annum

The same rates were applied to all periods. There were no changes to ad hoc postemployment benefits including COLA. Post-retirement mortality rates were based on either the Client Specific Tables, for general employees, or the 1994 US Group Annuity Mortality Static Table, for police and firefighters. Pre-retirement mortality rates were based on the RP-2000 Mortality Tables.

The actuarial assumptions used in the 2017 Valuation Report were based on the results of an actuarial experience study for the five-year period ending June 30, 2015. ERS updates the experience study every five years.

The long-term expected rate of return on pension plan investments was determined using a “top down approach” of the Bespoke Client-Constrained Simulation-based Optimization Model (a statistical technique known as “re-sampling with replacement” that directly keys in on specific plan-level risk factors as stipulated by the ERS Board) in which best-estimate ranges of expected future real rates of return (expected returns, net of pension plan 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 discount rates used to measure the net pension liability at June 30, 2018, 2017, and 2016 were 7.00%, 7.00% and 7.00%, respectively. The projection of cash flows used to determine the discount rate assumed that employee contributions will be made at the current contribution rate and that contributions from the City and County will be made at statutorily required rates, actuarially determined. Based on those assumptions, the pension plan’s fiduciary net position was projected to be available to make all projected future benefit payments of current active and inactive employees. Therefore, the long-term expected rate of return on pension plan investments was applied to all periods of projected benefit payments to determine the total pension liability.

Hawaii Employees’ Retirement System

The City and County’s pension expense and liability is directly dependent on the overall performance and condition of the ERS. This section provides additional information on the System. While the ERS has adopted GASB 67, and all of its participating employers, including the City and County, have adopted GASB 68, the System’s actuary continues to provide an annual actuarial valuation report that is based on the provisions of Chapter 88 of the Hawaii Revised Statutes, as amended, and the actuarial assumptions adopted by the ERS Board of Trustees. This actuarial valuation report determines whether current employer contribution rates are adequate to ensure that the UAAL can be funded over a period not exceeding 30 years, describes the financial condition of the ERS and analyzes changes in the ERS’s condition. The information presented in this section is derived from the 2018 Valuation Report, presenting the actuarial condition of the ERS as of June 30, 2018.

The demographic data for each annual June 30 valuation is collected as of the March 31 preceding the valuation date. As of March 31, 2018, the contributory plan covered 5,647 active employees or 8.5% of all active members of the System, the noncontributory plan covered approximately 12,841 active employees or 19.4%, and the Hybrid Plan covered 47,783 active members or 72.1%. The Hybrid Plan membership will continue to increase in the future as most new employees will be required to join this plan.

As of March 31, 2018, the System's membership comprised approximately 66,271 active employees, 9,249 inactive vested members and 48,569 pensioners and beneficiaries. The following table shows the number of active members, inactive vested members and retirees and beneficiaries of the System as of March 31, 2016, 2017 and 2018:

Table 30

SYSTEM MEMBERSHIP

<u>Category</u>	<u>March 31, 2016</u>	<u>March 31, 2017</u>	<u>March 31, 2018</u>
Active	67,377	65,911	66,271
Inactive, vested	7,741	9,241	9,249
Retirees and beneficiaries	45,506	46,927	48,569
Total	120,624	122,079	124,089

Funded Status and Funding Policy

The statutory employee and employer contribution rates are intended to provide for the normal cost plus the amortization of the UAAL over a period not in excess of 30 years. Based on the current contribution rates of 28.00% for police and fire employees and 18.00% for all other employees, the future contribution rates established in statute, and the new benefit tier for employees hired after June 30, 2012, the actuary has determined that, as of the 2018 Valuation Report, the remaining amortization period is 25 years. .

Based on the 2018 Valuation Report, the System's UAAL increased to \$13,404.7 million, compared to \$12,928.0 million for 2017. The financial market performed ahead of the projected rate but not as well in fiscal year 2018 as compared to fiscal year 2017 resulting in a return of 7.9% on the market value of assets for fiscal year 2018. The funded ratio increased slightly to 55.2% in 2018, compared to 54.9% for the prior year based on smoothed assets. Based on the assumptions used in preparing the 2018 Valuation Report and the future contribution rates established by the Legislature effective July 1, 2017, the actuary determined that, as of the 2018 Valuation Report, the remaining amortization period was 25 years. Thus, the current contribution rate are sufficient to eliminate UAAL over a period of 30 years or less as mandated by Hawaii Revised Statutes Section 88-122(e)(1).

Act 163, SLH 2011, which became effective July 1, 2012, established the employer contribution rates set forth in the following table.

Table 31

EMPLOYER CONTRIBUTION REQUIREMENTS

<u>Employer Contribution effective starting</u>	<u>Police Officers and Firefighters (% of total payroll)</u>	<u>Other Employees (% of total payroll)</u>
July 1, 2012	22.0	15.5
July 1, 2013	23.0	16.0
July 1, 2014	24.0	16.5
July 1, 2015	25.0	17.0

Act 17, SLH 2017, which became effective July 1, 2017, was adopted to bring the System's funding period within 30 years by increasing employer contribution requirements as follows:

Employer Contribution effective starting	Police Officers and Firefighters (% of total payroll)	Other Employees (% of total payroll)
July 1, 2017	28.0	18.0
July 1, 2018	31.0	19.0
July 1, 2019	36.0	22.0
July 1, 2020	41.0	24.0

Under the contributory plan, police officers, firefighters, and corrections officers are required to contribute 12.2% of their salary to the plan and most other covered employees are required to contribute 7.8% of their salary. Under the Hybrid Plan, covered employees are generally required to contribute 6.0% of their salary to the plan, with sewer workers in specified classifications, water safety officers and emergency medical technicians required to contribute 9.75% of their salary. Effective July 1, 2012, contribution rates for newly hired employees covered under the contributory and Hybrid Plan increased by 2% pursuant to Act 163, SLH 2011, such that the corresponding contribution rates for new employees as discussed in this paragraph became 14.2%, 9.8%, 8.0% and 11.75%, respectively. Employees covered under the noncontributory plan do not make contributions.

Actuarial Methods

The System's actuary uses the individual entry age normal cost method. The most recent valuation was performed for the fiscal year ended June 30, 2018.

Since the State statutes governing the System establish the current employee and employer contribution rates, the actuarial valuation determines the number of years required to amortize (or fund) the UAAL. For the June 30, 2018 valuation, this determination was made using an open group projection to reflect both the increasing contribution rates and the changes in benefits for members hired after June 30, 2012.

Because of this amortization procedure, any change in the unfunded actuarial accrued liability due to (i) actuarial gains and losses, (ii) changes in actuarial assumptions or (iii) amendments, affects the funding period.

On an aggregate basis with regard to the contributory, Hybrid, and noncontributory plans, the total normal cost for benefits provided by the System for the fiscal year ended June 30, 2017 was 13.96% of payroll, which was 11.14% of payroll less than the total contributions required by law (19.16% from employers plus 5.94% in the aggregate from employees). Since only 8.02% of the employers' 19.16% contribution is required to meet the normal cost (5.94% comes from the employee contribution), it is intended that the remaining 11.14% of payroll will be used to amortize any unfunded actuarial accrued liabilities over a period of years in the future, assuming that total payroll increases by 3.50% per year. Due to the changes enacted in 2011 (increases in the employer contribution rates and new benefits and contribution rates for members hired after June 30, 2012), the percentage of payroll available to amortize the unfunded actuarial liabilities is expected to increase each year for the foreseeable future.

Actuarial Valuation

The actuarial value of assets is equal to the market value, adjusted for a four-year phase-in of actual investment return in excess of or below expected investment return. The actual return is calculated net of investment and administrative expenses, and the expected investment return is equal to the assumed investment return rate multiplied by the prior year's market value of assets, adjusted for contributions, benefits paid, and refunds. The actuarial value of assets has been based on a four-year smoothed valuation that recognizes the excess or shortfall of investment income over or under the actuarial investment yield rate assumption. The actuarial asset valuation method is intended to smooth out year to year fluctuations in the market return. The excess or shortfall in the actual return during the year, compared to the investment yield rate assumption, is spread over this valuation and the next three valuations.

The System's actuary uses certain assumptions (including rates of salary increase, probabilities of retirement, termination, death and disability, and an investment yield rate assumption) to determine the amount that an employer must contribute in a given year to provide sufficient funds to the System to pay benefits when due. The

Board of Trustees periodically evaluates and revises the assumptions used by the System for actuarial valuations, including by commissioning experience studies to evaluate the actuarial assumptions to be used by the System. The current assumptions were adopted by the Board of Trustees based on the recommendations of the System’s actuary in the most recent experience study, the 2015 Experience Study, and are reflected in the 2018 Valuation Report. The most significant change in assumptions reflected in the 2018 Valuation Report is the decrease of the investment return assumption from 7.65% to 7.00% and the mortality assumption was modified to assume longer life expectancies as well as to reflect continuous mortality improvement.

The actual investment returns of the System for Fiscal Years 2009 through 2018 shown below are market returns, net of investment and administrative expenses.

Table 32

<u>Fiscal Year</u>	<u>Percentage</u>
2009	-17.54%
2010	11.96%
2011	21.25%
2012	-0.14%
2013	12.57%
2014	17.77%
2015	4.23%
2016	-0.78%
2017	13.68%
2018	7.89%

Source: Report on Investment Activity for the ERS prepared The Northern Trust Company (2008 to 2013), and The Bank of New York Mellon (2014 to 2016), for 2017 as set forth in the 2017 Valuation Report, and for 2018 as set forth in the 2018 Valuation Report; and reported in the System’s Comprehensive Annual Financial Reports.

The September 30, 2018 ERS Performance Report prepared by The Bank of New York Mellon shows a year to date investment return of 2.5%, gross of investment and administrative expenses, for the first three months of fiscal year 2019.

The 2018 Valuation Report found that, as the percentage of employees hired on and after July 1, 2012, increases and the new funding policies impact the System, the UAAL will be fully amortized over a 25-year period. Assuming a constant employment base, the number of employees entitled to pre-2012 retirement benefits should equal the number of employees entitled to post-2012 retirement benefits in fiscal year 2023. The combination of the higher contribution policies and new benefit structure for future employees is expected to enable the System to absorb the prior adverse experience over the 25-year term.

Table 33 shows the System’s funding progress for the ten most recent actuarial valuation dates. Table 34 shows the System’s projected funding progress through the Fiscal Year ending June 30, 2047. The projection assumes no actuarial gains or losses in the actuarial liabilities or the actuarial value of assets. In addition, the projection reflects the changes made to the benefits and member contribution rates of employees hired after June 30, 2012, but does not take into account the increased employer contributions required by Act 17, SLH 2017.

Table 33

SCHEDULE OF FUNDING PROGRESS
(Dollar amounts in millions)

Fiscal Year (June 30)	Actuarial Value of Assets (a)	Actuarial Accrued Liability (b)	Unfunded Actuarial Accrued Liability (b)-(a)	Funded Ratio (a)/(b)	Annual Covered Payroll (c)	UAAL as a Percentage of Payroll ((b)-(a))/(c)
2009	11,400.1	17,636.4	6,236.3	64.6%	4,030.1	154.7%
2010	11,345.6	18,483.7	7,138.1	61.4%	3,895.7	183.2%
2011 *	11,942.8	20,096.9	8,154.2	59.4%	3,916.0	208.2%
2012	12,242.5	20,683.4	8,440.9	59.2%	3,890.0	217.0%
2013	12,748.8	21,243.7	8,494.9	60.0%	3,906.7	217.4%
2014	13,641.8	22,220.1	8,578.3	61.4%	3,991.6	214.9%
2015 *	14,463.7	23,238.4	8,774.7	62.2%	4,171.4	210.4%
2016 *	14,998.7	27,439.2	12,440.5	54.7%	4,258.9	292.1%
2017	15,720.6	28,648.6	12,928.0	54.9%	4,265.0	303.1%
2018	16,512.7	29,917.4	13,404.7	55.2%	4,383.7	305.8%

Source: 2018 Valuation Report

* New assumption effective on valuation date.

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Table 34**PROJECTED FUNDING PROGRESS***
(Dollar amounts in millions)

Fiscal Year (ending June 30)	Employer Contributions	Actuarial Accrued Liability	Actuarial Value of Assets	Unfunded Actuarial Accrued Liability	Funded Ratio
2018	\$ 893	\$ 29,917	\$ 16,513	\$ 13,405	55.2%
2019	1,060	30,983	17,208	13,774	55.5
2020	1,197	32,152	18,157	13,995	56.5
2021	1,231	33,325	19,238	14,088	57.7
2022	1,266	34,502	20,349	14,153	59.0
2023	1,302	35,681	21,494	14,187	60.2
2024	1,339	36,861	22,675	14,185	61.5
2025	1,379	38,040	23,894	14,146	62.8
2026	1,420	39,216	25,153	14,063	64.1
2027	1,463	40,391	26,458	13,933	65.5
2028	1,509	41,566	27,816	13,749	66.9
2029	1,556	42,740	29,233	13,508	68.4
2030	1,606	43,918	30,716	13,202	69.9
2031	1,657	45,098	32,273	12,825	71.6
2032	1,711	46,283	33,912	12,371	73.3
2033	1,767	47,473	35,641	11,833	75.1
2034	1,825	48,670	37,468	11,201	77.0
2035	1,885	49,876	39,407	10,469	79.0
2036	1,948	51,093	41,467	9,626	81.2
2037	2,013	52,325	43,662	8,664	83.4
2038	2,082	53,577	46,006	7,571	85.9
2039	2,153	54,853	48,517	6,336	88.4
2040	2,227	56,159	51,212	4,947	91.2
2041	2,304	57,501	54,111	3,390	94.1
2042	2,385	58,886	57,233	1,653	97.2
2043	412	60,321	60,602	(281)	100.5
2044	422	61,813	62,114	(301)	100.5
2045	433	63,369	63,691	(322)	100.5
2046	444	64,993	65,338	(344)	100.5
2047	458	66,694	67,062	(368)	100.6

Source: 2018 Valuation Report

* Assumes all actuarial assumptions exactly met, including a 7.00% annual return on the current actuarial value of assets. No assurance can be given that any of such assumptions will reflect the actual results experienced by the System. Actuarial assessments are "forward-looking" information that reflect the judgment of the fiduciaries of the System, and variances between the assumptions and actual results may cause an increase or decrease in, among other things, the System's actuarial accrued liability, actuarial value of assets or funded ratio.

The total assets of the System on a market value basis available for benefits amounted to approximately \$14.2 billion as of June 30, 2014, \$14.5 billion as of June 30, 2015, \$14.1 billion as of June 30, 2016, \$15.7 billion as of June 30, 2017, \$16.6 billion as of June 30, 2018 and \$16.6 billion as of March 31, 2019. Actuarial certification of assets as of June 30, 2014 was \$13.6 billion, as of June 30, 2015 was \$14.5 billion, as of June 30, 2016 was \$15.0 billion as of June 30, 2017 was \$15.7 billion and as of June 30, 2018 was \$16.5 billion.

The following table shows a comparison of the actuarial value of assets ("AVA") to the market values, the ratio of the AVA to market value and the funded ratio based on AVA compared to funded ratio based on market value assets:

Table 35**ACTUARIAL VALUE OF ASSETS**

Fiscal Year (ending June 30)	Actuarial Value of Assets (in millions)	Market Value of Assets (in millions)	Market Value as Percentage of AVA	Funded Ratio (AVA)	Funded Ratio (Market Value)
2009	11,400.1	8,818.0	77.4%	64.6%	50.0
2010	11,345.6	9,821.6	86.6%	61.4%	53.1
2011	11,942.8	11,642.3	97.5%	59.4%	57.9
2012	12,242.5	11,285.9	92.2%	59.2%	54.6
2013	12,748.8	12,357.8	96.9%	60.0%	58.2
2014	13,641.8	14,203.0	104.1%	61.4%	63.9
2015	14,463.7	14,505.5	100.3%	62.2%	62.4
2016	14,998.7	14,070.0	93.8%	54.7%	51.3
2017	15,720.6	15,698.3	99.9%	54.9%	54.8
2018	16,512.7	16,598.4	100.5%	55.2%	55.5

Source: 2008-2018 Valuation Reports.

As of June 30, 2018, the UAAL of the System was \$13,404.7 million. The following table shows the normal cost (which means the annual cost of providing retirement benefits for services performed by today's members) as a percentage of payroll, employee contribution rate and effective employer normal cost rate for the two groups of covered employees for Fiscal Years 2017 and 2018:

Table 36**NORMAL COST**

	June 30,					
	2017			2018		
	Police and Firefighters	Other Employees	All Employees	Police and Firefighters	Other Employees	All Employees
Normal cost as % of payroll:	25.56%	12.39%	13.96%	25.46%	12.38%	13.90%
Employee contribution rate:	12.43%	5.06%	5.94%	12.49%	5.24%	6.08%
Effective employer normal cost rate:	13.13%	7.33%	8.02%	12.97%	7.14%	7.82%

Source: 2018 Valuation Report.

The following table shows the annual actual contributions as of the last ten valuation dates. Employer contribution rates are set prospectively by the statute and, accordingly, may be greater or less than the ARC in any given year.

Table 37

SCHEDULE OF EMPLOYER CONTRIBUTIONS*
(Dollar amounts in thousands)

<u>June 30,</u>	<u>Actual Contribution</u>
2009	578,635
2010	547,613
2011	534,858
2012	548,353
2013	581,447
2014	653,128
2015	717,793
2016	756,558
2017	781,244
2018	847,595

Excludes City and County-paid employee contributions classified as employer contributions pursuant to IRC Section 414(h)(2).

Asset Allocation

The following table shows the target and actual asset allocation of the System as of December 31, 2018:

Table 38

ASSET ALLOCATION
(as of December 31, 2018)

<u>Asset Type</u>	<u>Actual Allocation</u>		<u>Target Allocation</u>		<u>Allocation Difference</u>
	<u>Amount (\$mm)</u>	<u>Percentage</u>	<u>Amount (\$mm)</u>	<u>Percentage*</u>	
Broad Growth	\$11,550.2	73.2%	\$11,356.6	72.0%	1.2%
Principal Protection	1,382.3	8.8%	1,261.8	8.0%	0.8%
Crisis Risk Offset	2,112.9	13.4%	2,050.5	13.0%	0.4%
Real Return	517.6	3.3%	1,104.1	7.0%	-3.7%
Opportunities	28.9	0.2%	0.0	0.0%	0.2%
Other	181.1	1.1%	0.0	0.0%	1.1%
Total	\$15,773.0	100.0%	\$15,773.0	100.0%	

Source: Valuations provided by BNY Mellon – December 31, 2018; values unaudited.

* Target Percentages are the June 2018 Risk-Based Policy Targets. Numbers subject to changes and rounding errors.

Employer Contribution Rate

The schedule which follows shows the total actuarially determined employer contribution rate for all employees based on the last five annual actuarial valuations.

Table 39

EMPLOYER CONTRIBUTION RATES

Actuarial Valuation as of June 30	Total Calculated Employer Contribution Rate for all Employees (% of total payroll)*	Funding Period (Years)
2014	17.28%	26.0
2015	17.89%	26.0
2016	17.91%	66.0
2017	19.16%	26.0
2018	20.36%	25.0

* Reflects Act 181, SLH 2004, which amended Sections 88-105, 88-122, 88-123, 88-124, 88-125, 88-126, Hawaii Revised Statutes, and Act 163, SLH 2011.

The decrease in funding period 2014 was due to liability gains from positive experience versus the actuarial assumptions and large investment gains, respectively. The increase in the funding period in the valuation as of June 30, 2016 was primarily due to the decrease in the investment return assumption from 7.65% to 7.00%. The decrease in funding period following the valuations as of June 30, 2017 and June 30, 2018 is primarily due to investment gains and mandated increase in employer contributions.

Summary of Actuarial Certification Statement

A summary of the actuarial certification of the System as of June 30, 2017 and June 30, 2018 is set forth below:

Table 40

**EMPLOYEES' RETIREMENT SYSTEM OF THE STATE OF HAWAII
Summary of Actuarial Certification as of June 30, 2017 and 2018
(Includes all counties)**

ASSETS	2017	2018
Total current assets	\$15,720,627,120	\$16,512,744,474
Present value of future employee contributions	2,283,117,878	2,425,178,684
Present value of future employer normal cost contributions ..	2,675,729,127	2,664,690,218
Unfunded actuarial accrued liability	12,928,003,413	13,404,656,909
Present value of future employer Early Incentive Retirement Program contribution.....	N/A	N/A
TOTAL ASSETS	\$33,607,477,538	\$35,007,270,285
LIABILITIES		
Present value of benefits to current pensioners and beneficiaries	\$15,020,603,612	\$16,008,847,800
Present value of future benefits to active employees and inactive members	18,586,873,926	18,998,422,485
TOTAL LIABILITIES.....	\$33,607,477,538	\$35,007,270,285

Source: Gabriel, Roeder, Smith & Company.

Recent Developments

Act 19 Session Laws of Hawaii, 2018 (“Act 19”) signed into law by Governor Ige on June 4, 2018, allows the State and counties to pay employer contributions to the ERS in advance of the fiscal year in which the contributions are required and to receive credit against future required payments. Act 19 does not require separate accounts to be established or maintained for each contributing entity that would restrict the use of such funds to only the particular employees of the contributing entity. Act 19 acknowledges that for purposes of the standards of the Government Accounting Standards Board, the ERS is a cost-sharing multiple-employer pension plan in which the pension obligations to the employees of the State and the counties are pooled and the assets of the ERS can be used to pay the pensions of all State and county employees who are members of the system.

At this time the City and County cannot predict what impact, if any, the adoption of Act 19 will have on ERS or its funding obligations in connection therewith.

OTHER INFORMATION REGARDING THE CITY AND COUNTY OF HONOLULU

Climate Change, Sea Level Rise and Flooding

The City and County and the State have taken a number of steps intended to mitigate the negative impacts of climate change; impacts to which the City and County and the Wastewater System may be particularly vulnerable.

At the November 2016 election the citizens of the City and County approved, by a significant margin, amendments to the City and County’s Charter to establish an Office of Climate Change, Sustainability and Resiliency (the “Resilience Office”). The amendments to the Charter, adopted on June 30, 2017, charges the Resilience Office with, among other things: (i) tracking climate change science and its potential impact on the City and County; (ii) coordinating actions and policies within the City and County to increase community preparedness, protect economic activity, protect the coastal areas and beaches and to develop resilient infrastructure; (iii) developing or coordinating City and County policies and programs to improve the environmental performance of City and County operations and advance environmental priorities; (iv) integrating sustainable and environmental values into City and County plans, programs and policies; (v) coordinating with federal and state agencies regarding climate change, sustainability and the environment; (vi) convening a climate change commission (the “City and County Climate Commission”) consisting of five members with expertise in climate change in Hawaii no less than twice a year; and (vii) providing appropriate advice to the Mayor, City Council and executive departments of the City and County. Under the amendments to the Charter, the City and County Climate Commission is charged with gathering the latest science and information on climate change effects in the City and County and providing advice as is deemed appropriate to the executive for climate change and sustainability, the Mayor, City Council, and executive departments of the City and County.

On June 7, 2017 Governor Ige signed Act 32 Session Laws of Hawai‘i, 2017 (the “Climate Change Act”) into law, which, among other things, renamed the Interagency Climate Adaptation Committee as the Hawaii Climate Change Mitigation and Adaptation Commission (the “State Climate Commission”), clarified and expanded the duties of the State Climate Commission and made Hawaii the first state to enact legislation implementing parts of the Paris climate accord. The Climate Change Act anticipates that the State Climate Commission will provide direction, facilitation, coordination and planning among state and county agencies, federal agencies, and other partners about climate change mitigation (reduction of greenhouse gases) and climate change resiliency strategies, including, but not limited to, sea level rise adaptation, water and agricultural security, and natural resource conservation. The State Climate Commission is placed under the Department of Land and Natural Resources (DLNR) for administrative purposes and is to be headed jointly by the Chairperson of the Board of Land and Natural Resources and the Director of the Office of Planning (OP), or their designees.

On July 17, 2018 Mayor Caldwell issued a formal directive (the “Climate Change Directive”) to all City and County departments and agencies to take action to address, minimize risks from and adapt to the impacts of climate change and sea level rise in response to the Sea Level Rise Guidance and Climate Change Brief, each of which was adopted on June 5, 2018 by the City and County Climate Commission. The City and County Climate Commission compiled the Oahu-specific recommendations based on the State of Hawaii’s 2017 *Hawaii Sea Level Rise Vulnerability and Adaptation Report* (“State Report”), federal research, and additional scientific

literature. The State Report found that there is a growing vulnerability to potential coastal flooding, erosion, land loss, and high wave impacts in Hawaii resulting from a projected sea level rise of 3.2 feet by end of the century, with periodic high tide flooding in the exposure area by mid-century. The City and County Climate Commission described the impact on Oahu of such sea level rise without action in response and, through its Sea Level Rise Guidance and Climate Change Brief, provided advice and recommendations to the Mayor, City Council and Executive Departments. The Climate Change Directive requires all departments and agencies under the Mayor's jurisdiction to take several actions, including: (i) viewing climate change and the need for mitigation and adaptation as an urgent matter, and taking a proactive approach to reducing greenhouse gas emissions and protecting and preparing the City and County for the physical and economic impacts of climate change; (ii) using the Sea Level Rise Guidance and State Report in their planning, programming, and capital improvement decisions to mitigate impacts to infrastructure and critical facilities subject to sea level rise, which may include elevation or relocation of infrastructure and critical facilities, the elevating of surfaces, structures, and utilities, and/or other adaptation measures; (iii) proposing revisions to shoreline rules and regulations to incorporate sea level rise and conserve a natural, unarmored shoreline wherever possible; and (iv) working cooperatively to develop and implement land use policies, hazard mitigation actions, and design and construction standards that mitigate and adapt to the impacts of climate change and sea level rise. The Climate Change Directive strongly encourages independent agencies, city-affiliated entities, and city-related institutions to help advance these efforts and adopt similar initiatives. The Department of Environmental Services is including climate change and sea level rise issues in its planning for new, upgraded, and rehabilitated facilities.

In October 2018, the City Council approved Resolution 18-221, CD1, FD1 supporting the 2018 Global Climate Action Summit "Fossil Fuel Free Streets" declaration, and requesting the City administration to create a Climate Action Plan that establishes comprehensive milestones to transition Oahu to 100 percent renewable energy on the path to carbon neutrality by 2045.

The United States Congress has appropriated \$220 million for fiscal year 2019 for a project to design and install flood control improvements within the Ala Wai watersheds to mitigate the risk of flooding, especially in the Manoa and Waikiki areas. There is a local funding contribution requirement, and the United States, State, and City and County are presently in discussions to determine whether agreements can be reached regarding the terms of the project design, construction, and funding to allow the project to proceed.

In May 2019 the City and County issued its Oahu Resilience Strategy. The Resilience Office, assisted by a 21-member Oahu Resilience Strategy Steering Committee and over 80 working group members meeting over an 18-month period, proposed 44 actions - specific policies or programs the City and County will deploy to achieve 12 resilience goals. Certain of these goals and actions are intended to improve natural disaster response and recovery and a climate resilient future for the City and County.

At this time the City and County is unable to predict whether, or to what extent, the foregoing measures will ameliorate the adverse impacts of climate change, which will likely be material and similar to the impacts experienced by other similarly situated municipalities.

Natural Disasters

It is possible that climate change increases the frequency and severity of natural disasters, including hurricanes and volcanic activity. In April 2018, severe rains resulted in flash flooding and mudslides in East Oahu, Windward Oahu and the Island of Kauai. In August 2018 Hurricane Lane, which peaked as a powerful Category 5 hurricane (one of only two ever recorded within 350 miles of the State), became the first major threat to the State since Hurricane Iniki made landfall in September 1992. Lane weakened significantly as it moved towards the State but it still caused severe mudslides and flash flooding on the Island of Hawai'i, where a maximum of 52 inches (1,321 mm) of rain was recorded. Between May 3, 2018 through approximately August 15, 2018 a volcanic event known as the 2018 lower Puna eruption occurred at the Kīlauea volcano located on the Island of Hawaii, over 200 miles from Oahu. The 2018 lower Puna eruption ultimately resulted in the destruction of over 700 homes, the evacuation of approximately 2,000 residents, temporary highway blockages and other adverse disruptions. The City and County of Honolulu is not directly affected by volcanic activity.

No assurances can be given as to the frequency or severity of any future natural disasters, nor what impact, individually or in the aggregate, such disasters may have on the State, the City and County, their residents or their overall financial condition.

Cybersecurity

The City and County, like many other large public and private entities, relies on a large and complex technology environment to conduct its operations. As a recipient and provider of personal, private, or sensitive information, the City and County may be affected by cybersecurity incidents that could result in adverse consequences to the City and County's computing and other digital networks and systems (collectively, the "City and County Technology"), which requires a response action to mitigate the consequences.

Cybersecurity incidents could result from unintentional events, or from deliberate attacks by unauthorized entities or individuals attempting to gain access to the City and County Technology for nefarious purposes including, but not limited to, the misappropriation of assets or information or causing operational disruption and damage. The City and County faces multiple cybersecurity threats including, but not limited to, hacking, phishing, viruses, malware and other attacks on the City and County Technology.

To mitigate the risk and/or damage from cybersecurity incidents or cyber-attacks, the City and County invests in multiple forms of cybersecurity and operational safeguards. The City contracts with third-party insurance providers for cyber insurance policies, which provide coverage for data protection risks, both for third-party claims and first party mitigation costs following a technology or cyber event.

PENDING WASTEWATER SYSTEM LITIGATION

The City and County and the Department generally are self-insured with respect to general liability claims. In the Fiscal Years ended June 30, 2016, 2017, 2018, and 2019, the Department reached settlements of lawsuits and claims related to the Wastewater System and paid with Judgment, Settlements and Losses general funds of \$8,472, \$3,653, \$7,123, and \$14,180 respectively.

A lawsuit has been filed against the City and County and the Department which has the potential to surpass the amount paid in the preceding Fiscal Years. This case involves claims by a construction contractor for delay and extended overhead costs. This case is in the discovery stage of litigation and liability has not been established at this time, and the City and County and the Department intend to vigorously defend against the claims.

In the opinion of the City and County's Corporation Counsel, the expected liability arising out of the pending litigation would not constitute a material impairment of the Department's financial position.

RATINGS

Fitch, Inc. and Moody's Investors Service have assigned ratings of "AA" and "Aa2," respectively, to the Senior Series 2019 Bonds and "AA-" and "Aa3," respectively, to the Junior Series 2019 Bonds. Such ratings reflect only the respective views of such organizations, and an explanation of the significance of such ratings may be obtained from the rating agency furnishing the same, at the following addresses: Fitch, Inc., One State Street Plaza, New York, New York 10004, and Moody's Investors Service, Inc., 99 Church Street, New York, New York 10007. There is no assurance that such ratings will continue for any given period of time or that they will not be revised or withdrawn entirely by such rating agencies, if in the judgment of such rating agencies, circumstances so warrant. Any such downward revision or withdrawal of such ratings may have an effect on the market price of the Series 2019 Bonds.

UNDERWRITING

The Series 2019 Bonds are being purchased for reoffering by BofA Securities Inc. and Piper Jaffray & Co., as Underwriters. The Underwriters have agreed to purchase the Senior Series 2019 Bonds at an aggregate purchase price of \$481,677,089.92, being an amount equal to the principal amount of the Senior Series 2019 Bonds, plus a net original issue premium of \$71,093,258.90, and less an underwriting discount of \$1,501,168.98. The Underwriters have agreed to purchase the Junior Series 2019 Bonds at an aggregate purchase

price of \$86,663,211.39, being an amount equal to the principal amount of the Junior Series 2019 Bonds, plus a net original issue premium of \$ 2,083,254.90, and less an underwriting discount of \$245,043.51.

The contracts of purchase with respect to the Senior Series 2019 Bonds and the Junior Series 2019 Bonds provide that the Underwriters will purchase all the Senior Series 2019 Bonds or the Junior Series 2019 Bonds if any are purchased. The initial public offering prices are set forth on the inside cover page of this Official Statement. The Underwriters may offer and sell the Series 2019 Bonds to certain dealers (including depositing the Series 2019 Bonds into investment trusts) and others at prices lower than the initial public offering prices stated on the cover page hereof. The public offering prices may be changed from time to time by the Underwriters.

BofA Securities, Inc., one of the underwriters of the Series 2019 Bonds, has entered into a distribution agreement with its affiliate Merrill Lynch, Pierce, Fenner & Smith Incorporated (“MLPF&S”). As part of this arrangement, BofA Securities, Inc. may distribute securities to MLPF&S, which may in turn distribute such securities to investors through the financial advisor network of MLPF&S. As part of this arrangement, BofA Securities, Inc. may compensate MLPF&S as a dealer for their selling efforts with respect to the Series 2019 Bonds.

The Underwriters and their respective affiliates are full service financial institutions engaged in various activities, which may include sales and trading, commercial and investment banking, advisory, investment management, investment research, principal investment, hedging, market making, brokerage and other financial and non-financial activities and services. In the various course of their various business activities, the Underwriters and their respective affiliates, officers, directors and employees may purchase, sell or hold a broad array of investments and actively trade securities, derivatives, loans, commodities, currencies, credit default swaps and other financial instruments for their own account and for the accounts of its customers, and such investment and trading activities may involve or relate to assets, securities and/or instruments of the City and County (directly, as collateral securing other obligations or otherwise) and/or persons and entities with relationships with the City and County. The Underwriters and their respective affiliates may also communicate independent investment recommendations, market color or trading ideas and/or publish or express independent research views in respect of such assets, securities or instruments and may at any time hold, or recommend to clients that they should acquire, long and/or short positions in such assets, securities and instruments; provided, however, that potential investors are advised that the offering of the Series 2019 Bonds is made only by means of the Official Statement. No dealer, broker, salesperson or other person has been authorized by the City and County to give any information or to make any representation other than as contained in the Official Statement.

TAX MATTERS

Senior Series 2019A Bonds, Senior Series 2019B Bonds and Junior Series 2019A Bonds

In the opinion of Orrick, Herrington & Sutcliffe LLP, Bond Counsel to the City and County (“Bond Counsel”), based upon an analysis of existing laws, regulations, rulings and court decisions and assuming, among other matters, the accuracy of certain representations and compliance with certain covenants, interest on the Senior Series 2019A Bonds, Senior Series 2019B Bonds and Junior Series 2019A Bonds (collectively, the “Tax-Exempt Bonds”) is excluded from gross income for federal income tax purposes under Section 103 of the Internal Revenue Code of 1986. In the further opinion of Bond Counsel, interest on the Tax-Exempt Bonds is not a specific preference item for purposes of the federal alternative minimum tax. Bond Counsel is of the opinion that the Tax-Exempt Bonds and the income therefrom are exempt from all taxation by the State of Hawaii or any county or other political subdivision thereof, except inheritance, transfer, estate and certain franchise taxes. A complete copy of the proposed forms of opinions of Bond Counsel are set forth in Appendix E hereto.

To the extent the issue price of any maturity of the Tax-Exempt Bonds is less than the amount to be paid at maturity of such Tax-Exempt Bonds (excluding amounts stated to be interest and payable at least annually over the term of such Tax-Exempt Bonds), the difference constitutes “original issue discount,” the accrual of which, to the extent properly allocable to each Beneficial Owner thereof, is treated as interest on the Tax-Exempt Bonds which is excluded from gross income for federal income tax purposes and State of Hawaii tax purposes. For this purpose, the issue price of a particular maturity of the Tax-Exempt Bonds is the first price at which a substantial amount of such maturity of the Tax-Exempt Bonds is sold to the public (excluding bond houses, brokers, or similar persons or organizations acting in the capacity of underwriters, placement agents or wholesalers). The original issue discount

with respect to any maturity of the Tax-Exempt Bonds accrues daily over the term to maturity of such Tax-Exempt Bonds on the basis of a constant interest rate compounded semiannually (with straight-line interpolations between compounding dates). The accruing original issue discount is added to the adjusted basis of such Tax-Exempt Bonds to determine taxable gain or loss upon disposition (including sale, redemption, or payment on maturity) of such Tax-Exempt Bonds. Beneficial Owners of the Tax-Exempt Bonds should consult their own tax advisors with respect to the tax consequences of ownership of Tax-Exempt Bonds with original issue discount, including the treatment of Beneficial Owners who do not purchase such Tax-Exempt Bonds in the original offering to the public at the first price at which a substantial amount of such Tax-Exempt Bonds is sold to the public.

Tax-Exempt Bonds purchased, whether at original issuance or otherwise, for an amount higher than their principal amount payable at maturity (or, in some cases, at their earlier call date) (“Premium Bonds”) will be treated as having amortizable bond premium. No deduction is allowable for the amortizable bond premium in the case of the bonds, like the Premium Bonds, the interest on which is excluded from gross income for federal income tax purposes. However, the amount of tax-exempt interest received, and a Beneficial Owner’s basis in a Premium Bond, will be reduced by the amount of amortizable bond premium properly allocable to such Beneficial Owner. Beneficial Owners of Premium Bonds should consult their own tax advisors with respect to the proper treatment of amortizable bond premium in their particular circumstances.

The Code imposes various restrictions, conditions and requirements relating to exclusion from gross income for federal income tax purposes of interest on obligations such as the Tax-Exempt Bonds. The City and County has made certain representations and covenanted to comply with certain restrictions, conditions and requirements designed to ensure that interest on the Tax-Exempt Bonds will not be included in federal gross income. Inaccuracy of these representations or failure to comply with these covenants may result in interest on the Tax-Exempt Bonds being included in gross income for federal income tax purposes, possibly from the date of original issuance of the Tax-Exempt Bonds. The opinion of Bond Counsel assumes the accuracy of these representations and compliance with these covenants. Bond Counsel has not undertaken to determine (or to inform any person) whether actions taken (or not taken), or events occurring (or not occurring), or any other matters coming to Bond Counsel’s attention after the date of issuance of the Tax-Exempt Bonds may adversely affect the value of, or the tax status of interest on, the Tax-Exempt Bonds. Accordingly, the opinion of Bond Counsel is not intended to, and may not, be relied upon in connection with any such actions, events or matters.

Although Bond Counsel is of the opinion that interest on the Tax-Exempt Bonds is excluded from gross income for federal income tax purposes and that the Tax-Exempt Bonds and the income therefrom are exempt from taxation by the State or any political subdivision thereof, except inheritance, transfer, estate and certain franchise taxes, the ownership or disposition of, or the accrual or receipt of amounts treated as interest on, the Tax-Exempt Bonds may otherwise affect a Beneficial Owner’s federal, state or local tax liability. The nature and extent of these other tax consequences depends upon the particular tax status of the Beneficial Owner or the Beneficial Owner’s other items of income or deduction. Bond Counsel expresses no opinion regarding any such other tax consequences.

Current and future legislative proposals, if enacted into law, clarification of the Code or court decisions may cause interest on the Tax-Exempt Bonds to be subject, directly or indirectly, in whole or in part, to federal income taxation or to be subject to or exempted from state income taxation, or otherwise prevent Beneficial Owners from realizing the full current benefit of the tax status of such interest. The introduction or enactment of any such legislative proposals or clarification of the Code or court decisions may also affect, perhaps significantly, the market price for, or marketability of, the Tax-Exempt Bonds. Prospective purchasers of the Tax-Exempt Bonds should consult their own tax advisors regarding the potential impact of any pending or proposed federal or state tax legislation, regulations or litigation, as to which Bond Counsel is expected to express no opinion.

The opinion of Bond Counsel for the Tax-Exempt Bonds is based on current legal authority, covers certain matters not directly addressed by such authorities, and represents Bond Counsel’s judgment as to the proper treatment of the Tax-Exempt Bonds for federal income tax purposes. It is not binding on the Internal Revenue Service (“IRS”) or the courts. Furthermore, Bond Counsel cannot give and has not given any opinion or assurance about the future activities of the City and County, or about the effect of future changes in the Code, the applicable regulations, the interpretation thereof or the enforcement thereof by the IRS. The City and County has covenanted, however, to comply with the requirements of the Code.

Bond Counsel's engagement with respect to the Tax-Exempt Bonds ends with the issuance of the Tax-Exempt Bonds, and, unless separately engaged, Bond Counsel is not obligated to defend the City and County or the Beneficial Owners regarding the tax-exempt status of the Tax-Exempt Bonds in the event of an audit examination by the IRS. Under current procedures, parties other than the City and County and their appointed counsel, including the Beneficial Owners, would have little, if any, right to participate in the audit examination process. Moreover, because achieving judicial review in connection with an audit examination of tax-exempt bonds is difficult, obtaining an independent review of IRS positions with which the City and County legitimately disagrees, may not be practicable. Any action of the IRS, including but not limited to selection of the Tax-Exempt Bonds for audit, or the course or result of such audit, or an audit of bonds presenting similar tax issues may affect the market price for, or the marketability of, the Tax-Exempt Bonds, and may cause the City and County or the Beneficial Owners to incur significant expense.

Senior Series 2019C Bonds and Junior Series 2019B Bonds

In the opinion of Bond Counsel, based upon an analysis of existing laws, regulations, rulings and court decisions, and assuming, among other matters, the accuracy of certain representations and compliance with certain covenants, the Senior Series 2019C Bonds and the Junior Series 2019B Bonds (also defined herein collectively as the "Taxable Bonds") and the income therefrom are exempt from all taxation by the State or any county or other political subdivision thereof, except inheritance, transfer, estate and certain franchise taxes. Bond Counsel is also of the opinion that interest on the Taxable Bonds is not excluded from gross income for federal income tax purposes under Section 103 of the Code. Bond Counsel expresses no opinion regarding any other tax consequences relating to the ownership or disposition of, or the amount, accrual or receipt of interest on, the Taxable Bonds. The proposed form of opinion of Bond Counsel is contained in Appendix E hereto.

The following discussion summarizes certain U.S. federal tax considerations generally applicable to holders of the Taxable Bonds that acquire their Taxable Bonds in the initial offering. The discussion below is based upon laws, regulations, rulings, and decisions in effect and available on the date hereof, all of which are subject to change, possibly with retroactive effect. Prospective investors should note that no rulings have been or are expected to be sought from the IRS with respect to any of the U.S. federal tax consequences discussed below, and no assurance can be given that the IRS will not take contrary positions. Further, the following discussion does not deal with U.S. tax consequences applicable to any given investor, nor does it address the U.S. tax considerations applicable to all categories of investors, some of which may be subject to special taxing rules (regardless of whether or not such investors constitute U.S. Holders), such as certain U.S. expatriates, banks, REITs, RICs, insurance companies, tax-exempt organizations, dealers or traders in securities or currencies, partnerships, S corporations, estates and trusts, investors that hold their Taxable Bonds as part of a hedge, straddle or an integrated or conversion transaction, or investors whose "functional currency" is not the U.S. dollar. Furthermore, it does not address (i) alternative minimum tax consequences, (ii) the net investment income tax imposed under Section 1411 of the Code, or (iii) the indirect effects on persons who hold equity interests in a holder. This summary also does not consider the taxation of the Taxable Bonds under state, local or non-U.S. tax laws. In addition, this summary generally is limited to U.S. tax considerations applicable to investors that acquire their Taxable Bonds pursuant to this offering for the issue price that is applicable to such Taxable Bonds (i.e., the price at which a substantial amount of the Taxable Bonds are sold to the public) and who will hold their Taxable Bonds as "capital assets" within the meaning of Section 1221 of the Code.

As used herein, "U.S. Holder" means a beneficial owner of a Taxable Bond that for U.S. federal income tax purposes is an individual citizen or resident of the United States, a corporation or other entity taxable as a corporation created or organized in or under the laws of the United States or any state thereof (including the District of Columbia), an estate the income of which is subject to U.S. federal income taxation regardless of its source or a trust where a court within the United States is able to exercise primary supervision over the administration of the trust and one or more United States persons (as defined in the Code) have the authority to control all substantial decisions of the trust (or a trust that has made a valid election under U.S. Treasury Regulations to be treated as a domestic trust). As used herein, "Non-U.S. Holder" generally means a beneficial owner of a Taxable Bond (other than a partnership) that is not a U.S. Holder. If a partnership holds Taxable Bonds, the tax treatment of such partnership or a partner in such partnership generally will depend upon the status of the partner and upon the activities of the partnership. Partnerships holding Taxable Bonds, and partners in such partnerships, should consult their own tax advisors regarding the tax consequences of an investment in the Taxable Bonds (including their status as U.S. Holders or Non-U.S. Holders).

Notwithstanding the rules described below, it should be noted that certain taxpayers that are required to prepare certified financial statements or file financial statements with certain regulatory or governmental agencies may be required to recognize income, gain and loss with respect to the Taxable Bonds at the time that such income, gain or loss is recognized on such financial statements instead of under the rules described below (in the case of original issue discount, such requirements are only effective for tax years beginning after December 31, 2018).

Prospective investors should consult their own tax advisors in determining the U.S. federal, state, local or non-U.S. tax consequences to them from the purchase, ownership and disposition of the Taxable Bonds in light of their particular circumstances.

U.S. Holders

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

To the extent that the issue price of any maturity of the Taxable Bonds is less than the amount to be paid at maturity of such Taxable Bonds (excluding amounts stated to be interest and payable at least annually over the term of such Taxable Bonds) by more than a de minimis amount, the difference may constitute original issue discount ("OID"). U.S. Holders of Taxable Bonds will be required to include OID in income for U.S. federal income tax purposes as it accrues, in accordance with a constant yield method based on a compounding of interest (which may be before the receipt of cash payments attributable to such income). Under this method, U.S. Holders generally will be required to include in income increasingly greater amounts of OID in successive accrual periods.

Taxable Bonds purchased for an amount in excess of the principal amount payable at maturity (or, in some cases, at their earlier call date) will be treated as issued at a premium. A U.S. Holder of a Taxable Bond issued at a premium may make an election, applicable to all debt securities purchased at a premium by such U.S. Holder, to amortize such premium, using a constant yield method over the term of such Taxable Bond.

Sale or Other Taxable Disposition of the Taxable Bonds. Unless a nonrecognition provision of the Code applies, the sale, exchange, redemption, retirement (including pursuant to an offer by the City and County) or other disposition of a Taxable Bond will be a taxable event for U.S. federal income tax purposes. In such event, in general, a U.S. Holder of a Taxable Bond will recognize gain or loss equal to the difference between (i) the amount of cash plus the fair market value of property received (except to the extent attributable to accrued but unpaid interest on the Taxable Bond, which will be taxed in the manner described above) and (ii) the U.S. Holder's adjusted U.S. federal income tax basis in the Taxable Bond (generally, the purchase price paid by the U.S. Holder for the Taxable Bond, decreased by any amortized premium, and increased by the amount of any OID previously included in income by such U.S. Holder with respect to such Taxable Bond). Any such gain or loss generally will be capital gain or loss. In the case of a non-corporate U.S. Holder of the Taxable Bonds, the maximum marginal U.S. federal income tax rate applicable to any such gain will be lower than the maximum marginal U.S. federal income tax rate applicable to ordinary income if such U.S. holder's holding period for the Taxable Bonds exceeds one year. The deductibility of capital losses is subject to limitations.

Defeasance of the Taxable Bonds. If the City and County defeases any Taxable Bond, the Taxable Bond may be deemed to be retired and "reissued" for U.S. federal income tax purposes as a result of the defeasance. In that event, in general, a holder will recognize taxable gain or loss equal to the difference between (i) the amount realized from the deemed sale, exchange or retirement (less any accrued qualified stated interest which will be taxable as such) and (ii) the holder's adjusted tax basis in the Taxable Bond.

Information Reporting and Backup Withholding. Payments on the Taxable Bonds generally will be subject to U.S. information reporting and possibly to "backup withholding." Under Section 3406 of the Code and applicable U.S. Treasury Regulations issued thereunder, a non-corporate U.S. Holder of the Taxable Bonds may be subject to backup withholding at the current rate of 24% with respect to "reportable payments," which include interest paid on the Taxable Bonds and the gross proceeds of a sale, exchange, redemption, retirement or other disposition of the Taxable Bonds. The payor will be required to deduct and withhold the prescribed amounts if (i) the payee fails to furnish a U.S. taxpayer identification number ("TIN") to the payor in the manner required, (ii) the

IRS notifies the payor that the TIN furnished by the payee is incorrect, (iii) there has been a “notified payee underreporting” described in Section 3406(c) of the Code or (iv) the payee fails to certify under penalty of perjury that the payee is not subject to withholding under Section 3406(a)(1)(C) of the Code. Amounts withheld under the backup withholding rules may be refunded or credited against the U.S. Holder’s federal income tax liability, if any, provided that the required information is timely furnished to the IRS. Certain U.S. holders (including among others, corporations and certain tax-exempt organizations) are not subject to backup withholding. A holder’s failure to comply with the backup withholding rules may result in the imposition of penalties by the IRS.

Non-U.S. Holders

Interest. Subject to the discussions below under the headings “Information Reporting and Backup Withholding” and “FATCA,” payments of principal of, and interest on, any Taxable Bond to a Non-U.S. Holder, other than (1) a controlled foreign corporation, a such term is defined in the Code, which is related to the City and County through stock ownership and (2) a bank which acquires such Taxable Bond in consideration of an extension of credit made pursuant to a loan agreement entered into in the ordinary course of business, will not be subject to any U.S. federal withholding tax provided that the beneficial owner of the Taxable Bond provides a certification completed in compliance with applicable statutory and regulatory requirements, which requirements are discussed below under the heading “Information Reporting and Backup Withholding,” or an exemption is otherwise established.

Disposition of the Taxable Bonds. Subject to the discussions below under the headings “Information Reporting and Backup Withholding” and “FATCA,” any gain realized by a Non-U.S. Holder upon the sale, exchange, redemption, retirement (including pursuant to an offer by the City and County or a deemed retirement due to defeasance of the Taxable Bonds) or other disposition of a Taxable Bond generally will not be subject to U.S. federal income tax, unless (i) such gain is effectively connected with the conduct by such Non-U.S. Holder of a trade or business within the United States; or (ii) in the case of any gain realized by an individual Non-U.S. Holder, such holder is present in the United States for 183 days or more in the taxable year of such sale, exchange, redemption, retirement (including pursuant to an offer by the City and County) or other disposition and certain other conditions are met.

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

Information Reporting and Backup Withholding. Subject to the discussion below under the heading “FATCA,” under current U.S. Treasury Regulations, payments of principal and interest on any Taxable Bonds to a holder that is not a United States person will not be subject to any backup withholding tax requirements if the beneficial owner of the Taxable Bond or a financial institution holding the Taxable Bond on behalf of the beneficial owner in the ordinary course of its trade or business provides an appropriate certification to the payor and the payor does not have actual knowledge that the certification is false. If a beneficial owner provides the certification, the certification must give the name and address of such owner, state that such owner is not a United States person, or, in the case of an individual, that such owner is neither a citizen nor a resident of the United States, and the owner must sign the certificate under penalties of perjury. The current backup withholding tax rate is 24%.

Foreign Account Tax Compliance Act (“FATCA”)—U.S. Holders and Non-U.S. Holders

Sections 1471 through 1474 of the Code, impose a 30% withholding tax on certain types of payments made to foreign financial institutions, unless the foreign financial institution enters into an agreement with the U.S. Treasury to, among other things, undertake to identify accounts held by certain U.S. persons or U.S.-owned entities, annually report certain information about such accounts, and withhold 30% on payments to account holders whose actions prevent it from complying with these and other reporting requirements, or unless the foreign financial institution is otherwise exempt from those requirements. In addition, FATCA imposes a 30% withholding tax on the same types of payments to a non-financial foreign entity unless the entity certifies that it does not have any substantial U.S. owners or the entity furnishes identifying information regarding each substantial U.S. owner. Under current guidance, failure to comply with the additional certification, information reporting and other specified

requirements imposed under FATCA could result in the 30% withholding tax being imposed on payments of interest on the Bonds. In general, withholding under FATCA currently applies to payments of U.S. source interest (including OID) and, under current guidance, will apply to certain “passthru” payments no earlier than the date that is two years after publication of final U.S. Treasury Regulations defining the term “foreign passthru payments.” Prospective investors should consult their own tax advisors regarding FATCA and its effect on them.

The foregoing summary is included herein for general information only and does not discuss all aspects of U.S. federal taxation that may be relevant to a particular holder of Taxable Bonds in light of the holder’s particular circumstances and income tax situation. Prospective investors are urged to consult their own tax advisors as to any tax consequences to them from the purchase, ownership and disposition of Taxable Bonds, including the application and effect of state, local, non-U.S., and other tax laws.

VERIFICATION

Causey Demgen & Moore P.C., independent public accountants (the “Verification Agent”), will verify the mathematical accuracy of: (a) certain computations demonstrating the sufficiency of the amounts to be deposited into the Senior 2019B Refunding Escrow Fund, the Senior 2019C Refunding Escrow Fund, the Junior 2019A Refunding Escrow Fund and the Junior 2019B Refunding Escrow Fund to pay the principal of, interest on, and redemption price of the Senior 2019B Refunded Bonds, the Senior 2019C Refunded Bonds, the Junior 2019A Refunded Bonds and the Junior 2019B Refunded Bonds; and (b) certain computations to be relied upon by Bond Counsel for purposes of its opinion to the effect that the interest on the Bonds is excluded from gross income for federal income tax purposes. Such verification will be based in part on schedules and information provided by the Underwriters with respect to the foregoing computations.

APPROVAL OF LEGAL PROCEEDINGS

The validity of the Series 2019 Bonds and certain other legal matters are subject to the approving opinions of Orrick, Herrington & Sutcliffe LLP, Bond Counsel to the City and County. Complete copies of the proposed forms of Bond Counsel opinions are contained in Appendix E. Bond Counsel undertakes no responsibility for the accuracy, completeness or fairness of this Official Statement. Certain legal matters will be passed upon for the Underwriters by their co-counsel, Dentons US LLP, Honolulu, Hawaii, and Katten Muchin Rosenman LLP, New York, New York.

CONTINUING DISCLOSURE

In order to assist the Underwriters in complying with Rule 15c2-12 promulgated by the Securities and Exchange Commission (“Rule 15c2-12”), the City and County will undertake in a Continuing Disclosure Certificate, the form of which is set forth in Appendix D (the “Continuing Disclosure Certificate”), to provide to the Municipal Securities Rulemaking Board on an annual basis certain financial and operating data concerning the Department, financial statements, notice of certain events and certain other notices, all as described in the Continuing Disclosure Certificate, provided that if the inclusion or format of such information is changed in any future official statement, annual reports provided by the City and County thereafter may instead contain or include by reference information of the type included in that official statement as so changed or if different the type of equivalent information included in the most recent official statement. The undertaking is an obligation of the Department that is enforceable as described in the Continuing Disclosure Certificate. Beneficial Owners of the Bonds are third party beneficiaries of the Continuing Disclosure Certificate. The execution of the Continuing Disclosure Certificate is a condition precedent to the obligation of the Underwriters to purchase the Series 2019 Bonds.

The City and County has policies and procedures in place to enhance compliance with its continuing disclosure undertakings, including its undertaking in the Continuing Disclosure Certificate. The City and County also has engaged a third-party service provider to assist in the preparation and filing of annual reports and notices of listed events under the Continuing Disclosure Certificate and previous continuing disclosure undertakings.

A failure by the City and County to comply with the Continuing Disclosure Certificate will not constitute an event of default of the Series 2019 Bonds, although any Beneficial Owner of the Series 2019 Bonds may bring action to compel the City and County to comply with its obligations under the Continuing Disclosure

Certificate. Any such failure must be reported in accordance with Rule 15c2-12 and must be considered by any broker, dealer or municipal securities dealer before recommending the purchase or sale of the Series 2019 Bonds in the secondary market. Consequently, such a failure may adversely affect the transferability and liquidity of the Series 2019 Bonds and their market price.

MISCELLANEOUS

Additional information may be obtained, upon request, from either the Department of Budget and Fiscal Services or the Department of Environmental Services of the City and County.

Reference in this Official Statement to the Act, the City Charter, the Bond Resolutions, the Series 2019 Resolutions and the Series 2019 Certificates do not purport to be complete. Refer to the Act, the City Charter, the Bond Resolutions, the Series 2019 Resolutions and the Series 2019 Certificates for full and complete details of their provisions. Copies of the City Charter, the Bond Resolutions and the Series 2019 Resolutions are on file with the City Clerk of the City and County.

The agreements of the City and County with holders of the Series 2019 Bonds are fully set forth in the Bond Resolution and the Series 2019 Resolution. Neither any advertisement of the Series 2019 Bonds nor this Official Statement is to be construed as a contract with purchasers of the Series 2019 Bonds.

Any statements in this Official Statement involving matters of opinion or of estimates, whether or not expressly stated, are intended merely as expressions of opinion or estimates, and not as representations of fact, and no representation is made that any of the estimates will be realized.

The City and County's use of certain information included in this Official Statement has been furnished or reviewed and authorized by the sources described below. While the City and County believes that these sources are reliable, the City and County has not independently verified this information and does not guarantee the accuracy or completeness of the information furnished by the respective sources. The City and County is relying on certificates from certain sources, to be delivered at or prior to the time of delivery of the Series 2019 Bonds, as to the accuracy of such information provided or authorized by such sources.

The information regarding DTC and DTC's book-entry system has been furnished by DTC.

The financial statements of the City and County as of June 30, 2018, relating to the Sewer Fund, together with the auditor's report thereon, may be found at <https://www.honolulu.gov/env>.

The execution and delivery of this Official Statement by the Director of Environmental Services and the Director of Budget and Fiscal Services have been duly authorized by the City and County.

/s/ Nelson H. Koyanagi, Jr.
Director of Budget and Fiscal Services
City and County of Honolulu

/s/ Lori M.K. Kahikina, P.E.
Director of Environmental Services
City and County of Honolulu

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APPENDIX A

ECONOMIC AND DEMOGRAPHIC FACTORS

Introduction

The City and County of Honolulu, which includes the entire island of Oahu and a number of small outlying islands, is a major metropolitan city with a resident population of 980,080 (approximately 69% of the state's population) as of July 1, 2018. Honolulu's underlying economy is strong, supported by several diversified areas, which include tourism, the federal government and military operations, State and local governments, manufacturing, construction, real estate, education, research and science, trade and services, communications, finance and transportation.

Oahu is situated between 21 degrees and 22 degrees north latitude, just below the Tropic of Cancer. The climate has an average mean winter temperature of 70.2 degrees and an average mean summer temperature of 78.6 degrees. Average rainfall varies widely from one area of Oahu to another. Rainfall is comparatively light in the leeward coastal area where the larger part of the population is located. Waikiki, located on the leeward side of Oahu, has a dry climate with annual precipitation averaging about 27 inches; precipitation in the upper reaches of the Koolau mountains averages about 400 inches a year and provides an adequate supply of water for irrigation use and retention in large subterranean reservoirs for household and industrial uses.

Oahu is one of the oldest of the Hawaiian Islands. It has no active volcanos, and the last volcanic eruptions, which were minor, are believed to have occurred more than 70,000 year ago. The last major volcanic eruption on Oahu was Ko'olau which is believed to have ended approximately 1.8 million years ago.

The following material pertaining to economic factors in the City and County has been excerpted from the Hawaii State Department of Business, Economic Development and Tourism ("DBEDT") Third Quarter 2019 Quarterly Statistical Economic Report ("QSER") or from other materials prepared by DBEDT, some of which may be found at <http://dbedt.hawaii.gov/>. Certain visitor industry statistics have been excerpted from Hawaii Tourism Authority publications.

Certain Economic Indicators

Employment. The following table presents certain annual employment statistics for the City and County for 2015 through 2018 and the second quarter of 2018 and 2019. As indicated below, the number of unemployed in the City and County increased by 12.7% in the second quarter of 2019 from the same period in 2018. The City and County's unemployment rate of 2.7% in the second quarter of 2019 compares favorably to the unemployment rate for the State (2.5% in the second quarter of 2018 and 2.9% in the second quarter of 2019) and for the nation as a whole (3.8% in the second quarter of 2018 and 3.7% in the second quarter of 2019).

Table I
EMPLOYMENT STATISTICS

	Annual Average ¹				2 nd Quarter		
	2015	2016	2017	2018	2018	2019	% Change Year Ago
Civilian Labor Force	466,650	470,100	469,400	465,200	465,850	454,450	-2.4%
Civilian Employment	451,050	457,050	458,550	454,350	454,800	442,100	-2.8%
Unemployed	15,600	13,000	10,850	10,850	11,000	12,400	12.7%
Unemployment Rate	3.3%	2.8%	2.3%	2.3%	2.4%	2.7%	0.3%

¹ Data benchmarked by DLIR in March 2018 and reflect revised population controls and model reestimation.
Source: State of Hawaii, Department of Business, Economic Development & Tourism.

Personal Income. In recent years, per capita personal income for Honolulu residents has consistently been higher than for the State of Hawaii and the United States as a whole. The following table presents the per capita personal income for Honolulu residents in comparison to the State and the country for the years 2014 through 2018. As indicated, the per capital personal income in the City and County in 2017 was \$56,728, representing a 3.7% increase over 2016.

Table II
PER CAPITA PERSONAL INCOME

<u>Year</u>	<u>Honolulu</u>	<u>State of Hawaii</u>	<u>United States</u>
2014	\$50,937	\$47,283	\$47,060
2015	\$53,027	\$49,437	\$48,985
2016	\$54,725	\$50,872	\$49,883
2017	\$56,728	\$52,910	\$51,731
2018	N/A	\$54,565	\$53,712

Source: U.S. Department of Commerce, Bureau of Economic Analysis.

Housing Market. Since the global economic downturn in 2008 and 2009, average resale prices in the Honolulu housing market have rebounded. The following table presents the annual average resale prices for single-family homes and condominiums in Honolulu from 2014 through 2018, and the quarterly average resale prices for single-family homes and condominiums in Honolulu during the second quarters of 2018 and 2019.

Table III
AVERAGE RESALE PRICES

<u>Year</u>	<u>Single Family Homes</u>		<u>Condominiums</u>	
	<u>Average Resale Price</u>	<u>% Change</u>	<u>Average Resale Price</u>	<u>% Change</u>
2014	\$ 822,240	3.9	\$460,893	17.1
2015	\$ 863,969	5.1	\$435,810	-5.4
2016	\$ 884,427	2.4	\$572,223	31.3
2017	\$ 945,206	6.9	\$619,177	8.2
2018	\$1,032,415	9.2	\$615,019	-0.7
2018 Q2	\$1,081,121	22.9	\$599,769	22.4
2019 Q2	\$ 889,002	-17.8	\$529,330	-11.7

Source: State of Hawaii Department of Business, Economic Development and Tourism.

State and County Governments

With Honolulu as the State capital, most State government activity is concentrated on the island of Oahu. In 2018, the State government generated 73,100 jobs, of which more than 75% were located on Oahu. The largest number of State employees work in public education and the State university system, with approximately 83% of these employed on Oahu. In addition, the City and County government employed approximately 12,100 individuals in the first quarter of 2019.

Federal Government and Military

The federal government plays an important role in Hawaii's economy. According to the most recent data available from the U.S. Bureau of Economic Analysis, the total compensation of employees ("COE") of federal government employees in Hawaii was approximately \$8.6 billion in 2017, up 1% from the previous year. The total COE of combined military and civilian federal employees in Hawaii accounted for about 18.1% of Hawaii's total COE in 2016. Between 2007 and 2017, the annual average compounded growth rate for COE was 3.5% for federal civilian and 1.9% for military personnel in Hawaii. Military personnel accounted for 55.7% of the total federal COE in Hawaii in 2017. The federal government accounted for about 11% of State GDP in 2016, a majority

of which is defense related. Hawaii was the seventh largest state for per capita Federal spending at \$1.85 per dollar of taxes as of fiscal year 2016.

The Hawaii based Pacific Command is responsible for over 50% of global command activity and is essential to national security. Over 90% of the U.S. military presence in Hawaii is on Oahu.

In total, the defense industry provides over 102,000 jobs with annual household incomes totaling \$8.7 billion. Generally, the median earnings for active-duty service members and Department of Defense (“DoD”) civilians are higher than that of other full-time employees in Hawaii. Military construction projects total \$627 million for fiscal year 2018 and fiscal year 2019.

The U.S. Army recently completed a Supplemental Programmatic Environmental Assessment for its Army 2020 force structure realignment. The assessment evaluates a scenario in which the Army would eliminate 16,606 soldiers and civilians from Schofield Barracks and 3,786 from Fort Shafter, both of which are located on the island of Oahu. In response, the Chamber of Commerce of Hawaii’s Military Affairs Council launched a campaign to maintain the number of military members in Hawaii and acquired signatures on a petition to keep troops in Hawaii. The Army held a “listening session” on the impact of reducing forces in Hawaii in January 2015. The DoD is considering relocating 2,700 Marines from Okinawa to Hawaii between 2027 and 2031.

The Pearl Harbor Naval Shipyard is the largest industrial/repair complex and employer in Hawaii, with a workforce of nearly 5,200 civilians and contributes more than \$925 million into Hawaii’s economy annually.

Hawaii continues to host RIMPAC (Rim of the Pacific Exercise) held during even-numbered years, to enhance interoperability between Pacific Rim Armed Forces. Twenty-five nations, more than 51 surface ships and submarines, 200 aircraft and 25,000 personnel participated in RIMPAC 2018.

Future levels of federal funding (including defense funding) in Hawaii are subject to potential spending cutbacks and deferrals that may be implemented to reduce the federal budget deficit. The federal budget sequestration has not had a material adverse effect on the City and County or the State.

Finance

As the financial center of the State of Hawaii, Honolulu is served by a full range of financial institutions, including banks, savings and loan associations and financial services companies. Honolulu currently has twelve institutions in the market, comprised of Hawaii -chartered banks, a Hawaii -chartered financial services company, federally-chartered savings banks, a national bank, and interstate branch banks with combined deposits totaling \$44.8 billion as of June 30, 2018, as reported by the Federal Deposit Insurance Corporation.

Transportation

All parts of the City and County are connected by a comprehensive network of roads, highways, and freeways, and all of the populated areas of the island are served by a bus transit system (TheBus) with ridership of approximately 66 million annually. According to the 2019 Public Transportation Fact Book published by the American Public Transportation Association, the City and County hosts the 24th largest transit agency in the nation and the 12th largest bus agency in an urbanized area.

The City and County is constructing a new 20-mile fixed guideway mass transit system to provide rail service along the island’s east-west corridor between Kapolei and downtown Honolulu (Ala Moana Center). Over 60% of the City and County’s population currently lives within the area served by this corridor, and this area is projected to continue to grow faster than the rest of Oahu.

Honolulu is the hub of air and sea transportation for the entire Pacific. Honolulu Daniel K. Inouye International Airport (HNL) is located approximately five miles by highway from the center of downtown Honolulu. The Federal Aviation Administration reported that HNL was the 28th largest U.S. Airport in 2017 based on the number of enplaned passengers.

Honolulu Harbor is the hub of the Statewide Commercial Harbors System. It serves as a major distribution point of overseas cargo to the neighbor islands and is the primary consolidation center for the export of overseas cargo. The U.S. Department of Transportation, Bureau of Transportation Statistics, Port Performance Freight Statistics Program, Annual Report to Congress 2018, ranks Honolulu Harbor among the top 25 ports in the country in 2017 by container cargo throughput, handling 2,529 total vessel calls, 14.8 million short tons of foreign and domestic cargo, and 1.2 million twenty-foot equivalent units of container cargo. The State Department of Transportation, Harbor Division manages, maintains and operates the State's Harbors Systems to provide for the efficient movement of cargo and passengers. The U.S. military moves most of its cargo through the State's Harbors System.

Construction

Construction was one of the major contributors to job growth in Hawaii over the past few years. The following table shows the estimated value of construction authorizations for private buildings for the City and County and for the State as a whole for the last five years and the second quarters of 2018 and 2019.

Table IV
ESTIMATED VALUE OF BUILDING PERMITS
(Dollars in Thousands)

Year	State	Change from Prior Year	City & County of Honolulu	Change from Prior Period
2014	\$3,315,078	21.9%	\$2,072,202	11.0%
2015	3,963,607	19.6%	2,436,954	17.6%
2016	3,240,649	-18.2%	2,141,467	-12.1%
2017	3,127,828	-3.5%	2,007,815	-6.2%
2018	3,268,292	4.5%	1,985,648	-1.1%
2018 Q2	1,108,592	35.0%	755,318	35.5%
2019 Q2	808,957	-27.0%	525,065	-30.5%

*Source: State of Hawaii Department of Business, Economic Development and Tourism
(compiled from data collected by county building departments).*

Significant development projects which were recently completed, are currently under construction, or are in the later planning stages on the island of Oahu include:

- The Airports Division's modernization program, which commenced in 2013, is ongoing. The program includes significant capital improvements such as expanding Daniel K. Inouye International Airport's Inter-Island terminal and main terminal, constructing consolidated car rental facilities at Daniel K. Inouye International Airport and Kahului, Maui, and installing energy saving equipment in airports statewide. Additionally, in February 2018 plans were announced for the construction of a new approximately 800,000 square foot Diamond Head concourse at Daniel K. Inouye International Airport which is anticipated to add 12-14 wide body gates in the initial phase and be expandable to up to 21 gates as well as a new Customs and Border Protection facility and improved security and baggage screening facilities for the Transportation Security Administration.
- The University of Hawaii is in the process of constructing a new 72,000 square feet state-of-the-art LEED Silver Life Sciences Building which will house teaching, laboratory and office support spaces for the College of Natural Sciences biology, botany and microbiology departments, along with the Pacific Biosciences Research Center.
- The Howard Hughes Corporation is developing a master-planned community on 60 acres in Kakaako known as Ward Village. The development as approved to date will include 4,000 high-rise residences, including the Ke Kilohana, A`ali`i and Ko`ula towers, and more than one million square feet of retail and commercial space, including the recently completed Nobu and Merriman's restaurants and a new multi-story Whole Foods supermarket. To date over 480 luxury residential units have been completed and over 1,600 are currently under construction.

- General Growth Properties recently completed a \$572 million expansion and renovation of its Ala Moana Shopping Center. The expansion included the addition of a new 167,000-square-foot, three-level Bloomingdale's store, a new 186,000-square-foot, three-level Nordstrom store and an additional 300,000 square feet of in-line mall retail space. Attached to the shopping center are two luxury residential apartment projects built over parking podiums. One Ala Moana, a 23-story tower containing 206 luxury residential units, was completed in late 2014. Park Lane, a nine-story complex containing 215 luxury residential units, was completed in 2017. Adjacent to the shopping center, SamKoo Development has completed construction of 485 additional luxury residential units.
- Downtown Capital recently completed the redevelopment of the former Honolulu Advertiser building and adjacent property into a \$400 million, two-tower workforce housing condominium project containing 1,045 units.
- Castle & Cooke Homes Hawaii recently began construction on Koa Ridge, a \$2.2 billion housing and commercial development on the central Oahu plateau, which will consist of 3,500 single- and multi-family homes (including 30% affordable homes), a medical center, shopping outlets and recreation areas on 576 acres between Mililani and Waipio.
- D.R. Horton – Schuler Homes recently began developing Ho'opili in West Oahu, which will consist of 11,750 single- and multi-family homes, commercial and light industrial space, community facilities, three elementary schools, one middle school, a high school, parks and open space, and agricultural areas on 1,289 acres of land.
- Hoakalei Resort – Haseko Development is building a 140-acre residential resort on the southwest shore of Oahu with 887 homes and townhouses completed and more planned. The project also includes a completed signature Ernie Els golf course and a recreational lagoon under construction.
- Ka Makana Ali'i – DeBartolo Development recently completed the first phase of a 1.4 million square-foot, \$500 million shopping center in East Kapolei, including 150 shops and restaurants, two hotels and Macy's as an anchor tenant.
- Avalon Group is currently developing the 123-acre Kapolei Business Park West (West Oahu) with 47 industrial lots and the 54-acre Kapolei Business Park Phase 2. An additional expansion of the 3-acre Kapolei Pacific Center will include general and medical offices – existing tenants include the Social Security Administration.
- American Savings Bank, FSB has completed in March 2019 a new 373,000 square foot, 11-story headquarters building in Downtown Honolulu. The building contains five levels of office space and six levels of parking. Its pre-cast design allows for a collaborative and dynamic working environment with open-floor layouts on each office floor.
- Artspace is currently developing Ola Ka Ilima Artspace lofts, a \$53 million, 84 unit condominium project.
- Manaolana Partners and Kajima Kagaku USA Inc. is currently developing Manaolana Place, a 36-story, mixed use tower that will include a Mandarin Oriental hotel and luxury condominiums near the Hawaii Convention Center.
- Sam Koo Development is currently developing the Central Ala Moana, a 485 unit residential condominium project.
- Oliver McMillan is currently developing the Lilia Waikiki, comprised of a new 402 unit residential tower and renovation of 53 existing units.
- Kamehameha Schools is proposing the Moiliili Gateway project, a redevelopment of 6.5 acres along University Avenue.

- ProsPac Towers is a 450 unit mixed use hotel and residential project currently under development.
- Ililani LLC is developing the 328 unit Ililani affordable housing project in Kakaako.
- Avalon Group recently received approvals for construction of the Sky Ala Moana Towers, a mixed-use project, including 774 condominium units.
- Cuzco Development is currently developing Keeaumoku Towers, a 980 unit residential condominium project.

Trade and Services

The economy of both the City and County and the State as a whole is heavily trade and service oriented, largely because of the heavy volume of purchases by visitors to the State. According to the State's Department of Taxation, the State's general excise and use tax base for trade activities exceeded \$36.36 billion and for service activities exceeded \$16.66 billion in 2019. In the second quarter of 2019, general excise and use tax revenues (excluding the City and County's surcharge) were \$898.4 million, an increase of 21.3% compared to the same period last year. Of the State's 660,000 non-agricultural jobs in the second quarter of 2019, retail and wholesale trade together accounted for 86,600 jobs, and professional and business services, financial activities, educational services, healthcare and social assistance services, food and accommodation services, and other services were other major employment sectors. As of May 2019, professional and business services accounted for approximately 11.1% of jobs in the City and County, health care and social assistance accounted for approximately 9.2% of jobs, food serve for 8.3%, retail trade for 7.8% and federal, state and county government for 33.3% of non-agricultural jobs.

Agriculture and Diversified Manufacturing

Agriculture and manufacturing are relatively small sectors in the State's and the City and County's economy.

Agricultural sales on Oahu totaled \$151 million in 2017, accounting for approximately 27% of the State's agricultural production. About 20% of the land on Oahu is zoned for agriculture, which in 2017 consisted of 927 farms encompassing 71,795 acres. With the decline of the sugar and pineapple industries, agricultural lands are returning to an era of small farms growing diversified agricultural products. For example, Hawaii aquaculture sales totaled \$76.4 million in 2017, according to the USDA's National Agricultural Statistics Service.

Manufacturing on Oahu consists principally of producing cement (one plant), refining oil (two refineries), and converting oil into synthetic natural gas (one plant). Other activities include the manufacturing of garments, plastic and concrete pipe, jewelry and gift items, and the processing and packaging of tropical fruits, nuts and other food items. There are more than 1,000 manufacturers statewide. Approximately \$3.67 million in general excise and use taxes were collected by the State from manufacturing services in fiscal year 2017. In March 2016, the State's High Technology Development Corporation announced the Manufacturing Assistance Program to provide matching grant funds (up to \$100,000) for local manufacturers willing to invest into expanding their production through purchase of new equipment or training or improving the energy efficiency of their operations. The program strives to make Hawaii manufacturers more competitive, reducing imports and increasing exports from the State.

Energy

Hawaii's electricity production and costs are still heavily reliant on oil, but renewable energy has been increasing in all counties. In 2017 approximately 27.6% of Hawaii's electricity was generated from renewable sources, the primary sources being wind, biomass, and geothermal. According to DBEDT's Hawaii State Energy Office, the island of Oahu has two waste-to-energy facilities, seven solar farms, four biofuel facilities, three wind farms, and one ocean project under development with the capacity to generate at least 311 megawatts of energy. The State administration has set a goal of using 100% reusable energy resources by 2045.

In October 2012, the City and County completed a \$300 million expansion of its H-Power waste-to-energy facility, increasing its capacity to over 900,000 tons of municipal solid waste per year. The project included new air pollution control equipment mandated by federal law which became operational in April 2011 and a new boiler that entered commercial operations on April 2013 and currently has the capacity to produce approximately 80 megawatts of energy.

In March 2011, First Wind (now owned by SunEdison) completed Oahu's first large-scale commercial wind farm on the North Shore of the island at Kahuku. At full capacity, the project's twelve turbines produce 30 megawatts of energy, enough power for up to 7,700 homes on Oahu. In 2012, First Wind added another 30 turbines on the North Shore of the island at Kawailoa with the capacity to produce an additional 69 megawatts of energy.

Several renewable energy projects are currently in the planning and construction stages on Oahu. These projects include a 50-megawatt biofuel power plant on the U.S. Army's Schofield Barracks, a 46-megawatt solar farm under construction by a subsidiary of Clearway Energy, Inc. in the Waipio area, a 49-megawatt solar farm under construction by a subsidiary of Clearway Energy, Inc. adjacent to the First Wind wind farm at Kawailoa, a 15-megawatt solar farm under construction by Clearway Energy, Inc. in the Mililani/Waipio-Gentry area, a 14.3-megawatt solar farm under construction by Pacific Energy Solutions LLC (owned by NextEra Energy Capital Holdings, Inc.) for the US Navy at the Pearl Harbor Naval Base, a 45-megawatt wind power project to be developed by Champlin Hawaii Wind Holdings in Kahuku, and a 30-megawatt solar farm developed by Eurus Energy America (owned by Toyota and Tokyo Electric Power) in Waianae.

Education, Research and Science

The University of Hawaii was established in 1907 and currently consists of a research university at Manoa, baccalaureate institutions at Hilo and West Oahu, and a system of seven community colleges on the islands of Kauai, Oahu, Maui and Hawaii. The State's only law school is located at Manoa and its only medical school (with a new cancer research center) is located at Kakaako in downtown Honolulu. In the fall of 2018, 51,063 students attended the University of Hawaii System, 17,346 of them on the Manoa Campus.

In addition to the University of Hawaii System, there are three private universities and one private college on Oahu. Federal government research agencies in Honolulu include the U.S. Bureau of Commercial Fisheries and the Environmental Science Services Administration. Among private research organizations on Oahu are the Oceanic Institute and the Bishop Museum. The three high technology centers located on Oahu are the Mililani Technology Park, the Kaimuki Technology Enterprise and the Manoa Innovation Center.

Visitor Industry

The visitor industry encompasses an array of businesses, including hotels, restaurants, airlines, travel agencies, taxis, tour-bus operators, gift shops and other service and recreational industries.

Visitor arrivals continue to be positive, domestic visitor arrivals increased while international visitor arrivals declined in the second quarter of 2019. Due to shorter lengths of stay, the daily visitor census increased less than the increase of visitor arrivals in the quarter. Since visitors spent less on a daily basis, total visitor spending decreased in the quarter. With the exception of the fourth quarter of 2013, visitor arrivals have increased since the third quarter of 2009.

The total number of visitor arrivals by air to the State increased 134,220 or 5.4% in the second quarter of 2019, compared to the same quarter of 2018. The total average daily census was up 5,640 or 2.4% in the quarter. In the first half of 2019, total visitor arrivals by air increased 198,210 or 4%, while the average daily census increased 3,115 or 1.3% from the same period of the previous year.

In the second quarter of 2019, total visitor arrivals on domestic flights increased 152,396 or 8.7% compared to the same quarter of 2018. In the first half of 2019, domestic arrivals were up 216,532 or 6.4% from the same period of the previous year.

Arrivals on international flights decreased 18,176 or 2.5% in the second quarter of 2019 compared to the second quarter of 2018. In the first half of 2019, international arrivals decreased 18,322 or 1.2% from the same period of the previous year.

In terms of major market areas, from the second quarter of 2018 to the same period of 2019, arrivals from the U.S. West increased 128,867 or 11.7%, arrivals from the U.S. East increased 28,960 or 5.1%, and arrivals from Japan decreased 2,454 or 0.7%. In the first half of 2019, arrivals from the U.S. West were up 197,049 or 9.5%; arrivals from the U.S. East were up 40,302 or 3.6%; and Japanese arrivals were up 6,109 or 0.8% from the same period of the previous year.

In January - May, 2019, 2,480,000 people visited Oahu, an increase of 4.6% over the 2,371,000 people who visited Oahu in the first five months of 2018. In 2019, 1,386,000 were domestic visitors, an increase from 1,279,000 domestic visitors in 2018. In 2019, 1,093,000 were international visitors, approximately the same number of international visitors in 2018.

In the second quarter of 2019, the length of stay per visitor decreased. Due to the shorter length of stay, the average total daily visitor census increased less than the growth of visitor arrivals in the quarter. The total average daily visitor census was up 2.4% or 5,640 visitors per day in the second quarter of 2019, over the same quarter of 2018. The domestic average daily census increased 4.7% or 8,416 visitors per day, while the international average daily census decreased 4.6% or 2,776 visitors per day. In the first half of 2019, the domestic average daily census increased 4,744 or 2.6% and the international average daily census decreased 1,629 or 2.4% from the same period of the previous year.

Nominal visitor expenditures by air totaled \$4,352.9 million in the second quarter of 2019, down 1.7% or \$74.9 million from the same quarter of 2018. In the first half of 2019, visitor expenditures decreased \$185.9 million or 2.1% from the same period of the previous year.

Total airline capacity, as measured by the number of available seats flown to Hawaii, increased 2.8% or 92,114 seats in the second quarter of 2019, domestic seats increased 5.5% or 130,134 seats; international seats decreased 4.0% or 38,020 seats, compared to the same quarter of 2018. In the first half of 2019, the number of total available seats increased 1.9% or 127,333 seats from the same period of the previous year.

In the second quarter of 2019, the statewide hotel occupancy rate averaged 80.6%, 0.5 of a percentage point lower than the same quarter of 2018. In the first half of 2019, the statewide hotel occupancy rate averaged 80.7%, 0.9 of a percentage point lower than that of the same period of the previous year.

Table V**SELECTED STATE OF HAWAII AND OAHU VISITOR STATISTICS**

	Year Ended December 31					2 nd Quarter	
	2014	2015	2016	2017	2018 ⁽¹⁾	2018 ⁽¹⁾	2019 ⁽¹⁾
Arrivals by Air – State	8,196,342	8,563,018	8,821,802	9,277,613	9,827,132	2,478,194	2,612,414
Domestic	5,486,059	5,782,140	5,968,779	6,239,748	6,766,558	1,757,586	1,909,982
International	2,710,283	2,780,878	2,853,023	3,037,865	3,060,574	720,608	702,432
Arrivals by Air – Oahu	5,192,621	5,339,912	5,447,229	5,690,752	5,935,007	1,485,928	1,565,990
Domestic	2,779,642	2,868,749	2,912,872	2,663,000		839,282	927,564
International	2,412,978	2,471,163	2,549,008	3,009,000		646,645	638,427
Average Daily Visitor Census – State	206,217	213,934	217,675	228,785	241,121	238,976	244,616
Domestic	151,076	156,026	157,953	164,273	175,380	179,071	187,487
International	55,141	57,908	59,723	64,512	65,741	59,904	57,128
Visitor Expenditures – State ⁽²⁾	\$14,809	\$14,939	\$15,754	\$16,809	\$17,759	\$4,428	\$4,353
Hotel Occupancy Rate – State	77.0%	78.7%	79.0%	80.2%	79.8%	81.1%	80.6%
Hotel Occupancy Rate – Oahu	84.4%	85.1%	83.9%	83.5%	83.9%	84.6%	83.5%

⁽¹⁾ Data preliminary.

⁽²⁾ In millions of dollars. By persons arriving by air and staying overnight or longer (excludes supplemental business expenditures).

Sources: State of Hawaii Department of Business, Economic Development & Tourism and Hospitality Advisors, LLC.

Honolulu's profile as a visitor destination is enhanced by its role as host of numerous professional and trade conferences and conventions, as well as major sports events.

Conferences and conventions held in Honolulu annually attract thousands of visiting participants statewide, nationally and internationally. The primary site for these events is the Hawaii Convention Center, which is located near Waikiki hotel accommodations and visitor attractions.

The City and County continues to attract major investment to support the visitor industry, including hotels, restaurants, and recreation facilities.

Significant development projects related to the visitor industry which are currently under construction or in the later planning stages in or around Waikiki include: (i) the \$250 million 246-unit second tower of the Ritz Carlton Waikiki, (ii) the \$35 million renovation of the Queen Kapiolani Hotel, (iii) the \$100 million renovation of the Hale Koa Hotel, (iv) the \$760 million renovation of Hilton Hawaiian Village Waikiki Beach Resort, including the addition of a new 32-story, 418-unit luxury time-share tower, (v) a \$100 million renovation of the Sheraton Waikiki Hotel, (vi) conversion of the Waikiki Parc Hotel to 126 suites, and (vii) a \$100 million redevelopment of the Outrigger Reef on the Beach Resort that will add a 200-room hotel tower and increased meeting space, open recreation and dining areas.

Significant development projects related to the visitor industry in other parts of Oahu include: (i) a new Residence Inn by Marriott Hotel in Kapolei and (ii) a \$52 million renovation of Turtle Bay Resort on Oahu's North Shore.

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APPENDIX B

SUMMARY OF CERTAIN PROVISIONS OF THE BOND RESOLUTIONS

The First Bond Resolution and the Second Bond Resolution (collectively the “Bond Resolutions”) contain terms and conditions relating to the issuance of the Senior Bonds and the Junior Bonds, respectively (collectively the “Bonds”), including various covenants and security provisions, certain of which are summarized below. This summary does not purport to be comprehensive or definitive and is subject to all of the provisions of the Bond Resolutions, to which reference is hereby made. Copies of the Bond Resolutions are available from the City and County.

Certain Definitions

Certain definitions contained in the Bond Resolutions are summarized below. This summary does not purport to be comprehensive or definitive, and is subject to all provisions of the Bond Resolutions, to which reference is hereby made. Copies of the Bond Resolutions are available from the Department of Budget and Fiscal Services or the Department of Environmental Services of the City and County.

“*Accrued Debt Service*” means as of any date of computation and with respect to the Bonds of any Series, an amount equal to the sum of: (i) interest on such Bonds accrued and unpaid and to accrue to the end of the then current calendar month, and (ii) principal, Sinking Fund Installment and redemption premium which are due and unpaid for such Bonds and that portion of the principal, unsatisfied balance of any Sinking Fund Installment (as determined in accordance with the Bond Resolution) and redemption premium for such Bonds next due which would have accrued to the end of such calendar month if deemed to accrue monthly from a date one year prior to its due date.

“*Act*” means Chapter 49, Hawaii Revised Statutes, and all laws amendatory or supplemental thereto.

“*Aggregate Debt Service*” means, for any period and as of any date of computation, the sum of the amounts of Debt Service for such period with respect to all Series of Bonds.

“*Assumed Long-Term Fixed Rate*” means, with respect to Variable Rate Bonds, (i) a numerical rate of interest that such Bonds would have borne if issued as Fixed Rate Bonds with the same maturity and taking into account Sinking Fund Installments; or (ii) if the City and County has in connection with such Variable Rate Bonds entered into an Interest Rate Exchange Agreement which provides that the City and County is to pay to another person an amount determined based upon a fixed rate of interest on a notional amount and which requires the Counterparty to pay to the City and County an amount equal to the amount by which interest on the notional amount stated therein at the rate borne by such Variable Rate Bonds exceeds the interest payable on such notional amount at a rate stated therein, the fixed rate or other rate of interest set forth in or determined in accordance with such agreement. With respect to the Bonds described in clause (i) of the preceding sentence, an Authorized Officer is to certify or cause the Remarketing Agent for such Series of Variable Rate Bonds or other qualified person to certify such Assumed Long-Term Fixed Rate on the issue date of such Bonds, taking into account such market factors as such Authorized Officer or such Remarketing Agent or such qualified person deems necessary or appropriate.

“*Authorized Officer*” means the Director of Budget and Fiscal Services, any Deputy Director of Budget and Fiscal Services, the Director of Environmental Services or any other officer of the City and County designated by resolution of the City Council.

“*Bond Anticipation Notes*” means bond anticipation notes which the City and County may issue for purposes of the Wastewater System if the requirements set forth in the applicable Bond Resolution for such issuance are satisfied.

“*Bond Counsel*” means an attorney or a firm of attorneys of nationally recognized standing in the field of law relating to municipal bonds selected by the City and County.

“*Bond Resolution*” means, as context requires, either the First Bond Resolution or the Second Bond Resolution, or both of them.

“*Bondholder*” or “*holder of a Bond*” or “*Holder*” means the registered owner of any Bond which at the time is registered other than to bearer, or such holders’ duly authorized attorney in fact, representative or assigns.

“*Bonds*” means, as context requires, the Senior Bonds, the Junior Bonds, or both of them.

“*Build America Bonds*” means any bonds or other obligations issued as Build America Bonds under Section 54AA of the Code, or under any other provision of the Code that creates a substantially similar direct-pay subsidy program.

“*Capital Appreciation Bond*” means any Bond as to which interest is compounded on each Valuation Date therefor and is payable only at the maturity or prior redemption thereof.

“*City Charter*” means the 1973 Revised Charter of the City and County of Honolulu (1994 Edition), as the same may be amended from time to time.

“*City Code*” means the Revised Ordinances of Honolulu 1990, as the same may be amended from time to time.

“*City Council*” mean the City Council of the City and County.

“*Code*” means the Internal Revenue Code of 1986, as amended, and any successor statutes thereto, and any applicable regulations thereunder.

“*Common Reserve Account Requirement*” means as of any date of computation, an amount equal to the greatest amount of Aggregate Debt Service for the then current or any future Fiscal Year on all Outstanding Bonds entitled to the benefit of the Common Reserve Account; provided however, that if upon issuance of a Series of Bonds entitled to the benefit of the Common Reserve Account, such amount would require moneys to be credited to the Common Reserve Account from such Bond proceeds in an amount in excess of the maximum amount permitted under the Code, the Common Reserve Account Requirement will mean an amount equal to the sum of the Common Reserve Account Requirement immediately preceding issuance of such Bonds and the maximum amount permitted under the Code to be deposited therein from the proceeds of such Bonds, as certified by an Authorized Officer; provided further, however, that for purposes of this definition, Aggregate Debt Service is to be computed with respect to each Variable Rate Bond entitled to the benefit of the Common Reserve Account by using the Assumed Long-Term Fixed Rate applicable thereto.

“*Common Reserve Subaccount Requirement*” means as of any date of computation, an amount equal to the greatest amount of Aggregate Debt Service for the then current or any future Fiscal Year on all Outstanding Bonds entitled to the benefit of the Common Reserve Subaccount; provided however, that if upon issuance of a Series of Bonds entitled to the benefit of the Common Reserve Subaccount, such amount would require moneys to be credited to the Common Reserve Subaccount from such Bond proceeds in an amount in excess of the maximum amount permitted under the Code, the Common Reserve Subaccount Requirement will mean an amount equal to the sum of the Common Reserve Subaccount Requirement immediately preceding issuance of such Bonds and the maximum amount permitted under the Code to be deposited therein from the proceeds of such Bonds, as certified by an Authorized Officer; provided further, however, that for purposes of this definition, Aggregate Debt Service is to be computed with respect to each Variable Rate Bond entitled to the benefit of the Common Reserve Subaccount by using the Assumed Long-Term Fixed Rate applicable thereto.

“*Consulting Engineer*” means the engineer or engineering firm or corporation retained from time to time pursuant to the Bond Resolution to perform the acts and carry out the duties provided for such Consulting Engineer in the Bond Resolution.

“*Costs*” means all costs of any Improvement and include, but are not be limited to, all costs and estimated costs of the issuance of the Bonds, all architectural, engineering, inspection, financial and legal expenses,

the cost of causing the payment of the principal or interest or both of the Bonds to be insured or guaranteed, the initial cost of any Support Facility or Interest Rate Exchange Agreement obtained or permitted by the Act, and interest which it is estimated will accrue during the construction of any Improvements and for six (6) months thereafter.

“Debt Service” means, as of any particular date of computation, (1) with respect to the Senior Bonds, with respect to any Bonds and with respect to any period, the aggregate of the amounts to be paid or set aside in such period for the payment (or retirement) of the principal and Redemption Price (if any) of, and interest on, such Bonds; provided, however, that the term “Debt Service” does not include interest on Bonds to the extent it is to be paid from amounts on credit to a Series Improvement Interest Subaccount, amounts on credit to the Debt Service Account or any other provisions made for the payment of interest, and (2) with respect to the Junior Bonds, with respect to any Bonds and with respect to any period, the aggregate of the amounts to be paid or set aside in such period for the payment (or retirement) of the principal and Redemption Price (if any) of, and interest on, such Bonds; provided, however, that the term “Debt Service” does not include interest on Bonds to the extent it is to be paid from amounts on credit to a Series Improvement Interest Subaccount, amounts on credit to the Debt Service Subaccount or any other provisions made for the payment of interest; provided further, however, that in determining the amount of interest coming due during any applicable period on any Series of Bonds that are issued as Interest Subsidy Bonds, amounts equal to Refundable Credits the City and County is scheduled to receive during such period shall be deducted from such interest.

“Department” means the Department of Environmental Services of the City and County as established by the City Charter, or the successor thereto.

“Depository” means any bank, national banking association or trust company selected and appointed by an Authorized Officer in accordance with the applicable Bond Resolution as a depository of moneys and Investment Securities held under the provisions of the applicable Bond Resolution.

“Depository” means The Depository Trust Company, New York, New York, or its nominee, or any other person, firm, association or corporation designated in the Series Resolution authorizing a Series of Bonds or a Series Certificate relating to such Series of Bonds to serve as securities depository for the Bonds of such Series.

“Director of Budget and Fiscal Services” means the Director of Budget and Fiscal Services of the City and County appointed pursuant to and having the powers as set forth in the Act and the City Charter, or any successor.

“Director of Environmental Services” means the Director of the Department of Environmental Services of the City and County appointed pursuant to and having the powers as set forth in the Act and the City Charter, or any successor.

“Exempt Obligation” means an obligation of any state or territory of the United States of America, any political subdivision of any state or territory of the United States of America, or any agency, authority, public benefit corporation or instrumentality of such state, territory or political subdivision, the interest on which is excludable from gross income under Section 103 of the Code, and which; at the time an investment therein is made or such obligation is deposited in any fund or account under the applicable Bond Resolution, is rated, without regard to qualification of such rating by symbols such as “+” or “-” or numerical notation, “Aa” or better by Moody’s and “AA” or better by S&P, or, if such obligation is not rated by Moody’s or S&P, or, if such obligation is rated by neither Moody’s nor S&P, has been assigned a comparable rating by another nationally recognized rating service, but in no event rated lower than the lowest rating on Outstanding Bonds assigned by Moody’s or S&P.

“First Bond Resolution” means the First Wastewater Revenue Bond Resolution adopted by the City Council of the City and County on November 10, 1998, as amended from time to time pursuant to its terms.

“First Resolution Obligations” means bonds, notes and other evidence of indebtedness issued under and pursuant to the First Bond Resolution.

“*Fiscal Year*” means the 12 month period established by the City and County or provided by law from time to time as its fiscal year, and which, as of the date of adoption of the applicable Bond Resolution, is the 12-month period commencing on July 1 of any year and ending on June 30 of the following year.

“*Government Obligation*” means a direct obligation of the United States of America, an obligation the principal of, and interest on, which are guaranteed by the United States of America, provided, that the full faith and credit of the United States of America is pledged to any such direct obligation or guarantee.

“*Improvements*” means the acquisition, purchase, construction, reconstruction, improvement, betterment or extension of the Wastewater System.

“*Interest Rate Exchange Agreement*” means an agreement entered into by the City and County relating to Bonds of one or more Series which provides that during the term of such agreement the City and County is to pay to the Counterparty an amount based on the interest accruing at a fixed or variable rate per annum on a notional amount and that the Counterparty is to pay to the City and County either (i) an amount based on the interest accruing on such notional amount at a fixed, capped or variable rate per annum, in each case computed according to a formula set forth in such agreement, or that one will pay to the other any net amount due under such agreement, or (ii) an amount based on the amount by which the rate per annum at which such Bonds bear interest exceeds a rate per annum stated in such agreement.

“*Interest Subsidy Bonds*” means (a) any bonds or other obligations issued as Build America Bonds under Section 54AA of the Code, or under any other provision of the Code that creates a substantially similar direct-pay subsidy program, (b) any bonds or other obligations issued as Recovery Zone Economic Development Bonds under Section 1400U-2 of the Code, or under any other provision of the Code that creates a substantially similar direct-pay subsidy program, or (c) any other any bonds or other obligations issued under any provision or provisions of the Code that create substantially similar direct-pay subsidy programs to such programs with respect to Build America Bonds and Recovery Zone Economic Development Bonds.

“*Investment Agreement*” means an agreement for the investment of moneys with a Qualified Financial Institution.

“*Investment Securities*” means any of the following, if and to the extent that the same are legal for the investment of funds of the Department:

- (i) Government Obligations;
- (ii) Investment Agreements;
- (iii) Direct obligations and fully guaranteed certificates of beneficial interest of the Export-Import Bank of the United States; consolidated debt obligations and letter of credit-backed issues of the Federal Home Loan Banks; participation certificates and senior debt obligations of the Federal Home Loan Mortgage Corporation (“FHLMCs”); debentures of the Federal Housing Administration; mortgage-backed securities (except stripped mortgage securities which are valued greater than par on the portion of unpaid principal) and senior debt obligations of Fannie Mae (“FNMA’s”); participation certificates of the General Services Administration; guaranteed mortgage-backed securities and guaranteed participation certificates of the Government National Mortgage Association (“GNMA’s”); guaranteed participation certificates and guaranteed pool certificates of the Small Business Administration; debt obligations and letter of credit-backed issues of the Student Loan Marketing Association; local authority bonds of the U.S. Department of Housing & Urban Development; guaranteed Title XI financings of the U.S. Maritime Administration; guaranteed transit bonds of the Washington Metropolitan Area Transit Authority; Resolution Funding Corporation securities.
- (iv) direct obligations of any state or territory of the United States of America or any subdivision or agency thereof whose unsecured, uninsured and unguaranteed general obligation debt is rated, at the time of purchase, “Aa” or better by Moody’s and “AA” or better by S&P, or any obligation fully and unconditionally guaranteed by any state, subdivision or agency whose

unsecured, uninsured and unguaranteed general obligation debt is rated, at the time of purchase, “Aa” or better by Moody’s and “AA” or better by S&P;

(v) commercial paper (having original maturities of not more than 270 days) rated, at the time of purchase, “P-1” by Moody’s and “A-1” or better by S&P;

(vi) Federal funds, unsecured certificates of deposit, time deposits or bankers acceptances (in each case having maturities of not more than 365 days) of any domestic bank including a branch office of a foreign bank which branch office is located in the United States, provided legal opinions are received to the effect that full and timely payment of such deposit or similar obligation is enforceable against the principal office or any branch of such bank, which, at the time of purchase, has a short-term “Bank Deposit” rating of “P-1” by Moody’s and a “Short-Term CD” rating of “A-1” or better by S&P.

(vii) deposits of any bank or savings and loan association which has combined capital, surplus and undivided profits of not less than \$3 million, provided such deposits are continuously and fully insured by the Bank Insurance Fund or the Savings Association Insurance Fund of the Federal Deposit Insurance Corporation (“FDIC”);

(viii) investments in money-market funds rated “Aaa” by Moody’s, and “AAAm” or “AAAm-G” by S&P;

(ix) repurchase agreements collateralized by Government Obligations, GNMMAs, FNMMAs or FHLMMCs with any registered broker/dealer subject to the Securities Investors’ Protection Corporation jurisdiction or any commercial bank insured by the FDIC, if such broker/dealer or bank has an uninsured, unsecured and unguaranteed obligation rated in the top two rating tiers by Moody’s, and “AA-1” or “AA-” or better by S&P, provided:

(a) a master repurchase agreement or specific written repurchase agreement governs the transaction; and

(b) the securities are held free and clear of any lien by the Depository or an independent third party acting solely as agent (“Agent”) for the Depository, and such third party is (i) a Federal Reserve Bank, or (ii) a bank which is a member of the Federal Deposit Insurance Corporation and which has combined capital, surplus and undivided profits of not less than \$50 million, and the Depository has received written confirmation from such third party that it holds such securities, free and clear of any lien, as agent for the Depository; and

(c) a perfected first security interest under the Uniform Commercial Code, or book entry procedures prescribed at 31 C.F.R. 306.1 et seq. or 31 C.F.R. 350.0 et seq. in such securities is created for the benefit of the Depository; and

(d) the repurchase agreement has a term of 3 years or less, and the Depository or the Agent will value the collateral securities no less frequently than weekly and will liquidate the collateral securities if any deficiency in the required collateral percentage is not restored within two business days of such valuation; and

(e) the fair market value of the securities in relation to the amount of the repurchase obligation, including principal and interest, is equal to at least 100%;

(x) investments in any mutual fund whose portfolio is limited to Government Obligations and the investments described in clause (ii) of Investment Securities; and

(xi) student loan resource securities including student loan auction rate securities, student loan asset-backed notes, student loan program revenue notes and bonds, and securities issued pursuant to Rule 144A of the Securities Act of 1933, including any private placement issues, issued with

either bond insurance or overcollateralization guaranteed by the United States Department of Education, provided all insurers maintain an “Aaa” by Moody’s, “AAA” by S&P or equivalent rating by other rating agencies.

“*Junior Bonds*” means the Second Bond Resolution, Wastewater System Revenue Bonds authorized by, and at any time outstanding pursuant to the Second Bond Resolution.

“*Junior Series Certificate*” means a certificate of an Authorized Officer fixing the terms, conditions and other details of Junior Bonds in accordance with the delegation of power to do so under the Second Bond Resolution or under a Junior Series Resolution.

“*Junior Series Resolution*” means a resolution authorizing the issuance of a Series of Junior Bonds adopted by the City Council pursuant to the Second Bond Resolution.

“*LIBOR*” means the offered rate for deposits in U.S. dollars for a one-month period which appears on the Telerate Page 3750 at approximately 11:00 a.m., London time, on such date, or if such date is not a date on which dealings in U.S. dollars are transacted in the London interbank market, then on the next preceding day on which such dealings were transacted in such market.

“*Moody’s*” means Moody’s Investors Service, Inc., its successors and their assigns, and, if such corporation for any reason no longer performs the functions of a securities rating agency, “Moody’s” is deemed to refer to any other nationally recognized rating agency, if any, designated by the Director of Budget and Fiscal Services.

“*Net Revenue Requirement*” means with respect to any Fiscal Year or any period, (A) with respect to the Senior Bonds, an amount equal to the greater of (i) the sum of (a) the Aggregate Debt Service in such Fiscal Year or such period, and (b) the Required Deposits for such Fiscal Year or such period; or (ii) 1.20 times the Aggregate Debt Service in such Fiscal Year or such period, plus 1.00 times the aggregate Support Facility Reimbursement Obligations outstanding as of the end of such Fiscal Year or such period; and (B) with respect to the Junior Bonds, an amount equal to the greater of: (i) the sum of (a) the Aggregate Debt Service under the First Bond Resolution and the Aggregate Debt Service in such Fiscal Year or such period, and (b) the Required Deposits for such Fiscal Year or such period; or (ii) 1.10 times the Aggregate Debt Service (as defined in the First Bond Resolution) under the First Bond Resolution and 1.10 times the Aggregate Debt Service in such Fiscal Year or such period, plus 1.00 times the aggregate Support Facility Reimbursement Obligations outstanding as of the end of such Fiscal Year or such period.

“*Net Revenues*” means, with respect to any period; the Revenues during such period less amounts required to pay Operation and Maintenance Expenses.

“*Operation and Maintenance Expenses*” means the costs and expenses of operating and maintaining the Wastewater System, including, without limiting the generality of the foregoing, (i) all expenses includable in the operation and maintenance expense accounts of the Department relating to the Wastewater System according to generally accepted accounting principles, exclusive of depreciation and amortization of property values or losses, (ii) to the extent not included in the preceding clause (i) or paid from Bond proceeds or otherwise, the Department’s share of the costs and expenses of operating and maintaining any plants and properties jointly owned with others, and (iii) the amounts, if any, payable to the United States Treasury Department pursuant to Section 148 of the Code.

“*Opinion of Counsel*” means with respect to the City and County a written opinion of counsel selected by the Director of Budget and Fiscal Services who is not an employee of the City and County, and which, with respect to Federal income tax law and securities law relating to obligations issued by state and local governmental units, is Bond Counsel. Any Opinion of Counsel may be based (insofar as it relates to factual matters or information which is in the possession of the City and County) upon a written certificate of the City and County unless such counsel knows, or in the exercise of reasonable care should have known, that such written certificate is erroneous.

“Outstanding” or *“outstanding”* when used with reference to Bonds means, as of any date, Bonds theretofore or thereupon issued pursuant to the applicable Bond Resolution, except: (a) any Bonds canceled by a Paying Agent or paid at or prior to such date; (b) Bonds in lieu of or in substitution for which other Bonds have been delivered pursuant to the applicable Bond Resolution; (c) Bonds deemed to be no longer outstanding under the applicable Bond Resolution as provided in the applicable Bond Resolution and (d) Option Bonds tendered or deemed tendered in accordance with the provisions of the Series Resolution or the Series Certificate relating to such Bonds.

“Parity Support Facility Reimbursement Obligation” means the obligation of the City and County described in the applicable Bond Resolution to directly reimburse the Support Facility Provider of any Support Facility for amounts paid by such Support Facility Provider under such Support Facility or a Counterparty under an Interest Rate Exchange Agreement for amounts paid thereunder, on a parity with the obligation of the City and County to pay the Bonds, whether or not such obligation to reimburse is evidenced by a promissory note or other similar instrument.

“Paying Agent” means, as to Bonds of any particular Series, the Director of Budget and Fiscal Services or the bank or trust company designated for the payment of the principal and Redemption Price, if any of, and interest on, the Bonds of such Series in the Series Resolution authorizing the issuance of such Series or the Series Certificate relating to such Series.

“Record Date” means, with respect to any Series of Bonds, (i) with respect to the payment of interest, the fifteenth (15th) day (whether or not a Business Day) of the month preceding an interest payment date; (ii) with respect to notice of redemption, the 45th day (whether or not a Business Day) preceding the date of redemption; or (iii) such other day as may be provided in the Series Resolution authorizing the issuance of such Series or the Series Certificate relating to such Series.

“Recovery Zone Economic Development Bonds” means any means any bonds or other obligations issued as Recovery Zone Economic Development Bonds under Section 1400U-2 of the Code, or under any other provision of the Code that creates a substantially similar direct-pay subsidy program.

“Refundable Credits” means (a) with respect to a Series of Bonds issued as Build America Bonds under Section 54AA of the Code, the amounts which are payable by the Federal government under Section 6431 of the Code, which the City and County has elected to receive under Section 54AA(g)(1) of the Code, (b) with respect to a Series of Bonds issued as Recovery Zone Economic Development Bonds under Section 1400U-2 of the Code, the amounts which are payable by the Federal government under Section 6431 of the Code, which the City and County has elected to receive under Section 1400U-2 of the Code, and (c) with respect to a Series of Bonds issued as any other type of Interest Subsidy Bonds, the amounts which are payable by the Federal government under provisions of the Code governing a direct-pay subsidy program or programs substantially similar to such programs with respect to Build America Bonds and Recovery Zone Economic Development Bonds.

“Refunded Municipal Obligations” means Exempt Obligations which are rated in the highest rating category by Moody’s and S&P and provision for the payment of the principal of and interest on which has been made by an irrevocable deposit with a trustee or escrow agent of Governmental Obligations, which are held by a bank or trust company organized and existing under the laws of the United States of America or any state, the District of Columbia or possession thereof in the capacity as custodian, the maturing principal of and interest on which Government Obligations will be sufficient to pay, when due, the principal of and interest on such Exempt Obligations.

“Reimbursable Obligations” means reimbursable general obligation bonds issued and delivered or to be hereafter issued and delivered by the City and County to finance certain costs related to the Wastewater System, the debt service on which the Department is required by State law to reimburse the City and County’s General Fund.

“Reimbursable Obligation Requirement” means, with respect to any period of time, the amount required to be credited to the Reimbursable Obligation Account pursuant to the ordinances and resolutions of the City Council authorizing the issuance and delivery of Reimbursable Obligations.

“Required Deposits” means, for any period, (A) for purposes of the First Bond Resolution, amounts required: (i) to be paid into the Common Reserve Account, each Separate Reserve Account, the Subordinate Obligation Account and Reimbursable Obligation Account; and (ii) to pay Support Facility Reimbursement Obligations; and (B) for purposes of the Second bond Resolution, (i) the Required Deposits under the First Bond Resolution exclusive of transfers from the Sewer Fund to the Subordinate Obligation Account; and (ii) the amounts, if any, required: (a) to be paid into the Rebate Subaccount, the Common Reserve Subaccount, each Separate Series Reserve Subaccount, and the Third Lien Obligation Subaccount, and (b) to pay Support Facility Reimbursement Obligations.

“Revenue Bond Index” means the 30 year Revenue Bond Index of The Bond Buyer, a publication in New York, New York, or any successor publication maintaining such Index or in the event The Bond Buyer or any successor publication does not maintain such Index, an equivalent index with the same or similar components as the Revenue Bond Index.

“Revenues” means (A) with respect to the First Bond Resolution, the moneys, including any moneys collected from the City and County or any department thereof other than the Department, derived by the Department from the rates, rentals, fees and charges prescribed for the use and services of, and the facilities and commodities furnished by, the Wastewater System, including, without limiting the generality of the foregoing, (i) all income, receipts, profits, and other moneys derived from the furnishing or supplying of the services, facilities and commodities through the Wastewater System; (ii) all income from investments of moneys held under the Bond Resolution including investment income on the Improvement Account but not including any earnings on the Rebate Account, the Subordinate Obligation Account or the Reimbursable Obligation Account; (iii) all payments made by Counterparties pursuant to Interest Rate Exchange Agreements; and (iv) moneys and Investment Securities transferred from the Rate Stabilization Account to the Sewer Fund within 90 days following the end of a Fiscal Year. “Revenues” will not include, (i) deposits subject to refund until such deposits have become the property of the City and County; (ii) contributions in-aid-of construction and assessment, impact and other similar fees imposed and collected by the City and County which are targeted to pay the Costs of specific Improvements; (iii) income, fees, charges, receipts, profits or other moneys derived by the Department from the ownership or operation of any separate utility system; (iv) any gifts, grants, donations or other moneys received by the City and County for purposes of the Wastewater System from any State or Federal agency or other person if such gifts, grants, donations or other moneys are the subject of any limitation or reservation: (a) imposed by the donor or grantor; or (b) imposed by law or administrative regulation to which the donor or grantor is subject, limiting the application of such funds; (v) amounts retained in the Sewer Fund for working capital and operating reserves pursuant to the Bond Resolution; (vi) moneys and Investment Securities transferred from the Sewer Fund to the Rate Stabilization Account within 90 days following the end of a Fiscal Year; or (vii) Wastewater System Facility Charges; and (B) with respect to the Second Bond Resolution, the amounts described in (A) and (i) all income from investments of moneys held under the Second Bond Resolution including investment income on the Improvement Second Account created by the Second Bond Resolution but not including any earnings on the Rebate Subaccount or Third Lien Obligation Subaccount; and (ii) all payments made by Counterparties pursuant to Interest Rate Exchange Agreements

“S&P” means Standard & Poor’s Rating Services, a division of The McGraw-Hill Companies, its successors and their assigns, and, if such corporation for any reason no longer performs the functions of a securities rating agency, S&P is deemed to refer to any other nationally recognized rating agency designated by the Director of Budget and Fiscal Services.

“Second Bond Resolution” means the Second Wastewater Revenue Bond Resolution adopted by the City Council of the City and County on November 10, 1998, as amended from time to time pursuant to its terms.

“Senior Bonds” means the First Bond Resolution, Wastewater System Revenue Bonds authorized by, and at any time outstanding pursuant to the First Bond Resolution.

“Senior Series Certificate” means a certificate of an Authorized Officer fixing the terms, conditions and other details of Senior Bonds in accordance with the delegation of power to do so under the First Bond Resolution or under a Senior Series Resolution.

“Senior Series Resolution” means a resolution authorizing the issuance of a Series of Senior Bonds adopted by the City Council pursuant to the First Bond Resolution.

“*Serial Bonds*” means Bonds which mature serially and which are not Term Bonds.

“*Series,*” “*Series of Bonds*” or “*Bonds of a Series*” means all Bonds designated as being of the same series issued and delivered on original issuance in a simultaneous transaction, and any Bonds thereafter delivered in lieu thereof or in substitution therefor pursuant to the First Bond Resolution or the Second Bond Resolution, as applicable.

“*Series Certificate*” means, as context requires, either a Senior Series Certificate or a Junior Series Certificate.

“*Series Resolution*” means, as context requires, either a Senior Series Resolution or a Junior Series Resolution.

“*Sinking Fund Installment*” means an amount so designated which is established pursuant to the applicable Bond Resolution. The portion of any such Sinking Fund Installment remaining after the deduction of any such amounts credited pursuant to the applicable Bond Resolution toward the same (or the original amount of any such Sinking Fund Installment if no such amounts have been credited toward the same) will constitute the unsatisfied balance of such Sinking Fund Installment for the purpose of calculation of Sinking Fund Installments due on a future date.

“*Subordinate Obligations*” means the Junior Bonds any bonds, notes or other evidences of indebtedness of the City and County payable from the Net Revenues, other than the Senior Bonds and the Reimbursable Obligations, issued in compliance with the provisions of the First Bond Resolution.

“*Subordinate Obligation Requirement*” means with respect to any period of time, the amount required to be deposited in the Subordinate Obligation Account pursuant to the First Bond Resolution, indenture or other instruments of the City and County adopted by or entered into by the City and County in accordance with the Bond Resolutions and providing for all payments with respect to Subordinate Obligations.

“*Supplemental Resolution*” means any resolution adopted by the City Council and becoming effective pursuant to and in compliance with the provisions of the applicable Bond Resolution which amends or supplements the provisions of the applicable Bond Resolution, any Series Resolution or any other Supplemental Resolution.

“*Support Facility*” means an irrevocable letter of credit, surety bond, loan agreement, standby purchase agreement or other agreement, facility or insurance or guaranty arrangement issued or extended by one or more Support Facility Providers, pursuant to which the City and County is entitled to obtain moneys to pay the principal or Redemption Price of Bonds due in accordance with their terms or tendered for purchase or redemption, plus accrued interest thereon to the date of payment, purchase or redemption thereof in accordance with the applicable Bond Resolution and with the Series Resolution authorizing such Bonds or a Series Certificate relating to such Bonds, whether or not the City and County is in default.

“*Support Facility Provider*” means a bank, a trust company, a national banking association, an organization subject to registration with the Board of Governors of the Federal Reserve System under the Bank Holding Company Act of 1956 or any successor provisions of law, a federal branch pursuant to the International Banking Act of 1978 or any successor provisions of law, a savings bank, a savings and loan association, an insurance company or association chartered or organized under the laws of any state of the United States of America, the Government National Mortgage Association or any successor thereto, the Federal National Mortgage Association or any successor thereto, or any other federal agency or instrumentality approved by the City and County or a Counterparty.

“*Support Facility Reimbursement Obligation*” means the obligation of the City and County described in the Bond Resolutions to directly reimburse the Support Facility Provider of a Support Facility for amounts paid thereunder or a Counterparty under an Interest Rate Exchange Agreement for amounts paid thereunder, whether or not such obligation to reimburse is evidenced by a promissory note or other similar instrument.

“Tax-exempt Bonds” means Bonds the interest on which is intended by the City and County to be excluded from gross income of the holders of such Bonds for federal income taxation purposes pursuant to the Code.

“Term Bonds” means (i) with respect to the Senior Bonds, Bonds, the retirement or the redemption of which is to be provided for from moneys credited to the Debt Service Account pursuant to the First Bond Resolution, and (ii) with respect to the Junior Bonds, Bonds the retirement or the redemption of which is to be provided for from moneys credited to the Debt Service Subaccount pursuant to the Second Bond Resolution.

“Variable Rate Bonds” means any Bonds issued bearing interest at a rate per annum subject to adjustment from time to time based on the terms thereof, based upon an index, or otherwise calculated in a manner which precludes the actual rate for the entire term of such Bonds from being ascertainable in advance as provided for in the applicable Bond Resolution.

“Wastewater System” means all plants and properties, both real and personal and tangible and intangible, now or hereafter existing, under the management, control or jurisdiction of the Department, used for, useful in, or pertaining to the collection, pretreatment, advanced primary treatment, primary treatment, secondary treatment, tertiary treatment, purification, conveyance, storage, drainage, discharge and disposal of sewage, water, wastewater, stormwater, influent, effluent, or other liquids or suspended solids, or incidental or necessary to the preservation of the City and County’s or the Department’s wastewater conveyance facilities, wastewater treatment plants, wastewater disposal facilities, storm drains and sewers, sewage pump stations, sewage treatment plants, sewers, interceptors, outfall and other related facilities and plants, and the integrity thereof. The terms used in the preceding sentence have the meanings as ascribed to them in the City Code. Without limiting the generality of the foregoing, the Wastewater System includes: (1) the existing plants and properties comprising the Wastewater System under the management, control or jurisdiction of the Department, as of the date of adoption of the Bond Resolution; and (2) all Improvements thereafter constructed or otherwise acquired, purchased or annexed.

“Wastewater System Facility Charge” has the meaning specified in the City Code.

THE FIRST BOND RESOLUTION

Pledge Made in the Bond Resolution

The Bonds are payable solely from and secured by the funds pledged therefor under the Bond Resolution. The City and County has pledged as security for the payment of the principal of, Redemption Price, if any, and interest on the Bonds in accordance with their terms and the provisions of the Bond Resolution, subject only to the provisions of the Bond Resolution permitting the application thereof for the purposes and on the terms and conditions set forth in the Bond Resolution: (i) the proceeds of sale of the Bonds pending application thereof in accordance with the provisions of the Bond Resolution or of a Series Resolution or a Series Certificate; (ii) the Net Revenues; and (iii) all Funds and Accounts held under the Bond Resolution other than the Rebate Account, the Subordinate Obligation Account, the Reimbursable Obligation Account, with respect to any Series of Bonds not entitled to the benefit of a Separate Series Reserve Account, such Separate Series Reserve Account, and with respect to any Series of Bonds not entitled to the benefit of the Common Reserve Account, the Common Reserve Account, including the investments, if any, in such Funds and Accounts; and the Bondholders have a lien on, and a security interest in, such proceeds, Net Revenues and Funds and Accounts for such purpose and subject to such provisions of the Bond Resolution. Such lien and security interest for the payment of Bonds are prior and superior to the lien and security interest for the payment of Subordinate Obligations and Reimbursable Obligations.

The Bond Resolution provides that each of the obligations, duties, limitations and restraints imposed upon the City and County by the Bond Resolution is deemed to be a covenant between the City and County and every Holder of the Bonds, and the Bond Resolution and every provision and covenant set forth in the Bond Resolution is deemed to be and constitute a continuing contract and agreement between the City and County and the Holders from time to time of the Bonds issued under the Bond Resolution, to secure the full and final payment of the principal and redemption price of and interest on all Bonds which may from time to time be issued, executed, and delivered under the Bond Resolution. The covenants and agreements set forth in the Bond Resolution to be performed by the City and County are for the equal and proportionate benefit, security and protection of all Holders of the Bonds without preference, priority or distinction as to payment or security or otherwise of any of the Bonds

over any of the others for any reason or cause whatsoever except as expressly provided in the Bond Resolution, in a Series Resolution, a Series Certificate or a Supplemental Resolution, or in the Bonds.

Additional Bonds

Basic Test. One or more Series of Bonds (exclusive of refunding Bonds) may be issued at any time and from time to time for any lawful use or purpose relating to the Wastewater System, including, without limitation, payment of all or a portion of the Costs of Improvements, but only upon compliance as to each such Series with the provisions set forth in the Bond Resolution, including, among other things, delivery to the Director of Budget and Fiscal Services of the following documents or moneys or securities:

1. A written certificate of the City and County stating the amount required to be in the Common Reserve Account after issuance of the Bonds then to be issued, and that after deposit in the Common Reserve Account of the amount, if any, to be deposited therein in connection with the issuance of such Bonds, the amounts on deposit in the Common Reserve Account will not be less than the Common Reserve Account Requirement.

2. A written certificate of the City and County stating the amount required to be in the Series Reserve Account created, if any, to provide additional security for the Bonds of such Series after issuance of Bonds then to be issued, and that after deposit in such Separate Series Reserve Account of the amount to be deposited therein in connection with the issuance of such Bonds, the amounts on deposit in such Separate Series Reserve Account will not be less than the Separate Series Reserve Account Requirement for such Separate Series Reserve Account.

3. Either (I) a written certificate of the City and County based: (i) on audited figures or (ii) to the extent audited figures are not available, on figures taken by an independent certified public accountant from the Department's books and records, showing that the Net Revenues for: (a) the most recent Fiscal Year, or (b) any consecutive 12-months' period out of 24 months immediately preceding the month in which such Bonds are issued were not less than 1.20 times the maximum Aggregate Debt Service on all Bonds then Outstanding and on the proposed Series of Bonds in any Fiscal Year, plus 1.00 times the aggregate Support Facility Reimbursement Obligations outstanding as of the date of the written certificate of the City and County, or (II) a written certificate of the City and County or Certificate of the Consulting Engineer that the Net Revenues to be derived in each of the five (5) Fiscal Years following the earlier of: (i) the end of the period during which interest is capitalized or, if no interest is to be capitalized, the Fiscal Year in which the proposed Series of Bonds are issued, and (ii) the date on which substantially all Improvements to be financed with the proceeds of the proposed Series of Bonds are expected to commence operations, or, if the proceeds of such Series of Bonds will not be used to fund the Costs of Improvements, the Fiscal Year in which the proposed Series of Bonds are issued, are estimated to be not less than 1.20 times the maximum Aggregate Debt Service on all Bonds then Outstanding and on the proposed Series of Bonds in any such Fiscal Year, plus 1.00 times the aggregate Support Facility Reimbursement Obligations outstanding as of the date of such written certificate of the City and County or certificate of the Consulting Engineer, as the case may be.

Certain Adjustments. The Bond Resolution permits and requires certain adjustments to be made in determining whether the Basic Test described above for the issuance of Bonds other than Refunding Bonds is met.

1. In determining Debt Service on Variable Rate Bonds then Outstanding and Variable Rate Bonds then proposed to be issued for purposes of the Basic Test described above, the interest rate is to be calculated as: (i) if any Variable Rate Bonds are then Outstanding and have been Outstanding for at least 24 months, the average interest rate borne by such Variable Rate Bonds over the preceding 12-month period or if no such Variable Rate Bonds are then Outstanding, (a) for the proposed Variable Rate Bonds that are Tax-exempt Bonds, the average interest rate of the Revenue Bond Index over the preceding 12-month period at the time of calculation, and (b) for the proposed Variable Rate Bonds that are not Tax-exempt Bonds, the average interest rate of LIBOR over the preceding 12-month period at the time of calculation.

2. Bond Anticipation Notes then Outstanding are to be treated as Bonds. In determining Debt Service on such Bond Anticipation Notes, such Bond Anticipation Notes are assumed to mature in 30 years and bear interest equal to the Revenue Bond Index at the time of calculation.

3. Subordinate Obligations and Reimbursable Obligations originally issued with a maturity of five (5) years or less are assumed to mature in 30 years and bear interest equal to the Revenue Bond Index at the time of calculation.

4. In preparing the certificate required by the Basic Test described above, the Authorized Officer or the Consulting Engineer, as applicable, may make adjustments to the Net Revenues as follows:

a. If any changes have been made in the schedule of rates and charges imposed by the City and County for commodities and services furnished by the Wastewater System which are in effect at the time of adoption of the Series Resolution authorizing the issuance of the Bonds then being issued and were placed into effect subsequent to the start of the Fiscal Year or the 12-month period selected pursuant to item 3 of the *Basic Test* described above, the Authorized Officer, may, if such changes result in increases in such rates and charges, and must, if such changes result in reductions in such rates and charges, adjust the Net Revenues for such period to reflect any change in such Net Revenues which would have occurred if the schedule of rates and charges in effect at the time of the adoption of the Series Resolution providing for the issuance of such Bonds had been in effect during the portion of such period in which such schedule was not in effect.

b. If customers are being served by the Department at the time of adoption of the Series Resolution authorizing the issuance of the Bonds then being issued and who were added to the Wastewater System subsequent to the start of the Fiscal Year or the 12-month period selected pursuant to item 3 of the *Basic Test* described above, the Authorized Officer may adjust the Net Revenues for such period to reflect any change in such Net Revenues which would have occurred if the additional customers had been served during the portion of the period in which such customers were not served.

c. If residential, commercial, industrial or institutional customers which are in existence are not then served by the Wastewater System at the time of adoption of the Series Resolution authorizing the issuance of the Bonds then being issued, but are then expected to be served during the five (5) Fiscal Years covered by such certificate, the Authorized Officer or the Consulting Engineer, as applicable, must estimate the effect which such new customers would have had on the Net Revenues for the period selected pursuant to item 3 of the *Basic Test* described above, if such new customers had been served during the entire period and may adjust the Net Revenues for such period to give effect to such new customers. Any such estimate will be based upon the operating experience and records of the Department with respect to the Wastewater System and upon any available financial and quarterly statistics deemed pertinent by the Authorized Officer or the Consulting Engineer, as applicable.

d. If any long-term, guaranteed contracts with customers of the Wastewater System are in effect at the time of adoption of the Series Resolution authorizing the issuance of the Bonds then being issued and which were entered into subsequent to the start of the Fiscal Year or 12-month period selected pursuant to item 3 of the *Basic Test* described above, the Authorized Officer may adjust the Net Revenues for such period to reflect any change in such Net Revenues which would have occurred if such contracts had been in effect for the entire period.

e. In rendering the certificate required pursuant to item 3 of the Basic Test, the Authorized Officer or the Consulting Engineer, as applicable, must deem the Operation and Maintenance Expenses for the Wastewater System for the first Fiscal Year of the five (5) year period to be equal to such Operation and Maintenance Expenses for the Fiscal Year immediately preceding the Fiscal Year in which the proposed Series of Bonds is to be delivered, and thereafter the Authorized Officer or the Consulting Engineer, as applicable, must adjust, if deemed necessary, for any increased Operation and Maintenance Expenses which are estimated to occur

during any subsequent Fiscal Year during the five (5) year period and are, in the judgment of the Authorized Officer or the Consulting Engineer, as applicable, essential to maintaining and operating the Wastewater System.

f. In rendering any certificate pursuant to the Bond Resolution, the Authorized Officer or the Consulting Engineer, as applicable, may rely upon estimates from other sources which the Authorized Officer or the Consulting Engineer, considers reliable, making such adjustments and provisions for contingencies based on similar projects and other considerations as deemed appropriate by such Authorized Officer or the Consulting Engineer.

Refunding Bonds

The City and County may issue a Series of refunding Bonds at any time for the purpose of refunding (including by purchase) all or any portion of Bonds Outstanding, including amounts to pay principal, redemption premium and interest to the date of maturity or redemption (or purchase) and the expense of issuing the refunding Bonds and of effecting such refunding if the conditions set forth in the Bond Resolution are complied with, including all of the conditions of the *Basic Test* described above, except that condition 3 need not be complied with if the maximum annual Debt Service in any Fiscal Year on the refunding Bonds proposed to be issued does not exceed maximum annual Debt Service in any Fiscal Year on the refunded Bonds by more than 10%.

The City and County may also issue a Series of refunding Bonds at any time for the purpose of refunding (including by purchase) all or any portion of outstanding Subordinate Obligations or Reimbursable Obligations, including amounts to pay principal, redemption premium and interest to the date of maturity or redemption (or purchase) and the expense of issuing the refunding Bonds and of effecting such refunding if the conditions set forth in the Bond Resolution are complied with, including all of the conditions of the *Basic Test* described above.

Bond Anticipation Notes

Bond Anticipations Notes may be issued by the City and County at such time as the City and County shall have by a Series Resolution duly adopted authorized the issuance of Bonds under the Bond Resolution. No Bond Anticipation Notes may be issued unless there has been filed with the Director of Budget and Fiscal Services on or prior to the date of issuance of such Bond Anticipation Notes, a written certificate of the City and County to the effect that, based on market conditions expected to be prevailing at the time of issuance of the Series of Bonds in anticipation of which such Bond Anticipation Notes are issued and on other reasonable assumptions set forth in such written certificate, the provisions of the Bond Resolution for the issuance of additional Bonds other than refunding Bonds are expected to be complied with at the time of issuance of such Series of Bonds. The maximum maturity of any Bond Anticipation Notes, including the renewals thereof, must not exceed five years from the date of the original Bond Anticipation Note. The principal of Bond Anticipation Notes may be paid from the proceeds of such Bond Anticipation Notes (or any renewal thereof) or from the proceeds of the Bonds in anticipation of which such Bond Anticipation Notes were issued. The interest on such Bond Anticipation Notes may be secured by a lien on and pledge of, and be paid from, the Net Revenues on a parity with the lien on and pledge of the Net Revenues created in the Bond Resolution for the payment and security of the Bonds. The principal of Bond Anticipation Notes will be secured by a lien on and pledge of the proceeds of the Bonds in anticipation of which such Bond Anticipation Notes were issued and any such pledge will have priority over any other pledge of such proceeds created by the Bond Resolution. Bond Anticipation Notes issued under the Bond Resolution are to be treated as Bonds for all purposes of the Bond Resolution, and are to be payable from the Debt Service Account, except to the extent that the principal of any such Bond Anticipation Note is paid from the proceeds of other Bond Anticipation Note or from the proceeds of Bonds.

Subordinate Obligations

The City and County may issue Subordinate Obligations which are payable out of, and which may be secured by a pledge of, such amounts in the Subordinate Obligation Account as may from time to time be available for the purpose of payment. The City and County may, by resolution, provide for various priorities in the liens and pledges securing Subordinate Obligations, and nothing in the Bond Resolution shall be construed so as to require that the payment of, or pledges securing, Subordinate Obligations be on a parity *inter se*.

The City and County may also issue Subordinate Obligations: (i) to refund any Subordinate Obligations issued as provided in the Bond Resolution; (ii) to refund Outstanding Bonds; or (iii) to refund any Reimbursable Obligations. Such Subordinate Obligations issued for refunding purposes may be payable out of, and may be secured by a pledge of, such amounts in the Subordinate Obligations Fund or Wastewater General Account as may from time to time be available therefor.

The Bond Resolution requires that any resolution, indenture or other instrument securing or evidencing each issue of Subordinate Obligations must contain provisions (which shall be binding on all holders of such Subordinate Obligations) not more favorable to the holders of such Subordinate Obligations than as described below:

(1) In the event of any insolvency or bankruptcy proceedings, and any receivership, liquidation, reorganization or other similar proceedings in connection therewith, relative to the City and County or the Department, or to the property of the City and County or property operated by the Department, and in the event of any proceedings for voluntary liquidation, dissolution or other winding up of the City and County or the Department, the Holders of all Bonds then Outstanding will be entitled to receive payment in full of all principal and interest on all such Bonds before the holders of the Subordinate Obligations are entitled to receive any payment from the trust estate under the Bond Resolution consisting of the Net Revenues and funds held under the Bond Resolution (the "Trust Estate" for these purposes) on account of principal (and premium, if any) or interest on the Subordinate Obligations.

(2) In the event that any issue of Subordinate Obligations is declared due and payable before its expressed maturity because of the occurrence of an event of default (under circumstances when the provisions of (1) above are not applicable), the Holders of all Bonds Outstanding at the time such Subordinate Obligations so become due and payable because of such occurrence of such an event of default will be entitled to receive payment in full of all principal and interest on all such Bonds before the holders of the Subordinate Obligations are entitled to receive any accelerated payment from the Trust Estate of principal (and premium, if any) or interest on the Subordinate Obligations.

(3) If any Event of Default with respect to the Bonds has occurred and be continuing (under circumstances when the provisions of (1) above are not applicable), the Holders of all Bonds then Outstanding will be entitled to receive payment in full of all principal and interest on all such Bonds before the holders of the Subordinate Obligations are entitled to receive any accelerated payment from the Trust Estate of principal (and premium, if any) or interest on the Subordinate Obligations.

(4) No Bondholder shall be prejudiced in his right to enforce subordination of the Subordinate Obligations by any act or failure to act on the part of the City and County.

(5) The Subordinate Obligations may provide that the provisions of (1), (2), (3) and (4) above are solely for the purpose of defining the relative rights of the Bondholders on the one hand, and the holders of Subordinate Obligations on the other hand, and nothing therein shall impair, as between the City and County and the owners of the Subordinate Obligations, the obligation of the City and County to pay to the owners thereof the principal thereof and premium, if any, and interest thereon in accordance with its terms, nor shall anything therein prevent the holders of the Subordinate Obligations from exercising all remedies otherwise permitted by applicable law or thereunder upon default thereunder, subject to the rights under (1), (2), (3) and (4) above of the Holders of Bonds to receive cash, property or securities otherwise payable or deliverable to the holders of the Subordinate Obligations; and the Subordinate Obligations may provide that, insofar as a trustee or paying agent for such Subordinate Obligations is concerned, the foregoing provisions shall not prevent the application by such trustee or paying agent of any moneys deposited with such trustee or paying agent for the purpose of the payment of or on account of the principal (and premium, if any) and interest on such Subordinate Obligations if such trustee or paying agent did not have knowledge at the time of such application that such payment was prohibited by the foregoing provisions.

Any issue of Subordinate Obligations may have such rank or priority with respect to any other issue of Subordinate Obligations as may be provided in the resolution, indenture or other instrument securing such

issue of Subordinate Obligations and may contain such other provisions as are not in conflict with the provisions of the Bond Resolution.

Reimbursable Obligations

The obligation for the payment of Reimbursable Obligations shall be: (i) after and inferior to the lien and security interest for the payment of Bonds and those Subordinate Obligations which are payable from the Subordinate Obligation Account; and (ii) prior and superior to the lien and security interest for the payment of those Subordinate Obligations which are payable from the Wastewater General Account. Reimbursable Obligations are payable from the Reimbursable Obligation Account.

Support Facilities and Interest Rate Exchange Agreements

In connection with the issuance of any Series of Bonds and to the extent permitted by law, the City and County may obtain or cause to be obtained from one or more Support Facility Providers one or more Support Facilities providing for payment of all or a portion of the purchase price or principal, premium, if any, or interest due or to become due on specified Bonds of such Series, or providing for the purchase of such Bonds or a portion of such Bonds by such Support Facility Providers, or providing, in whole or in part, for the funding of the Common Reserve Account or a Separate Series Reserve Account pursuant to the Bond Resolution.

In connection with the issuance of any Series of Bonds or to better manage its assets and liabilities and, to the extent permitted by law, the City and County may enter into with one or more Counterparties one or more Interest Rate Exchange Agreements; *provided* that no such Interest Rate Exchange Agreement shall adversely affect the exclusion from gross income for purposes of federal income taxation of interest on the Tax-exempt Bonds of any Series.

The City and County may enter into agreements with one or more Support Facility Providers or Counterparties to provide for, among other things: (i) the payment of fees and expenses to such Support Facility Providers or Counterparties; (ii) the terms and conditions of such Support Facility or Interest Rate Exchange Agreement and the Series of Bonds affected thereby; and (iii) the security, if any, to be provided to such Support Facility Providers or Counterparties. The City and County may secure the Support Facility or Interest Rate Exchange Agreement by an agreement providing for the purchase of the Bonds secured thereby with such adjustments to the rate of interest, method of determining interest, maturity, or redemption provisions as specified in the Series Resolution or the Series Certificate. Debt Service with respect to any Bonds so secured is to be calculated for purposes of the definition of Common Reserve Account Requirement by using the Assumed Long-Term Fixed Rate.

The City and County may also agree in any agreement with the Support Facility Provider of such Support Facility or the Counterparty under an Interest Rate Exchange Agreement to reimburse directly such Support Facility Provider or Counterparty for any amounts paid under the terms of such Support Facility or Interest Rate Exchange Agreement, together with interest thereon (the "Support Facility Reimbursement Obligation"); *provided, however,* that no Support Facility Reimbursement Obligation is to be created, for purposes of the Bond Resolution, until amounts are paid under such Support Facility or Interest Rate Exchange Agreement, as the case may be. Any such Support Facility Reimbursement Obligation may be secured by a lien on and pledge of the Net Revenues on a parity with the lien on and pledge of the Net Revenues created by the Bond Resolution with respect to the Bonds (a "Parity Support Facility Reimbursement Obligation"). Any such Parity Support Facility Reimbursement Obligation will be deemed to be a part of the Series of Bonds to which the Support Facility which gave rise to such Parity Support Facility Reimbursement Obligation relates. Payment of Support Facility Reimbursement Obligation may be made out of the Sewer Fund as provided in the Bond Resolution.

Any Support Facility deposited in the Common Reserve Account or the long-term debt of the Support Facility Provider of such Support Facility must, in each case, be in the highest rating category each Rating Agency, and if rated by A.M. Best & Company, also be rated in the highest rating category by A.M. Best & Company or its successors. In the event any Support Facility deposited in the Common Reserve Account or the long-term debt of the issuer of any Support Facility deposited in the Common Reserve Account falls below the highest rating category of each Rating Agency, and A.M. Best & Company, if rated by A.M. Best & Company, the City and County must, within 120 days, obtain a new Support Facility which is rated in the highest category of each

Rating Agency or for which the long-term debt of the issuer of such new Support Facility is rated in the highest rating category of each Rating Agency and A.M. Best & Company, if rated by A.M. Best & Company; provided, however, that if the new Support Facility is not obtained within 120 days, the City and County must deposit in the Common Reserve Account Net Revenues in the amount provided in the Bond Resolution. If a disbursement is made pursuant to a Support Facility deposited in the Common Reserve Account, the City and County must: first, reinstate the full amount of such Support Facility; and second, if necessary deposit Net Revenues in the Common Reserve Account in the amount of the disbursement made under such Support Facility, in either case such that the amount in the Common Reserve Account is equal to the Common Reserve Account Requirement within a period of time not longer than would be required to restore the Common Reserve Account by application of moneys in the Sewer Fund. The City and County may at any time deposit cash or Investment Securities as replacement for one or more Support Facilities.

The City and County must obtain and maintain in effect one or more Support Facilities for Option Bonds. The City and County must obtain a replacement Support Facility to replace any Support Facility for Option Bonds that is expiring, not renewed or terminated. Procedures for such replacement, maintenance and notices to Bondholders, rating agencies or other persons are to be provided in the Series Resolution authorizing the Series of Bonds or the Series Certificate relating to such Bonds.

Funds and Accounts

The City and County has established by ordinances the Sewer Fund and the Sewer Revenue Bond Improvement Fund (the "Improvement Fund"). The Bond Resolution establishes the following accounts in the Sewer Fund:

- Wastewater System Facility Charge Account,
- Debt Service Account,
- Common Reserve Account,
- Rebate Account,
- Rate Stabilization Account,
- Subordinate Obligation Account,
- Reimbursable Obligation Account,
- Renewal and Replacement Account, and
- Wastewater General Account.

The Bond Resolution permits the creation and establishment of one or more Separate Series Reserve Accounts in the Sewer Fund. The Bond Resolution also permits the establishment of one or more Series Improvement Subaccounts in the Improvement Account and requires the establishment of one or more Series Improvement Interest Subaccounts in the Improvement Account if interest on the Bonds of a Series is to be paid from the proceeds of such Bonds during the period of construction of any Improvements and for six months thereafter.

Sewer Fund

Revenues and Wastewater System Facility Charges will be collected by the Department and deposited into the Sewer Fund. From the amounts deposited in the Sewer Fund, the Department will transfer all moneys collected as Wastewater System Facility Charges to the Wastewater System Facility Charge Account, pay the current Operation and Maintenance Expenses, transfer to the Rebate Account such amount as is necessary to pay the rebate amount due the United States Treasury Department under Section 148 of the Code or to set aside as a reserve for such payment and make the transfers to other funds and accounts as provided in the Bond Resolution. In addition, all other amounts required by the City Charter and the Bond Resolution to be deposited in the Sewer Fund will be so deposited.

In each month, the City and County, after making the transfer, if any, to the Wastewater System Facility Charge Account of all moneys received as Wastewater System Facility Charges, after paying or setting aside a sufficient amount to pay the Operating and Maintenance Expenses and making the transfer to the Rebate Account as described above, will retain, apply or transfer on the 5th day preceding the end of each month a sufficient amount of moneys in the Sewer Fund, in the following order of priority:

First, to the Debt Service Account, if and to the extent required so that the balance in the Debt Service Account will be equal to the Accrued Debt Service for all Bonds Outstanding and the interest accrued on all Bond Anticipation Notes outstanding on said date;

Second, (a) to the Common Reserve Account, if and to the extent required, either (i) an amount such that the balance in the Common Reserve Account will be equal to the Common Reserve Account Requirement on such date, or (ii) an amount such that if the same amount were deposited in each month the amount of any deficiency in the Common Reserve Account will be eliminated at the end of the sixth (6th) month following the first credit; and (b) to each Separate Series Reserve Account, if and to the extent required, either (i) an amount such that the balance in each Separate Series Reserve Account will be equaled to the Separate Series Reserve Account Requirement for each Separate Series Reserve Account on such date, or (ii) an amount such that if the same amount were deposited in each month the amount of any deficiency in each Separate Series Common Reserve Account will be eliminated at the end of the sixth (6th) month following the first credit; provided, however, that such transfers shall be pro rata, based on the proportion of the Common Reserve Account Requirement and each Separate Series Reserve Account Requirement to the sum of the Common Reserve Account Requirement and all Separate Series Reserve Account Requirements;

Third, in the Sewer Fund, a reasonable and necessary amount for working capital and operating reserves;

Fourth, to the Subordinate Obligation Account, the amount, if any, equal to all Subordinate Obligation Requirements theretofore accrued and unpaid and not met from any other source and to accrue and become payable during the succeeding calendar month and not met from any other source;

Fifth, to the Reimbursable Obligation Account, the amount, if any, equal to all Reimbursable Obligation Requirements payable on such day and not met from any other source;

Sixth, to the Renewal and Replacement Account, an amount equal to 1/12th of the amount provided in the Annual Budget of the City and County to be credited to such Account during such Fiscal Year; provided, however, that if any such monthly allocation to the Renewal and Replacement Account is less than the required amount, the amount of the next succeeding monthly payment must be increased by the amount of such deficiency;

Seventh, to the Wastewater System Facility Charge Account, such amount as is set forth in a written certificate to reimburse such Account for the amount of any transfer to the Debt Service Account made pursuant to the Bond Resolution;

Eighth, to the Rate Stabilization Account, such amount as is provided in the Annual Budget to be transferred to the Rate Stabilization Account in such month or so much thereof as is available; provided, however, that if any such monthly allocation to the Rate Stabilization Account is less than the required amount, the amount of the next succeeding monthly payment must be increased by the amount of such deficiency; and

Ninth, to the Wastewater General Account, such amount as is forth in a written certificate of the City and County.

The City and County may, if provided in a Series Resolution or a Series Certificate relating to such Bonds, directly pay out of the Sewer Fund reimbursements to providers of Support Facilities which have been drawn upon in the same priority and order as payments from the Sewer Fund to the Debt Service Account, the Common Reserve Account, each Separate Series Reserve Account or other Funds and Accounts as if such payments were part of such Funds and Accounts.

Purposes of the Various Funds and Accounts

Sewer Fund - Debt Service Account. The principal of and interest on, any Sinking Fund Installment, the Redemption Price of and interest on the Bonds and interest on Bond Anticipation Notes are to be paid out of the Debt Service Account in the Sewer Fund to each Paying Agent on or before the respective due dates.

Amounts accumulated in the Debt Service Account by reason of the payment of any Sinking Fund Installment may be applied by the City and County, on or prior to the 60th day preceding the due date of such Sinking Fund Installment, to: (i) the purchase of Bonds of the maturity for which such Sinking Fund Installment was established, or (ii) the redemption of such Bonds at the applicable Redemption Price, if then redeemable by their terms. All such purchases of Bonds are to: (i) be made at prices not exceeding the applicable Redemption Price of such Bonds plus accrued interest; (ii) be made as arranged by the City and County in such manner and from such sellers or brokers at such prices as the City and County may determine; and (iii) be made to insure that delivery of the Bonds so purchased will not occur later than the 60th day next preceding the redemption date to which the Sinking Fund Installment is to be applied. The applicable Redemption Price of any Bonds (or principal amount of maturing Bonds) so purchased or redeemed is deemed to constitute part of the Debt Service Account until such Sinking Fund Installment date, for the purpose of calculating the amount of such Account. As soon as practicable after the 60th day preceding the due date of any such Sinking Fund Installment, the City and County must proceed to call for redemption on such due date Bonds of the maturity for which such Sinking Fund Installment was established (except in the case of Bonds maturing on a Sinking Fund Installment date) in such amount as is necessary to complete the retirement of the unsatisfied balance of such Sinking Fund Installment after making allowance for any Bonds purchased or redeemed pursuant to the Bond Resolution which the City and County has applied as a credit against such Sinking Fund Installment as provided in the Bond Resolution.

The amount, if any, credited to the Debt Service Account from a Series Improvement Interest Subaccount is to be applied to the payment of interest on the Bonds as the same becomes due and payable as provided in the Bond Resolution.

Upon any purchase or redemption pursuant to the Bond Resolution of Bonds of any Series and maturity for which Sinking Fund Installments shall have been established: (i) if the principal amount of the Bonds so purchased is less than or equal to the next succeeding Sinking Fund Installment for such Series there is to be credited to the next such Sinking Fund Installment an amount equal to the principal amount of the Bonds of such Series so purchased; and (ii) if the principal amount of the Bonds so purchased is greater than the next succeeding Sinking Fund Installment, there is to be credited toward each such Sinking Fund Installment thereafter to become due an amount bearing the same ratio to such Sinking Fund Installment as the total principal amount of such Bonds so purchased or redeemed bears to the total principal amount of all such Sinking Fund Installments to be so credited or, at the option of the City and County, an amount equal to the next succeeding Sinking Fund Installment. The portion of any such Sinking Fund Installment remaining after the deduction of any such amounts credited toward the same (or the original amount of any such Sinking Fund Installment if no such amounts have been credited toward the same) will constitute the unsatisfied balance of such Sinking Fund Installment for the purpose of calculation of Sinking Fund Installments due on a future date.

All of the Refundable Credits received by the City and County shall be deposited immediately upon receipt in the Debt Service Account, and such Refundable Credits are irrevocably pledged to the punctual payment of the interest on the respective Series of Interest Subsidy Bonds to which such Refundable Credits relate, and the Refundable Credits shall not be used for any other purpose while any of the Interest Subsidy Bonds remain Outstanding. All the Refundable Credits as received by the City and County shall immediately be subject to the lien of this pledge without any physical delivery thereof or further act, and the lien of the pledge shall be valid as against, and prior to the lien of, all parties having claims of any kind in tort, contract or otherwise against the City and County irrespective of whether such parties have notice thereof. Notwithstanding the foregoing deposit and pledge, the Refundable Credits are not considered Revenues or included in the calculation or Revenues under the Bond Resolution. Additionally, in calculating the amount that the City and County pays out of the Debt Service Account to the applicable Paying Agents as described in the first paragraph under the heading “- Purposes of the Various Funds and Accounts” above, the City and County or the Paying Agent, as applicable, shall take into account Refundable Credits only if they have been deposited in the Debt Service Account on or prior to the Business Days preceding the applicable interest payment date and have not previously expended to pay Debt Service on the Bonds issued as Interest Subsidy Bonds or otherwise transferred out of the Debt Service Account.

Sewer Fund - Common Reserve Account. If on the day preceding any principal or interest payment date, the amount in the Debt Service Account is less than the Accrued Debt Service for all Bonds then Outstanding which are entitled to the benefit of the Common Reserve Account, the City and County will pay out of the Common Reserve Account to each Paying Agent for such Bonds the amount necessary to satisfy the deficiency for payment to the holders of such Bonds. Amounts so applied are to be derived first, from cash or Investments Securities on credit to the Common Reserve Account and second, from draws or demands on Support Facilities held as a part of the Common Reserve Account, such draws or demands to be made *pro rata* among all such Support Facilities based on the respective available amounts under such Support Facilities and upon the terms and conditions set forth in such Support Facilities.

Whenever the amounts on deposit in the Common Reserve Account exceed the Common Reserve Account Requirement, the City and County will withdraw the amount of such excess and deposit such excess to the credit of the Debt Service Account or the Sewer Fund, as the City and County may determine.

Whenever the amount (exclusive of Support Facilities) in the Common Reserve Account, together with the amount in the Debt Service Account attributable to Bonds entitled to the benefit of the Common Reserve Account, is sufficient to pay in full the principal or Redemption Price, if any, of and interest on all such Outstanding Bonds in accordance with their terms, the funds on credit to the Common Reserve Account are to be transferred to the Debt Service Account and applied to make such payment. Prior to such transfer, all Investment Securities held in the Common Reserve Account will to be liquidated by the City and County to the extent necessary to provide for timely payment of the principal or Redemption Price, if any, of and interest on such Bonds.

When a Series of Bonds entitled to the benefit of the Common Reserve Account are refunded in whole or in part or is otherwise deemed paid within the meaning of the Bond Resolution, moneys may be withdrawn from the Common Reserve Account to pay or provide for the payment of such Bonds or refunded Bonds, as the case may be; provided that immediately after such withdrawal or transfer there must be on credit to the Common Reserve Account for those Bonds of the Series of Bonds not refunded an amount equal to the Common Reserve Account Requirement for the Bonds entitled to the benefit of the Common Reserve Account then Outstanding after taking into account such refunding or payment.

The City and County may determine in the Series Resolution authorizing a Series of Bonds or a Series Certificate related to a Series of Bonds that such Series of Bonds will not be entitled to the benefit of the Common Reserve Account, in which case no amount will be required from the proceeds of such Series of Bonds for credit to the Common Reserve Account and no amount will be payable from the Common Reserve Account to pay amounts due or payable with respect to such Series of Bonds.

The Common Reserve Account Requirement is to be calculated or recalculated: (i) at the time of issuance of a Series of Bonds (or Bond Anticipation Notes); (ii) at the time a Series of Bonds is retired in its entirety; (iii) at such other time as in the Opinion of Counsel is required to maintain the exclusion of interest on the Tax-exempt Bonds from gross income for federal income taxation purposes.

Sewer Fund - Separate Series Reserve Accounts. If on the day preceding any principal or interest payment date, the amount in the Debt Service Account is less than Accrued Debt Service for the Bonds of a Series then Outstanding which are entitled to the benefit of a Separate Series Reserve Account, the City and County will pay out of such Separate Series Reserve Account to the Paying Agent for such Bonds the amount necessary to satisfy the deficiency for payment to the holders of such Bonds. Amounts so applied shall be derived first, from cash or Investments Securities on credit to such Separate Series Reserve Account and second, from draws or demands on Support Facilities held as a part thereof, such draws or demands to be made *pro rata* among all such Support Facilities based on the respective available amounts under such Support Facilities and upon the terms and conditions set forth in such Support Facilities.

Whenever the amounts on deposit in any Separate Series Reserve Account exceed the applicable Separate Series Reserve Account Requirement, the City and County will withdraw the amount of such excess and deposit such excess to the credit of the Debt Service Account or the Sewer Fund, as the City and County may determine.

Whenever the amount (exclusive of Support Facilities) in any Separate Series Reserve Account, together with the amount in the Debt Service Account attributable to Bonds entitled to the benefit of such Separate Series Reserve Account, is sufficient to pay in full the principal or Redemption Price, if any, of and interest on all such Outstanding Bonds in accordance with their terms, the funds on credit to such Separate Series Reserve Account are to be transferred to the Debt Service Account and applied to make such payment. Prior to such transfer, all Investment Securities held in such Separate Series Reserve Account will be liquidated by the City and County to the extent necessary to provide for timely payment of the principal or Redemption Price of and interest on such Bonds.

When a Series of Bonds entitled to the benefit of the Separate Series Reserve Account are refunded in whole or in part or are otherwise deemed paid within the meaning of the Bond Resolution, moneys may be withdrawn from such Separate Series Reserve Account to pay or provide for the payment of such Bonds or refunded Bonds, as the case may be; *provided* that immediately after such withdrawal or transfer there must be on credit to such Separate Series Reserve Account an amount equal to the Separate Series Reserve Account Requirement for the Bonds then Outstanding which are entitled to the benefit of such Separate Series Reserve Account after taking into account such refunding or payment.

Each Separate Series Reserve Account Requirement is to be calculated or recalculated: (i) at the time of issuance of a Series of Bonds (or Bond Anticipation Notes); (ii) at the time a Series of Bonds is retired in its entirety; (iii) at such other time as in the Opinion of Counsel is required to maintain the exclusion of interest on the Tax-exempt Bonds from gross income for federal income taxation purposes.

Certain provisions of the Bond Resolution relating to Separate Series Reserve Account may be modified in whole or in part with respect to any Series of Bonds entitled to the benefits of a Separate Series Reserve Account.

Sewer Fund - Rebate Account. If and to the extent required by the Code, an Authorized Officer must periodically, at such times as may be required to comply with the Code, determine the amount required to be rebated or otherwise paid to the Department of the Treasury of the United States of America with respect to each Series of Tax-exempt Bonds and thereafter (i) transfer from any of the Funds and Accounts pledged or held under the Bond Resolution, other than the Debt Service Account, the Subordinate Obligation Account and the Reimbursable Obligation Account and credit to the Rebate Account an amount equal to all or a portion of such amount to be rebated with respect to such Series of Bonds and (ii) pay out of the Rebate Account to the Department of the Treasury of the United States of America the amount, if any, required by the Code to be rebated or otherwise paid. Moneys in the Rebate Account and the subaccounts therein are not available for the benefit of the Holders of the Bonds and are not pledged to the payment of the Bonds or the interest thereon.

If and to the extent necessary to comply with any covenant established in a Series Resolution authorizing a Series of Bonds or in a Series Certificate relating to such Series of Bonds regarding maintaining the exclusion of interest on Tax-exempt Bonds from gross income for Federal income taxation purposes, the City and County may establish a subaccount in the Rebate Account with respect to such Series of Bonds or provide for the establishment such subaccount in such Series Resolution or in such Series Certificate.

Sewer Fund - Rate Stabilization Account. The amount of moneys and Investment Securities to be maintained from time to time in the Rate Stabilization Account is to be provided for in the Annual Budget. Moneys and Investment Securities may be transferred to the Rate Stabilization Account as provided in the Annual Budget from (i) the Sewer Fund in the order of priority provided in the Bond Resolution, or (ii) the Wastewater General Account as provided in the Bond Resolution. Moneys and Investment Securities credited to the Rate Stabilization Account are to be transferred to the Sewer Fund at the times and in the amounts as may be provided in the Annual Budget for the purposes of stabilizing the rates and charges of the Wastewater System.

Sewer Fund - Renewal and Replacement Account. Moneys on credit to the Renewal and Replacement Account may be applied to the cost of the construction of improvements to or reconstruction of the Wastewater System, emergency repairs of the Wastewater System, and major or extraordinary repairs, renewals or replacements of the Wastewater System, in each case to be set forth in the Annual Budget; (i) to restore or prevent physical damage to the Wastewater System or any part thereof; (ii) for the safe and efficient operation of the Wastewater System; or (iii) to prevent loss of Revenues.

If on the day preceding any interest payment date the moneys in the Debt Service Account, after making the transfer from the Common Reserve Account from each Separate Series Account as provided for in the Bond Resolution and from the Wastewater General Account as provided for in the Bond Resolution, are insufficient to pay the interest, principal and redemption price becoming due on the Bonds, the City and County must transfer from the Renewal and Replacement Account for credit to the Debt Service Account the amount necessary (or all the moneys in such Fund if less than the amount necessary) to satisfy such deficiency.

If on each January 1 and July 1 (i) the moneys, Investment Securities and the amount of Support Facilities in the Common Reserve Account are less than the Common Reserve Account Requirement, and the transfer referred to in the preceding paragraph has been made, the City and County must transfer from the Renewal and Replacement Account for credit to the Common Reserve Account the amount necessary (or all the moneys in such Account if less than the amount necessary) to satisfy such deficiency; and (ii) the moneys, Investment Securities and amount of Support Facilities in any Separate Series Reserve Account are less than the Separate Series Reserve Account Requirement for such Separate Series Reserve Account, and the transfer referred to in the preceding paragraph has been made, the City and County must transfer from the Renewal and Replacement Account for credit to such Separate Series Reserve Account the amount necessary (or all the moneys in said Account if less than the amount necessary) to eliminate such deficiency; *provided, however*, that such transfers will be *pro rata*, based on the proportion of the Common Reserve Account Requirement and each Separate Series Reserve Account Requirement to the sum of the Common Reserve Account Requirement and all Separate Series Reserve Account Requirements.

If the moneys on credit to the Subordinate Obligation Account are less than the Subordinate Obligation Requirement, and the transfers referred to in the preceding two paragraphs have been made, the City and County will transfer from the Renewal and Replacement Account to the Subordinate Obligation Account the amount necessary (or all the moneys in such Account if less than the amount necessary) to satisfy such deficiency.

If the moneys on deposit in the Reimbursable Obligation Account are less than the Reimbursable Obligation Requirement, and the transfers referred to in the preceding three paragraphs have been made, the City and County must transfer from the Renewal and Replacement Account to the Reimbursable Obligation Account the amount necessary (or all the moneys in such Account if less than the amount necessary) to satisfy such deficiency.

Sewer Fund - Subordinate Obligation Account. The City and County must at all times maintain in the Subordinate Obligation Account an amount equal to the Subordinate Obligation Requirement. Moneys on deposit in the Subordinate Obligation Account will be applied by the City and County solely in accordance with the provisions of, and subject to the priorities and limitations and restrictions provided in the resolution, indenture or other instrument of the City and County securing or evidencing such Subordinate Obligations. Any moneys credited to the Subordinate Obligation Account are immediately free and clear of the lien and pledge created by the Bond Resolution.

Sewer Fund - Reimbursable Obligation Account. The City and County must at all times maintain in the Reimbursable Obligation Account an amount equal to the Reimbursable Obligation Requirement. Moneys on deposit in the Reimbursable Obligation Account will be applied by the City and County solely to reimburse the General Fund of the City and County for payment of debt service due on Reimbursable Obligation issued or to be issued by the City and County with respect to the Wastewater System. Any moneys deposited in the Reimbursable Obligation Account are immediately free and clear of the lien and pledge created by the Bond Resolution.

Sewer Fund - Wastewater General Account. The City and County will transfer from the Wastewater General Account: (i) to the Debt Service Account, the Common Reserve Account and each Separate Series Reserve Account the amount necessary (or all the moneys in the Wastewater General Account if less than the amount necessary) to satisfy any deficiencies in payments to such Accounts required by the Bond Resolution; (ii) in the event of any transfer of moneys from the Common Reserve Account or any Separate Series Reserve Account to the Debt Service Account, to the Common Reserve Account or such Separate Series Reserve Account the amount of any resulting deficiency in such Account; (iii) provided that all transfers referred to in clauses (i) and (ii) above have been made, to the Renewal and Replacement Account the amount, if any, necessary to satisfy the deficiency in such Fund; (iv) such amount as the City and County may, in its discretion, determine to set aside in reserve for meeting the deficiencies referred to in clauses (i) through (iii) above; (v) provided that all transfers and reserves therefor referred to in clauses (i) through (iv) above have been made, to the Subordinate Obligation Account the amount, if

any, necessary to satisfy any deficiency in meeting the Subordinate Obligation Requirement; and (vi) provided that all transfers and reserves therefor referred to in clauses (i) through (v) above have been made, to the Reimbursable Obligation Account, the amount, if any, necessary to eliminate any deficiency in meeting the Reimbursable Obligation Requirement.

Amounts in the Wastewater General Account not required to meet a deficiency referred to in the preceding paragraph may be applied to the following purposes in the following order of priority:

- (1) the Costs of Improvements, or the provision of one or more reserves therefor;
- (2) for transfer to the Rate Stabilization Account in the Sewer Fund such amounts as may be provided in the Annual Budget for the purpose of stabilizing rates and charges;
- (3) the purchase at such price or prices as the City and County may deem advisable or redemption of any Bonds and expenses of such purchase or redemption at any time; and
- (4) for any other lawful purpose of the City and County.

Sewer Revenue Bond Improvement Fund - Improvement Account. As soon as practicable on the date of delivery of the Bonds of a Series, the amount required pursuant to the Series Resolution or Series Certificate will be deposited in the Improvement Fund for credit to the Improvement Account. In addition, the City and County will deposit in the Improvement Fund for credit to the Improvement Account such moneys other than proceeds of the Bonds as the City and County may determine to be proper or appropriate to pay the Costs of Improvements.

The Series Resolution authorizing the issuance of any Series of Bonds (exclusive of Refunding Bonds) may create and establish one or more separate special series improvement subaccounts (a "Series Improvement Subaccount") in the Improvement Account, with such designation as may be appropriate. In the event any interest on such Bonds is to be capitalized from the proceeds of such Bonds, a special series subaccount must be created in the Improvement Account (a "Series Improvement Interest Subaccount") with such designation as may be appropriate.

Moneys, including proceeds of the Bonds of a Series, which are credited to a Series Improvement Subaccount are to be applied to the payment of the Costs as are specified in the applicable Series Resolution or Series Certificate. Any balance remaining in such Series Improvement Subaccount upon completion of payment of such Costs may be used for any lawful purpose of the City and County; *provided* that the City and County has obtained an Opinion of Counsel that any such application will not impair the exemption from Federal income taxation of interest on any of the Tax-exempt Bonds.

Moneys credited to a Series Improvement Interest Subaccount are to be used for the purpose of paying interest on the Bonds of designated Series. On or before the fifth (5th) day preceding the end of the month next preceding the maturity of an installment of interest on the Bonds for the payment of which moneys have been credited to such Series Improvement Interest Subaccount, the City and County must transfer from a Series Improvement Interest Subaccount to the Debt Service Account an amount which, together with any moneys theretofore held in the Debt Service Account, are sufficient to pay such next maturing installment of interest on such Bonds.

Payments from the Improvement Account are to be made as specified in the Series Resolution authorizing the issuance of a Series of Bonds or a Series Certificate related to a Series of Bonds.

Moneys, including proceeds of the Bonds, in the Improvement Account, pending their application as provided in the Bond Resolution and Series Resolution and Series Certificate, are subject to a prior and paramount lien and charge in favor of the Holders of the Bonds, and the Holders of the Bonds have a valid claim on such moneys for the further security of the Bonds until paid out or transferred as provided in the Bond Resolution. In the event that there is an insufficiency in the Debt Service Account to pay Debt Service after all transfers, other than a transfer from the Wastewater System Facility Charge Account, have been made pursuant to and in accordance with the Bond Resolution, the City and County must transfer from the Improvement Account such amount (or all remaining amounts in such Improvement Account) as is deemed necessary by the Director of Budget and Fiscal

Services for deposit in the Debt Service Account, which, together with the amounts then on credit to the Debt Service Account, is sufficient to pay Debt Service.

Sewer Fund – Wastewater System Facility Charge Account. Amounts in the Wastewater System Facility Charge Account and any account therein, pending their application, are subject to a prior and paramount lien and charge in favor of the Holders of the Bonds, and the Holders of the Bonds have a valid claim on such moneys for the further security of the Bonds until paid out or transferred as provided in the Bond Resolution. In the event that there is an insufficiency in the Debt Service Account to pay Debt Service after all transfers have been made pursuant to and in accordance with the Bond Resolution, the City and County must transfer from the Wastewater System Facility Charge Account such amount (or all remaining amounts in the Wastewater System Facility Charge Account) as is deemed necessary by the Director of Budget and Fiscal Services for deposit in the Debt Service Account, which, together with the amounts then on deposit in the Debt Service Account, is sufficient to pay Debt Service. The amount of any such transfer must at the earliest practicable date be reimbursed to the Wastewater System Facility Charge Account as provided in the Bond Resolution.

Amounts held in the Wastewater System Facility Charge Account are to be expended for the purposes specified in Section 6-47.1 of the City Code.

Investment of Funds

Moneys in the Debt Service Account may, to the fullest extent practicable and reasonable, be invested and reinvested solely in noncallable Investment Securities which are Government Obligations, FNMA's or FHLMC's (as such terms are defined in the definition of Investment Securities) and which mature or are subject to redemption at the option of the holder thereof on or prior to the respective dates when the moneys in Debt Service Account will be required for the purposes intended. Moneys in the Common Reserve Account or any Separate Series Reserve Account not required for immediate disbursement for the purpose for which the Common Reserve Account or such Separate Series Reserve Account is created may, to the fullest extent practicable and reasonable, be invested and reinvested solely in, and obligations credited to the Common Reserve Account or such Separate Series Reserve Account must be, investments specified in items (i) to (vi), inclusive, of the definition of Investment Securities and which mature or are available at par at or prior to five (5) years from the date of investment thereof.

Moneys in the Sewer Fund not required for immediate disbursement for the purpose for which such Fund is created may, to the fullest extent practicable and reasonable, be invested and reinvested, to the extent allowed by law, solely in, and obligations deposited in such Fund will be, Investment Securities which mature or are subject to redemption or payment at par at the option of the holder thereof, not later than such times as will be necessary to provide moneys when needed to provide payments from such Fund.

Moneys in the Improvement Account, other than a Series Improvement Interest Subaccount therein, not required for immediate disbursement for the purposes for which such Account is created may, to the fullest extent practicable and reasonable, be invested and reinvested to the extent allowed by law, solely in, and obligations deposited in such Account will be, Investment Securities which mature or are subject to redemption or payment at par at the option of the holder thereof not later than such times as shall be necessary to provide moneys when needed to provide payments from such Account.

Moneys in a Series Improvement Interest Subaccount in the Improvement Account not required for immediate disbursement for the purposes for which such Account is created may, to the fullest extent practicable and reasonable, be invested and reinvested to the extent allowed by law, solely in, and obligations deposited in such Account shall be, noncallable Investment Securities which are Government Obligations, FNMA's or FHLMC's (as such terms are defined in the definition of Investment Securities) that mature or are subject to redemption at the option of the holder thereof not later than such times as shall be necessary to provide moneys when needed to provide payments from such Account.

To the extent permitted in the Bond Resolution, all income received from the investment or reinvestment of moneys in the Funds and Accounts established under the Bond Resolution will be deposited in the respective Fund or Account from which such investments are made and applied as a credit against the next succeeding deposit or credit required to be made pursuant to the Bond Resolution; provided however, that except as to the Subordinate Obligation Account and the Reimbursable Obligation Account, all or a portion of the income

received from the investment or reinvestment of moneys in any such Fund and Account may be deposited in the Sewer Fund or the Improvement Account, including a Series Improvement Interest Subaccount therein; and *provided, further, however*, that all income received from the investment or reinvestment of moneys in any Series Improvement Interest Subaccount must be deposited in the Debt Service Account.

Neither the Director of Budget and Fiscal Services nor any Paying Agent shall be liable for any depreciation in value of any investments made by the City and County.

Valuation of Investment Securities

In computing the amount in any Fund or Account, Investment Securities therein are to be valued at cost or accreted value, whichever is lower, exclusive of accrued interest. The City and County is to determine the value of Investment Securities held in any Fund or Account as frequently as it deems necessary, but not less often than annually.

Depositaries

All moneys held by the City and County or any Depositary under the provisions of the Bond Resolution are to be held in trust and applied only in accordance with the provisions of the Bond Resolution, and each of the Funds and Accounts established by the Bond Resolution shall be a trust fund.

Each Depositary must be a bank or trust company organized under the laws of any state of the United States or a national banking association having capital stock, surplus and undivided earnings of \$5,000,000 or more and willing and able to accept such office on reasonable and customary terms and authorized by law to act in accordance with the provisions of the Bond Resolution.

Concerning Depositaries and Paying Agents

Qualifications and Appointment. The Director of Budget and Fiscal Services may appoint one or more Paying Agents and Depositaries as of the date of issuance and delivery of the first Series of Bonds and may at any time or from time to time appoint one or more other Paying Agents or other Depositaries having the qualifications of a depositary, as described in the Bond Resolution; provided however, the Director of Budget and Fiscal Services may be designated Paying Agent and/or Depositary. Each Paying Agent, other than the Director of Budget and Fiscal Services, and each Depositary, other than the Director of Budget and Fiscal Services, shall signify its acceptance of the duties and obligations imposed upon it by the Bond Resolution by executing and delivering to the City and County and the Director of Budget and Fiscal Services a written acceptance thereof.

Paying Agents and Depositaries May Buy, Hold, Sell or Deal in Bonds and Other Indebtedness of the City and County. Each Paying Agent and each Depositary and its respective directors, officers, employees or agents, may in good faith buy, sell, own, hold and deal in any of the Bonds issued under the provisions of the Bond Resolution and may join any action which any Holder of a Bond may be entitled to take, with like effect as if such Paying Agent or Depositary were not a Paying Agent or any Depositary, as the case may be, under the Bond Resolution. Any Paying Agent or any Depositary may in good faith hold any other form of indebtedness of the City and County; own, accept or negotiate any drafts, bills of exchange, acceptances or obligations of the City and County, and make disbursements for the City and County and enter into any commercial or business arrangement therewith.

Reimbursement of Paying Agents and Depositaries for Fees, Expenses and Charges. Each Paying Agent and each Depositary shall be entitled to reasonable fees and to reimbursement by the City and County for all expenses and charges reasonably incurred by it in the performance of its duties. No Paying Agent nor Depositary shall have a lien for such fees and reimbursement on the moneys pledged to secure the Bonds under the Bond Resolution at any time held by it, prior to the lien or claim of the Holders of the Bonds on all such moneys.

Covenants

The City and County has covenanted and agreed in the Bond Resolution with the Holders of all Bonds issued pursuant to the Bond Resolution as follows:

Maintenance of the Properties of the Wastewater System; Keeping the System in Good Repair.

The Department will: (i) maintain, preserve and keep, or cause to be maintained, preserved and kept, the properties of the Wastewater System and all additions and betterments thereto and extensions thereof, and every part and parcel thereof in good repair, working order and condition, (ii) from time to time make, or cause to be made, all necessary and proper repairs, renewals, replacements, additions, extensions and betterments thereto, so that at all times the business carried on in connection therewith shall properly and advantageously be conducted, and (iii) comply, or cause to be complied with the terms and conditions of any permit or license for the Wastewater System or any part thereof issued by any federal or state governmental agency or body and with any federal or state law or regulation applicable to the construction, operation, maintenance and repair of the Wastewater System or requiring a license, permit or approval therefor.

Rates and Charges. The City and County will at all times fix, charge and collect such rates and other charges as shall be required in order that in each Fiscal Year the Net Revenues will be not less than the Net Revenue Requirement for such Fiscal Year ("*Rate Covenant*"). The failure in any Fiscal Year to comply with the foregoing *Rate Covenant* does not constitute an Event of Default if the City and County complies with requirements described in the next paragraph.

Prior to the end of each Fiscal Year the Director of Environmental Services or the Director of Budget and Fiscal Services if requested by the Director of Environmental Services must complete a review of the financial condition of the Department for the purpose of estimating whether the Net Revenues for such Fiscal Year and for the next succeeding Fiscal Year will be sufficient to comply with the *Rate Covenant* and must by a written certificate make a determination with respect to such compliance. Such review may take into consideration the completion of any uncompleted Improvement and the issuance of future Series of Bonds if necessary to finance the completion of such Improvements. Such written certificate must set forth a reasonably detailed statement of the actual and estimated Revenues, Operation and Maintenance Expenses, Aggregate Debt Service, and any other estimates or assumptions upon which such determination was based, and must be filed with the City Clerk on or before July 1 in each year. If it is determined in such written certificate that the Revenues may not be so sufficient, the Director of Environmental Services or the Director of Budget and Fiscal Services if requested by the Director of Environmental Services must forthwith make a study for the purpose of determining a schedule of fees, rates and charges which, in the opinion of the Director of Environmental Services or the Director of Budget and Fiscal Services, will cause sufficient Revenues to be collected in the following Fiscal Year to comply with the *Rate Covenant* and will cause additional Revenues to be collected in such following and later Fiscal Years sufficient to eliminate the amount of any deficiency at the earliest practicable time, or the Director of Environmental Services or the Director of Budget and Fiscal Services may elect to cause the Consulting Engineer to make such a study and render such opinion. The City Council shall as promptly as practicable but no later than the 120 days following such determination by the Director of Environmental Services or the Director of Budget and Fiscal Services, or receipt of the Consulting Engineer's recommendation, adopt and place in effect a schedule of fees, rates and charges as so determined or recommended pursuant to the Bond Resolution.

Sale, Lease or Other Disposition of Properties of the Wastewater System. The properties of the Wastewater System may not be sold, mortgaged, leased or otherwise disposed of except as described below.

The properties of the Wastewater System may be sold, leased, or otherwise disposed of in their entirety if simultaneously with such sale, lease or other disposition thereof provision is made for the payment of all Bonds then Outstanding and such Bonds are no longer deemed Outstanding within the meaning of the Bond Resolution.

Any portion of the properties of the Wastewater System may be sold, leased, or otherwise disposed of on such terms and conditions as may be determined by the City and County if the value of such portion of the properties as of the date of such sale, lease or disposition does not exceed five percent (5%) of the net book assets of the Wastewater System as of the last day of the preceding Fiscal Year as shown in the most recent audited financial statements of the Department. Any part of the properties of the Wastewater System having a value as of the date of the sale, lease or disposition which exceeds five percent (5%) of the net book assets of the Wastewater System as of the last day of the preceding Fiscal Year as shown in the most recent audited financial statements of the Department may be sold, leased, or otherwise disposed of if the Consulting Engineer certifies to the City and County in writing that the terms and conditions of the proposed sale, lease or other disposition of any such properties are fair and reasonable, and that the estimated Revenues to be derived from the remaining properties of the Wastewater

System, after taking into consideration the use by the Department of the proceeds of such proposed sale, lease or other disposition of such properties, will be sufficient to enable the City and County to comply with all covenants and conditions of the Bond Resolution. Proceeds of any sale, lease or other disposition of any portion of the properties of the Wastewater System pursuant to this paragraph are to be paid into the Debt Service Account and applied to the purchase or redemption of Bonds or into the Sewer Fund and applied by the City and County for the purpose of constructing extensions, betterments or improvements to the Wastewater System as the City and County may determine.

Surplus lands, crops, timber, buildings and any other portion of the works, plant and facilities of the Wastewater System and real and personal property comprising a part thereof, which, in the opinion of the Director of Environmental Services, have become unserviceable, inadequate, obsolete, worn out, or unfit to be used in the operation of the Wastewater System, or no longer necessary, material to, or useful in such operation may be sold, leased, or otherwise disposed of. Proceeds of any such sale, lease or other disposition of any portion of the properties of the Wastewater System pursuant to this paragraph are to be paid into the Sewer Fund.

If permitted by the laws of the State, the City and County may transfer without consideration the properties comprising the Wastewater System to a public corporation or political subdivision of the State, provided such corporation or subdivision assumes all of the City and County's or the Department's obligations and duties under the Bond Resolution.

In the event that any part of the properties of the Wastewater System is transferred from the City and County through the operation of law (including condemnation), any moneys received by the City and County as a result of such transfer are to be paid: (i) if such proceeds are not in excess of \$250,000, into the Sewer Fund; or (ii) if such proceeds are in excess of \$250,000: (a) into the Debt Service Account and applied to the purchase or redemption of Bonds; or (b) into the Renewal and Replacement Account and applied by the City and County for the purpose of constructing replacements, extensions, betterments or improvements to the Wastewater System, as the City and County shall determine.

Insurance. Except as provided for in the next paragraph, the Department must keep, or cause to be kept, the works, plants and facilities comprising the properties of the Wastewater System and the operations thereof insured to the extent available at reasonable at reasonable cost with responsible insurers, with policies payable to the City and County or the Department, against risks of direct physical loss, damage to or destruction of the above-ground structures, and the equipment and contents therein, of the Wastewater System arising from accidents, casualties or negligence, and other causes customarily insured against, at least to the extent that similar insurance is usually carried by utilities operating like properties, including liability insurance and workman's compensation insurance; provided, however, that any time while any contractor engaged in constructing any part of the Wastewater System is fully responsible for such insurance, the Department is not required to keep such part of the Wastewater System insured. All policies of insurance shall be for the benefit of the Holders of the Bonds and the City and County or the Department as their respective interests may appear.

In the event of any loss or damage to the properties of the Wastewater System covered by insurance, the Department will: (i) with respect to each such loss, promptly repair and reconstruct to the extent necessary to the proper conduct of the operations of the Wastewater System the lost or damaged portion thereof and shall apply the proceeds of any insurance policy or policies covering such loss or damage for that purpose to the extent required therefor, unless, in case of loss or damage involving \$250,000 or more, the Department determines that such repair and reconstruction will not be undertaken; and (ii) if the Department does not use the entire proceeds of such insurance to repair or reconstruct such lost or damaged property, the proceeds of such insurance policy or policies or any portion thereof not used for such repair or reconstruction, as the case may be, are to be paid into the Sewer Fund. If the Department does not obtain insurance from responsible insurers as provided for in the Bond Resolution, the City and County or the Department must self-insure; provided, however, that if the Department fails to carry insurance against any of the risks normally insured against by operators of facilities similar to the Wastewater System, it must secure the concurrence of an independent insurance consultant. In making its decision whether to concur in such self-insurance, the independent insurance consultant must (i) make an estimate of the added financial risks, if any, assumed by the Department as a result of the self-insurance; (ii) consider the availability of commercial insurance, the terms upon which such insurance is available and the costs of such available insurance, and the effect of such terms and costs upon the Department's costs and charges for its services;

and (iii) determine whether the added financial risk, if any, being assumed by the Department is prudent in light of the savings to be realized from such self-insurance or in light of the general availability of insurance.

The Department may include insurance required by the Bond Resolution as part of a blanket insurance policy of the City and County.

Consulting Engineer. The City Council, the Director of Environmental Services or the Director of Budget and Fiscal Services may from time to time retain and appoint, as Consulting Engineer, an independent consulting engineer or engineering firm or corporation having special skill, knowledge and experience in analyzing the operations of wastewater systems, preparing rate analyses, forecasting the loads and revenues of wastewater systems, preparing feasibility reports respecting the financing of wastewater systems and advising on the operation of wastewater facilities, who shall be available to advise the Department, upon request, and to make such investigations and determinations as may be necessary from time to time under the provisions of the Bond Resolution.

Books of Account; Annual Audit. The Department will maintain and keep proper books of account relating to the Wastewater System and in accordance with generally accepted accounting principles. Within 180 days after the end of each Fiscal Year commencing with the Fiscal Year ending June 30, 2000, the Department will cause such books of account to be audited by an independent certified public accountant. The audit required by the Bond Resolution may be part of a comprehensive audit of the City and County, *provided* that the Wastewater System in such audit is treated as an "enterprise fund" and the revenues and expenses of the Wastewater System are stated in a manner which permits identification by category of the sources and uses of the Revenues. A copy of each audit report prepared in conformity with generally accepted accounting principles must be filed promptly with the City and County and sent to any Bondholder filing with the Director of Environmental Services a written request for a copy thereof. and to any Rating Agency which has rated any Bonds.

To Pay Bonds Punctually. The City and County will duly and punctually pay, or cause to be paid, but only from the Revenues, income and other funds specified in the Bond Resolution, the principal and Redemption Price (if any) of, and interest on, each and every Bond on the dates and at the places, and in the manner provided in the Bonds according to the true intent and meaning thereof, and the City and County will faithfully do and perform and at all times fully observe and keep any and all of its covenants, undertakings, stipulations and provisions contained in the Bonds and in the Bond Resolution.

Payment of Taxes and Other Claims. The Department must from time to time duly pay and discharge, or cause to be paid and discharged, all taxes, assessments and other governmental charges, or payments in lieu thereof, lawfully imposed upon the properties of the Wastewater System (or any part thereof) or upon the Net Revenues or income received therefrom when the same become due, as well as all lawful claims for labor, material and supplies, which, if not paid, might become a lien or charge upon said properties or any part thereof, or upon the Revenues derived from the ownership or operation of the Wastewater System, or which might in any way impair the security of the Bonds, except any such assessments, charges or claims which the Department in good faith contests as to validity.

Extension of Payment of Bonds. The City and County will not, directly or indirectly, extend or assent to the extension of the maturity of any of the Bonds or the time of payment of any claims for interest by the purchase of such Bonds, coupons, if any, or claims for interest or by any other arrangement and in case the maturity of any of the Bonds or the time for payment of any such claims for interest is extended, such Bonds or claims for interest will not be entitled, in case of any default under the Bond Resolution, to the benefit of the Bond Resolution or to any payment out of any assets of the City and County or the funds (except funds held in trust for the payment of particular Bonds or claims for interest pursuant to the Bond Resolution) held by the Paying Agents, except subject to the prior payment of the principal of all Bonds issued and Outstanding the maturity of which has not been extended and of such portion of the accrued interest on the Bonds as shall not be represented by such extended claims for interest.

Sound Improvements and Extensions. The Department will not expend any of the income, revenues, receipts, profits and other moneys derived by it from the ownership or operation of the Wastewater System for any renewals, replacements, additions, betterments and improvements to, or extensions of, the Wastewater System which, in the sole opinion of the Director of Environmental Services, will not properly and

advantageously contribute to the conduct of the business of the Wastewater System in an efficient and economical manner unless required to do so to permit the continued operation of the Wastewater System or to preserve or protect the Wastewater System.

Annual Budget. Not later than May 31 before the beginning of any Fiscal Year the City and County or the Department will prepare a preliminary budget of Operation and Maintenance Expenses of the Wastewater System and reserves therefor for the ensuing Fiscal Year. Each such budget and each Annual Budget will include, in addition to provisions for all anticipated Operation and Maintenance Expenses, provision for the payments required to be made to the Renewal and Replacement Account, provided that such payments shall in the aggregate at least equal the amount described below. Such preliminary budget and any Annual Budget may set forth such additional material as the City and County or the Department may determine.

Except as described below, on or before the 15th day of each such Fiscal Year, the City and County must finally adopt the Annual Budget for such year. The City and County may at any time adopt an amended Annual Budget for the remainder of the then current Fiscal Year. Copies of the Annual Budget and of any amended Annual Budget are to be made available for inspection by the Bondholders and are to be sent to each Rating Agency.

If for any reason the City and County does not adopt the Annual Budget before the 15th day of any Fiscal Year, the budget for the preceding Fiscal Year is deemed to be in effect for such Fiscal Year until the Annual Budget for such Fiscal Year is adopted. For any purpose of computation under the provisions of the Bond Resolution, the budget for the preceding year is deemed to have been adopted for any Fiscal Year until the Annual Budget for such year is adopted.

Every preliminary budget, Annual Budget and amended Annual Budget must: (i) set forth in reasonable detail amounts required for repair, replacement or reconstruction of the Wastewater System and major or extraordinary repairs, renewals or replacements of the Wastewater System, if any, for the period to be covered by such budget; (ii) specify the amounts to be deposited in the Renewal and Replacement Account, the Subordinate Obligation Account, the Reimbursable Obligation Account and the Wastewater General Account, and the amounts to be maintained in the Sewer Fund for working capital and operating reserves and in the Rate Stabilization Account for rate stabilization purposes, if any, for such purposes for such period, (iii) specify the amounts to be transferred from the Wastewater General Account to the Rate Stabilization Account and to other Funds and Accounts; and (iv) project the amounts required for such purposes for the next five Fiscal Years in such format as the Director of Environmental Services may determine. A copy of each such report is to be filed and maintained in the records of the City and County.

Events of Default

Each of the following events constitutes an Event of Default under the Bond Resolution:

- (a) if payment of the principal and Redemption Price, if any, of any Bond, is not punctually made when due and payable, whether at the stated maturity thereof or upon proceedings for the redemption thereof (whether by voluntary redemption or a mandatory sinking fund redemption or otherwise);
- (b) if payment of the interest on any Bond is not punctually made when due;
- (c) if the provisions of any Series Resolution with respect to mandatory Sinking Fund Installment payments or the redemption of Term Bonds therefrom, as the case may be, are not punctually complied with at the time and in the manner specified in such Series Resolution;
- (d) if the City and County or the Department fails to duly and punctually perform or observe any other of the covenants, agreements or conditions contained in the Bond Resolution or in the Bonds, on the part of the City and County or the Department to be performed, and such failure continues for 90 days after written notice thereof from the Holders of not less than 20% of the Bonds then Outstanding; provided that, if such failure is such that it cannot be corrected within

such 90-day period, it will not constitute an Event of Default if corrective action is instituted within such period and diligently pursued until the failure is corrected; and

(e) if the City and County: (i) admits in writing its inability to pay its debts generally as they become due; or (ii) files a petition in bankruptcy or seeking a composition of indebtedness under the provisions of any Federal or state bankruptcy or similar law; or (iii) makes an assignment for the benefit of its creditors; or (iv) files a petition or any answer seeking relief under the provisions of any Federal or state bankruptcy or similar law; or (v) consents to the appointment of a receiver of the whole or any substantial part of the Wastewater System; or (vi) consents to the assumption by any court of competent jurisdiction under the provisions of any other law for the relief or aid of debtors of custody or control of the City and County or the Department, or of the whole or any substantial part of the Wastewater System.

Notice to Bondholders of Event of Default

Immediately after the occurrence of an Event of Default or within 30 days after any Paying Agent knows of any other Event of Default, the Paying Agent or Paying Agents shall give notice of all such Events of Default to the Bondholders, all other Paying Agents and Support Facility Providers, and each Rating Agency, in the manner as provided for in the Bond Resolution, unless such Events of Default shall have been cured before the giving of such notice.

Acceleration of Bonds

If an Event of Default shall happen and shall not have been remedied, then and in every such case the Holders of not less than 25% in principal amount of the Bonds then Outstanding, by notice in writing to the City and County and the Director of Budget and Fiscal Services, may declare the principal of all the Bonds then Outstanding, and the interest accrued thereon, to be due and payable immediately, and upon any such declaration the same shall become and be immediately due and payable. The right of the Holders of not less than 25% in principal amount of the Bonds then Outstanding to make any such declaration, however, shall be subject to the condition that if, at any time after such declaration, but before the Bonds shall have matured by their terms, all overdue installments of interest upon the Bonds, together with interest on such overdue installments of interest to the extent permitted by law and all other sums then payable by the City and County under the Bond Resolution (except the principal of, and interest accrued since the next preceding interest date on, the Bonds due and payable solely by virtue of such declaration) shall either be paid by or for the account of the City and County or provision satisfactory to the Holders of a majority in principal amount of the Bonds then Outstanding shall be made for such payment, and all defaults under the Bonds or under the Bond Resolution (other than the payment of principal and interest due and payable solely by reason of such declaration) shall be cured or be secured to the satisfaction of the Holders of a majority in principal amount of the Bonds then Outstanding or provision deemed by such Holders of the Bonds to be adequate shall be made therefor, then and in every such case the Holders of at least a majority in principal amount of the Bonds then Outstanding, by written notice to the City and County, may rescind such declaration and annul such default in its entirety, but no such rescission shall extend to or affect any subsequent default or impair or exhaust any resulting right or power.

The bond insurers for all Outstanding Bonds and for the Series 2007 Bonds have certain consent rights in connection with any default which may constrain the rights of the Holders described above.

Inspection of Books and Records; the City and County to Account as Trustee for Express Trust

The City and County covenants that if an Event of Default shall have happened and shall not have been remedied, the books of record and account of the Department relating to the Wastewater System and all other records relating thereto shall at all times be subject to the inspection and use of the Holders of at least 25% in principal amount of the Bonds then Outstanding and of their respective agents and attorneys or of any committee therefor.

The City and County covenants that if an Event of Default shall have happened and shall not have been remedied, the City and County will continue to account, as a trustee of an express trust, for all Revenues and other moneys, securities and funds pledged under the Bond Resolution.

Application of Revenues in an Event of Default

During the continuance of an Event of Default as described in items (a) through (c) of the Events of Default described above or of any other Event of Default resulting in an Event of Default described in items (a) through (c) of the Events of Default described above, the Revenues received by a receiver appointed pursuant to the Bond Resolution as the result of the taking of possession of the business and properties of the Wastewater System, are to be applied by the receiver: first, to the payment of all necessary and proper Operation and Maintenance Expenses of the Wastewater System and all other proper disbursements or liabilities made or incurred by the receiver; second, to the then due and overdue payments into the Debt Service Account, including the making up of deficiencies therein; and last, for any lawful purpose in connection with the Wastewater System.

In the event that at any time the funds held by the receiver are insufficient for the payment of the principal and Redemption Price (if any) of, and interest then due on, the Bonds, such funds (other than funds held for the payment or redemption of particular Bonds or coupons) and all Revenues of the Department and other of its moneys received or collected for the benefit or for the account of Holders of the Bonds by the receiver are to be applied as follows:

- (1) Unless the principal of all of the Bonds shall have become due and payable,

First, to the payment of all necessary and proper Operation and Maintenance Expenses of the Wastewater System and all other proper disbursements or liabilities made or incurred by the receiver;

Second, to the payment to the persons entitled thereto of all installments of interest then due (including any interest on overdue principal) in the order of the maturity of such installments, earliest maturities first, and if the amounts available shall not be sufficient to pay in full any installment or installments of interest maturing on the same date, then to the payment thereof ratably, according to the amount due thereon, to the persons entitled thereto, without any discrimination or preference; and

Third, to the payment to the persons entitled thereto of the principal and premium, if any, due and unpaid upon the Bonds at the time of such payment without preference or priority of any Bond over any other Bonds, ratably, according to the amounts due respectively for principal and redemption premium, without any discrimination or preference.

- (2) If the principal of all of the Bonds shall have become due and payable,

First, to the payment of all necessary and proper Operation and Maintenance Expenses of the Wastewater System and all other proper disbursements or liabilities made or incurred by the receiver;

Second, to the payment of the principal and interest then due and unpaid upon the Bonds without preference or priority of principal over interest or of interest over principal, or of any installment of interest over any other installment of interest, or of any Bond over any other Bonds, ratably, according to the amounts due respectively for principal and interest, to the persons entitled thereto without any discrimination or preference.

Whenever moneys are to be applied as described in the foregoing paragraphs, such moneys shall be applied by the receiver at such times, and from time to time, as it in its sole discretion shall determine, having due regard to the amount of such moneys available for application and the likelihood of additional moneys becoming available for such application in the future.

If and whenever all overdue installments of interest on all Bonds, together with the reasonable and proper charges, expenses, and liabilities of the Holders of the Bonds, their respective agents and attorneys, and all other sums payable by the City and County under the Bond Resolution including the principal and Redemption Price (if any) of all Bonds which shall then be payable, shall either be paid in full by or for the account of the City and County or provision satisfactory to the receiver shall be made for such payment, and all defaults under the Bond

Resolution or the Bonds shall be made good and secured to the satisfaction of the receiver or provision deemed by the receiver to be adequate therefor, the receiver shall pay over to the Department all of its moneys, securities, funds and Revenues then remaining unexpended in the hands of the Bondholders' Committee (except moneys, securities, funds or Revenues deposited or pledged, or required by the terms of the Bond Resolution to be deposited or pledged, with the Director of Budget and Fiscal Services), control of the business and possession of the property of the Department shall be restored to the Department, and thereupon the City and County shall be restored to its former positions and rights under the Bond Resolution, and all Revenues shall thereafter be applied as provided for in the Bond Resolution. No such payment over to the Department by the receiver or resumption of this application of Revenues as provided in the Bond Resolution, shall extend to or affect any subsequent default under the Bond Resolution or impair any right consequent thereon.

Suits at Law or Equity and Mandamus and Appointment of a Receiver

If an Event of Default shall happen and shall not have been remedied, then and in every such case, but subject to the provisions, limitations and conditions as set forth in the Bond Resolution, the Holder of any Bond at the time Outstanding shall be entitled, for the equal benefit and protection of all Holders of the Bonds similarly situated to proceed, protect and enforce the rights vested in such Holder by the Bond Resolution by such appropriate judicial proceeding as such Holder shall deem most effectual to protect and enforce any such right, either by suit in equity or by action of law, whether for the specific performance of any covenant or agreement contained in the Bond Resolution, or in aid of the exercise of any power granted in the Bond Resolution, or to enforce any other legal or equitable right vested in the Holders of Bonds by the Bond Resolution or by law; provided, however, that no judicial proceeding shall be brought seeking the appointment of a receiver to take possession of the Wastewater System or to manage, receive and apply the Revenues unless the Holders of not less than a majority in principal amount of the Bonds then Outstanding or a Bondholders' Committee representing the Holders of not less than a majority in principal amount of the Bonds then Outstanding shall have joined in or consented to such proceeding.

Bondholders' Committee

If an Event of Default shall happen and shall not have been remedied, the Holders of not less than 25% in principal amount of the Bonds then Outstanding may call a meeting of the Holders of Bonds for the purpose of electing a Bondholders' Committee. Such meeting shall be called and proceedings thereat shall be conducted as provided for other meetings of Bondholders pursuant to the Bond Resolution. At such meeting the Holders of not less than a majority of the principal amount of the Bonds then Outstanding must be present in person or by proxy in order to constitute a quorum for the transaction of business, less than a quorum, however, having power to adjourn from time to time without any notice other than that required by the Bond Resolution. A quorum being present at such meeting, the Bondholders present in person or by proxy may, by the votes cast by the Holders of a majority in principal amount of the Bonds so present in person or by proxy, elect one or more persons who may or may not be Bondholders to the Bondholders' Committee which shall act as trustee for all Bondholders. The Bondholders present in person or by proxy at said meeting, or at any adjourned meeting thereof, shall prescribe the manner in which the successors of the persons elected to the Bondholders' Committee at such Bondholders' meeting shall be elected or appointed, and may prescribe rules and regulations governing the exercise by the Bondholders' Committee of the power conferred upon it, and may provide for the termination of the existence of the Bondholders' Committee.

Bondholders May Direct Proceedings

The Holders of not less than a majority in principal amount of the Bonds at the time outstanding are authorized and empowered: (1) to direct the time, method, and place of conducting any proceeding for any remedy available to the holders of the Bonds; or (2) on behalf of the holders of the Bonds then outstanding, to consent to the waiver of any Event of Default or its consequences. No waiver or rescission shall extend to any subsequent or other default, or impair any right consequent thereon.

The bond insurers for all Outstanding Bonds and for the Series 2007 Bonds have certain consent rights in connection with any default which may constrain the rights of the Holders described above.

Abandonment of Proceedings; Adverse Determination

No delay or omission of any Holder of Bonds to exercise any right or power arising upon the occurrence of a default under the Bond Resolution, including an Event of Default, shall impair any right or power or shall be construed to be a waiver of any such default or to be an acquiescence therein. Every power and remedy given by the Bond Resolution to the Holders of Bonds may be exercised from time to time and as often as may be deemed expedient by such Holders.

In case the Holders of the Bonds or a Bondholders' Committee formed pursuant to the Bond Resolution shall have proceeded to enforce any right under the Bond Resolution and such proceedings shall have been discontinued or abandoned for any reason, or shall have been determined adversely to the Holders of the Bonds or such Bondholders' Committee, then and in every such case the City and County, and the Holders of the Bonds shall be restored to their former positions and rights under the Bond Resolution, and all rights, remedies and powers of the Holders of the Bonds shall continue as if no such proceedings had been taken.

Amending and Supplementing of Resolution

Amending and Supplementing of Resolution Without Consent of Holders of Bonds. The City and County, from time to time and at any time and without the consent or concurrence of any Holder of any Bond, may adopt (i) a Series Resolution for the purpose of providing for the issuance of Bonds pursuant to the provisions as set forth in the Bond Resolution; (ii) to make any changes, modifications, amendments or deletions to the Bond Resolution which may be required to permit the Bond Resolution to be qualified under the Trust Indenture Act of 1939 of the United States of America; or (iii) if the rights of the Holders of the Bonds then Outstanding shall not be materially adversely affected thereby, a Supplemental Resolution (herein defined and referred to as a "Supplemental Resolution") for any one or more of the following purposes:

1. to make any changes or corrections in the Bond Resolution as to which the City and County shall have been advised by counsel that the same are verbal corrections or changes or are required for the purpose of curing or correcting any ambiguity or defective or inconsistent provision or omission or mistake or manifest error contained in the Bond Resolution, or to insert in the Bond Resolution such provisions clarifying matters or questions arising under the Bond Resolution as are necessary or desirable;
2. to add additional covenants and agreements of the City and County for the purpose of further securing the payment of the Bonds;
3. to surrender any right, power or privilege reserved to or conferred upon the City and County by the terms of the Bond Resolution;
4. to confirm as further assurance any lien, pledge or charge, or the subjection to any lien, pledge, or charge, created or to be created by the provisions of the Bond Resolution;
5. to grant to or to confer upon the Holders of the Bonds any additional rights, remedies, powers, authority or security that lawfully may be granted to or conferred upon them; and
6. to modify in any other respect any of the provisions of the Bond Resolution.

Except for Series Resolutions authorizing the issuance of Bonds pursuant to the Bond Resolution, the City and County shall not adopt any Supplemental Resolution authorized by the foregoing provisions of the Bond Resolution unless in the Opinion of Counsel the adoption of such Supplemental Resolution is permitted by the Bond Resolution and the provisions of such Supplemental Resolution do not materially adversely affect the rights of the Holders of the Bonds then Outstanding.

Amendment of Resolution With Consent of Holders of the Bonds. With the consent of the Holders of not less than a majority of the Bonds then Outstanding and with written consent of each Support Facility Provider, the City and County from time to time and at any time may adopt a resolution amendatory of or supplemental to the Bond Resolution for the purpose of adding any provisions to, or changing in any manner or eliminating any of the provisions of, the Bond Resolution, or modifying or amending the rights and obligations of

the City and County thereunder, or modifying or amending in any manner the rights of the Holders of the Bonds then Outstanding. For purposes of the preceding sentence, the written consent of each Support Facility Provider providing a Support Facility for any Bonds will constitute consent of the Holders of such Bonds. Without the specific consent of the Holder of each such Bond which would be affected thereby, no Supplemental Resolution amending or supplementing the provisions of the Bond Resolution shall: (1) change the fixed maturity date for the payment of the principal of any Bond or the dates for the payment of interest thereon or the terms of the redemption thereof, or reduce the principal amount of any Bond or the rate of interest thereon or the Redemption Price (or the redemption premium) payable upon the redemption or prepayment thereof; or (2) reduce the aforesaid percentage of Bonds, the Holders of which are required to consent to any Supplemental Resolution amending or supplementing the provisions of the Bond Resolution; or (3) give to any Bond or Bonds any preference over any other Bond or Bonds secured by the Bond Resolution; or (4) authorize the creation of any pledge of the Revenues and other moneys pledged under the Bond Resolution, prior, superior or equal to the pledge of and lien and charge thereon created in the Bond Resolution for the payment of the Bonds except to the extent provided in the Bond Resolution; or (5) deprive any Holder of the Bonds in any material respect of the security afforded by the Bond Resolution; provided further, however, that without the specific consents of the Holders of not less than a majority in principal amount of the Term Bonds then Outstanding and affected thereby, no Supplemental Resolution amending or supplementing the provisions of the Bond Resolution shall (a) change the amount of any Sinking Fund Installments for the retirement of Term Bonds or the due dates of such installments or the terms for the purchase or redemption thereof from such installments, or (b) reduce the aforesaid percentage of Term Bonds, the Holders of which are required to consent to any such Supplemental Resolution. (Nothing in this paragraph contained, however, shall be construed as making necessary the approval of the Holders of the Bonds of the adoption of any Supplemental Resolution). A modification or amendment with respect to the Sewer Fund or the Debt Service Account or Common Reserve Account or any Separate Series Reserve Account therein shall not be deemed a change in the terms of payments; provided that no such modification or amendment shall, except upon the consent of the Holders of all Bonds then outstanding affected thereby, reduce the amount or amounts required to be credited to the Debt Service Account or Common Reserve Account or any Separate Series Reserve Account.

The bond insurers for all Outstanding Bonds and for the Series 2007 Bonds have certain consent rights in connection with any amendment which may constrain the rights of the Holders described above.

The proof of the giving of any consent of any Holder required and of the holding of Bonds for the purpose of giving consents shall be made in accordance with the Bond Resolution. Proof of consent may include any evidence that the City and County and the Director of Budget and Fiscal Services, in their separate discretion, determine to be sufficient. It shall not be necessary that the consents of the Holders of the Bonds approve the particular form of wording of the proposed amendment or supplement or of the Supplemental Resolution affecting such amendment or supplement, but it shall be sufficient if such consents approve the substance of the proposed amendment or supplement. A record, consisting of the papers required by the Bond Resolution, shall be proof of the matters therein stated until the contrary is proved. No action or proceeding to set aside or invalidate such Supplemental Resolution or any of the proceedings for its adoption shall be instituted or maintained unless such action or proceeding is commenced within 60 days after the publication and mailing of the notice required by the Bond Resolution.

The City and County shall furnish a notice of each amendment or supplement and a copy of the Supplemental Resolution effecting such amendment or supplement to each rating agency at least 15 days prior to the effective day of the Supplemental Resolution.

Discharge of Liens and Pledges; Bonds No Longer Outstanding and Deemed to be Paid

Except as otherwise provided in the Bond Resolution with regard to Option Bonds, the obligations of the City and County under the Bond Resolution and the liens, pledges, charges, trusts, covenants and agreements of the City and County made or provided for in the Bond Resolution, shall be fully discharged and satisfied as to any Bond and such Bond shall no longer be deemed to be Outstanding under the Bond Resolution:

- (i) when such Bond shall have been canceled, or shall have been surrendered for cancellation or is subject to cancellation, or shall have been purchased by or behalf of the City and County from moneys held under the Bond Resolution; or

(ii) as to any Bond not canceled or surrendered for cancellation or subject to cancellation or so purchased, when payment of the principal and redemption price (if any) of such Bond, plus interest on such principal to the due date thereof (whether such due date be by reason of maturity or upon redemption or prepayment, or otherwise) either (a) shall have been made or caused to be made in accordance with the terms thereof, or (b) shall have been provided for by irrevocably depositing with the Paying Agent for such Bond, in trust, and irrevocably appropriating and setting aside exclusively for such payment, either (1) moneys sufficient to make such payment or (2) noncallable Refunded Municipal Obligations or noncallable Investment Securities described in item (i) of the definition of Investment Securities as set forth in the Bond Resolution, maturing as to principal and interest in such amount and at such times as will insure, together with any cash deposit, the availability of sufficient moneys to make such payment, whichever the City and County deems to be in its best interest and as verified by an independent nationally recognized firm of certified public accountants in a report delivered to the City and County and the Director of Budget and Fiscal Services, and all necessary and proper fees, compensation and expenses of the Director of Budget and Fiscal Services and the Paying Agents pertaining to the Bond with respect to which such deposit is made shall have been paid or the payment thereof provided for to the satisfaction of the Director of Budget and Fiscal Services and said Paying Agents.

At such time as a Bond shall be deemed to be no longer Outstanding under the Bond Resolution, as aforesaid, such Bond, except for the purposes of any payment from such moneys, Refunded Municipal Obligations or Investment Securities, shall no longer be secured by or entitled to the benefits of the Bond Resolution.

Notwithstanding the foregoing, in the case of a Bond which is to be redeemed or otherwise prepaid prior to its stated maturity, no deposit under clause (b) of subparagraph (ii) of the second preceding paragraph above shall constitute such payment, discharge and satisfaction as aforesaid until such Bond shall have been irrevocably designated for redemption or prepayment and proper notice of such redemption or prepayment shall have been previously given in accordance with the Bond Resolution or provision shall have been irrevocably made for the giving of such notice.

Any such moneys so deposited with the Paying Agents for the Bonds as provided in the Bond Resolution may at the direction of the City and County also be invested and reinvested in Investment Securities, maturing in the amounts and times as set forth in the Bond Resolution. All income from all Refunded Municipal Obligations and Investment Securities in the hands of the Paying Agents which is not required for the payment of the Bonds and interest and premium thereon with respect to which such moneys shall have been so deposited, shall be paid to the City and County for deposit in the Sewer Fund free and clear of any trust, lien, security interest, pledge or assignment securing any Bonds or otherwise existing under the Bond Resolution.

All moneys, Refunded Municipal Obligations or Investment Securities set aside and held in trust pursuant to the provisions of the Bond Resolution for the payment of Bonds (including interest and premium thereof, if any) shall be applied to and used solely for the payment of the particular Bond (including interest and premium thereof, if any) with respect to which such moneys and Investment Securities have been so set aside in trust.

If moneys, Refunded Municipal Obligations or Investment Securities have been deposited or set aside with a Paying Agent pursuant to the Bond Resolution for the payment of a specific Bond and such Bond is deemed to have been paid and to be no longer Outstanding under the Bond Resolution as provided in the defeasance provisions of the Bond Resolution, but such Bond has not in fact been actually paid in full, no amendment to the defeasance provisions of the Bond Resolution may be made without the consent of the Holder of each Bond affected thereby.

The City and County may at any time surrender to a Paying Agent for a Series of Bonds for cancellation by it any Bonds of such Series previously executed and delivered, which the City and County may have acquired in any manner whatever, and such Bonds upon such surrender for cancellation shall be deemed to be paid and no longer Outstanding under the Bond Resolution.

THE SECOND BOND RESOLUTION

Pledge Made in the Bond Resolution

The Bonds are payable solely from and secured by the funds pledged therefor under the Bond Resolution. The City and County has pledged as security for the payment of the principal of, Redemption Price, if any, and interest on the Bonds in accordance with their terms and the provisions of the Bond Resolution, subject only to the provisions of the Bond Resolution permitting the application thereof for the purposes and on the terms and conditions set forth in the Bond Resolution: (i) the proceeds of sale of the Bonds pending application thereof in accordance with the provisions of the Bond Resolution or of a Series Resolution or a Series Certificate; (ii) the Net Revenues; and (iii) the Subordinate Obligation Account but excluding all Subaccounts therein unless specifically pledged by the Bond Resolution, a Series Resolution or a Series Certificate, (iv) the Debt Service Subaccount, (v) with respect to any Series of Bonds entitled to the benefit of a Separate Series Reserve Subaccount, such Separate Series Reserve Subaccount, and (vi) with respect to any Series of Bonds entitled to the benefit of the Common Reserve Subaccount, the Common Reserve Subaccount, including the investments, if any, in such Account and Subaccounts; and the Bondholders shall have to the extent permitted by law, a lien on, and a security interest in, such proceeds, Net Revenues, and Subaccounts for such purpose and subject to such provisions of the Resolution. The Rebate Subaccount and the Third Lien Subaccount are not pledged to the payment of the principal and redemption price (if any) of, and interest on, the Bonds.

So long as First Resolution Obligations are outstanding for purposes of the First Bond Resolution, the pledge of the Net Revenues made by the Bond Resolution is subordinate and junior in all respects to the pledge of the Net Revenues made by the First Bond Resolution. The pledge of the Net Revenues made by the Bond Resolution is also prior and superior to the pledge which may be made by any resolution, indenture or other instrument authorizing and securing Third Lien Obligations and Reimbursable Obligations. On and after such date, if any, that First Resolution Obligations are no longer outstanding for purposes of the First Bond Resolution, the pledge of the Net Revenues made by the Bond Resolution will be prior and superior in all respects to any pledge of the Net Revenues made by any resolution, indenture or other instruments, including the pledge which may be made by any resolution, indenture or other instrument authorizing and securing Third Lien Obligations and Reimbursable Obligations. There will be additionally pledged on and after such date as security for the payment of the principal and Redemption Price (if any) of, and interest on, the Bonds in accordance with their terms and the provisions of the Bond Resolution, subject only to the provisions of the Bond Resolution permitting the application thereof for the purposes and on the terms and conditions set forth in the Bond Resolution, (i) the Sewer Fund but excluding all Accounts and Subaccounts therein unless specifically pledged by the Bond Resolution, a Series Resolution or a Series Certificate, (ii) the Renewal and Replacement Account, (iii) the Rate Stabilization Account and (iv) the Wastewater General Account.

The Bond Resolution provides that each of the obligations, duties, limitations and restraints imposed upon the City and County by the Bond Resolution is deemed to be a covenant between the City and County and every Holder of the Bonds, and the Bond Resolution and every provision and covenant set forth in the Bond Resolution is deemed to be and constitute a continuing contract and agreement between the City and County and the Holders from time to time of the Bonds issued under the Bond Resolution, to secure the full and final payment of the principal and redemption price of and interest on all Bonds which may from time to time be issued, executed, and delivered under the Bond Resolution. The covenants and agreements set forth in the Bond Resolution to be performed by the City and County are for the equal and proportionate benefit, security and protection of all Holders of the Bonds without preference, priority or distinction as to payment or security or otherwise of any of the Bonds over any of the others for any reason or cause whatsoever except as expressly provided in the Bond Resolution, in a Series Resolution, a Series Certificate or a Supplemental Resolution, or in the Bonds.

Additional Bonds

Basic Test. One or more Series of Bonds (exclusive of Refunding Bonds) may be issued at any time and from time to time for any lawful use or purpose relating to the Wastewater System, including, without limitation, payment of all or a portion of the Costs of Improvements, but only upon compliance as to each such Series with the provisions set forth in the Bond Resolution, including, among other things, delivery to the Director of Budget and Fiscal Services of the following documents or moneys or securities:

1. A written certificate of the City and County stating the amount required to be in the Common Reserve Subaccount after issuance of the Bonds then to be issued, and that after deposit in the Common Reserve Subaccount of the amount, if any, to be deposited therein in connection with the issuance of such Bonds, the amounts on deposit in the Common Reserve Subaccount will not be less than the Common Reserve Subaccount Requirement.

2. A written certificate of the City and County stating the amount required to be in the Separate Series Reserve Subaccount created, if any, to provide additional security for the Bonds of such Series after issuance of the Bonds then to be issued, and that after deposit in such Separate Series Reserve Subaccount of the amount to be deposited therein in connection with the issuance of such Bonds, the amounts on deposit in such Separate Series Reserve Subaccount will not be less than the Separate Series Reserve Subaccount Requirement for such Separate Series Reserve Subaccount.

3. Either (I) a Written Certificate of the City and County based: (i) on audited figures or (ii) to the extent audited figures are not available, on figures taken by an independent certified public accountant from the Department's books and records, showing that the Net Revenues for: (a) the most recent Fiscal Year, or (b) any consecutive twelve (12) months' period out of twenty four (24) months immediately preceding the month in which such Bonds are issued were not less than the sum of: (1) 1.10 times the maximum Aggregate Debt Service (as defined in the First Bond Resolution) on all First Resolution Obligations issued and outstanding under and pursuant to the terms of the First Bond Resolution and the Aggregate Debt Service on all Bonds then Outstanding and on the proposed Series of Bonds in any Fiscal Year and (2) 1.00 times the aggregate Support Facility Reimbursement Obligations outstanding under the First Bond Resolution and this Resolution as of the date of the Written Certificate of the City and County; or (II) a Written Certificate of the City and County or Certificate of the Consulting Engineer that the Net Revenues to be derived in each of the five (5) Fiscal Years following the earlier of: (i) the end of the period during which interest is capitalized or, if no interest is to be capitalized, the Fiscal Year in which the proposed Series of Bonds are issued, and (ii) the date on which substantially all Improvements to be financed with the proceeds of the proposed Series of Bonds are expected to commence operations, or, if the proceeds of such Series of Bonds will not be used to fund the Costs of Improvements, the Fiscal Year in which the proposed Series of Bonds are issued, are estimated to be not less than the sum of: (1) 1.10 times the maximum of the sum of the Aggregate Debt Service (as defined in the First Bond Resolution) on all First Resolution Obligations issued and outstanding under and pursuant to the First Bond Resolution and the Aggregate Debt Service on all Bonds then Outstanding and on the proposed Series of Bonds in any such Fiscal Year, and (2) 1.00 times the aggregate Support Facility Reimbursement Obligations outstanding under the First Bond Resolution and this Resolution as of the date of such Written Certificate of the City and County or certificate of the Consulting Engineer, as the case may.

Certain Adjustments. The Bond Resolution permits and requires certain adjustments to be made in determining whether the Basic Test described above for the issuance of Bonds other than Refunding Bonds is met.

1. In determining Debt Service on Variable Rate Bonds then Outstanding and Variable Rate Bonds then proposed to be issued for purposes of the Additional Bonds Requirement, the interest rate shall be calculated as: (i) if any Variable Rate Bonds are then Outstanding and have been Outstanding for at least twenty-four (24) months, the average interest rate borne by such Variable Rate Bonds over the preceding twelve (12) month period, or (ii) if no such Variable Rate Bonds are then Outstanding, (a) for the proposed Variable Rate Bonds that are Tax-exempt Bonds, the average interest rate of the Revenue Bond Index over the preceding twelve (12) month period at the time of calculation, and (b) for the proposed Variable Rate Bonds that are not Tax-exempt Bonds, the average interest rate of LIBOR over the preceding twelve (12) month period at the time of calculation.

2. Bond Anticipation Notes then Outstanding are to be treated as Bonds. In determining Debt Service on such Bond Anticipation Notes, such Bond Anticipation Notes are assumed to mature in 30 years and bear interest equal to the Revenue Bond Index at the time of calculation.

3. Third Lien Obligations and Reimbursable Obligations originally issued with a maturity of five (5) years or less are assumed to mature in 30 years and bear interest equal to the Revenue Bond Index at the time of calculation.

4. In preparing the certificate required by the Basic Test described above, the Authorized Officer or the Consulting Engineer, as applicable, may make adjustments to the Net Revenues as follows:

a. If any changes have been made in the schedule of rates and charges imposed by the City and County for commodities and services furnished by the Wastewater System which are in effect at the time of adoption of the Series Resolution authorizing the issuance of the Bonds then being issued and were placed into effect subsequent to the start of the Fiscal Year or the 12-month period selected pursuant to item 3 of the *Basic Test* described above, the Authorized Officer, may, if such changes result in increases in such rates and charges, and must, if such changes result in reductions in such rates and charges, adjust the Net Revenues for such period to reflect any change in such Net Revenues which would have occurred if the schedule of rates and charges in effect at the time of the adoption of the Series Resolution providing for the issuance of such Bonds had been in effect during the portion of such period in which such schedule was not in effect.

b. If customers are being served by the Department at the time of adoption of the Series Resolution authorizing the issuance of the Bonds then being issued and who were added to the Wastewater System subsequent to the start of the Fiscal Year or the 12-month period selected pursuant to item 3 of the *Basic Test* described above, the Authorized Officer may adjust the Net Revenues for such period to reflect any change in such Net Revenues which would have occurred if the additional customers had been served during the portion of the period in which such customers were not served.

c. If residential, commercial, industrial or institutional customers which are in existence are not then served by the Wastewater System at the time of adoption of the Series Resolution authorizing the issuance of the Bonds then being issued, but are then expected to be served during the five (5) Fiscal Years covered by such certificate, the Authorized Officer or the Consulting Engineer, as applicable, must estimate the effect which such new customers would have had on the Net Revenues for the period selected pursuant to item 3 of the *Basic Test* described above, if such new customers had been served during the entire period and may adjust the Net Revenues for such period to give effect to such new customers. Any such estimate will be based upon the operating experience and records of the Department with respect to the Wastewater System and upon any available financial and quarterly statistics deemed pertinent by the Authorized Officer or the Consulting Engineer, as applicable.

d. If any long-term, guaranteed contracts with customers of the Wastewater System are in effect at the time of adoption of the Series Resolution authorizing the issuance of the Bonds then being issued and which were entered into subsequent to the start of the Fiscal Year or 12-month period selected pursuant to item 3 of the *Basic Test* described above, the Authorized Officer may adjust the Net Revenues for such period to reflect any change in such Net Revenues which would have occurred if such contracts had been in effect for the entire period.

e. In rendering the certificate required pursuant to item 3 of the Basic Test, the Authorized Officer or the Consulting Engineer, as applicable, must deem the Operation and Maintenance Expenses for the Wastewater System for the first Fiscal Year of the five (5) year period to be equal to such Operation and Maintenance Expenses for the Fiscal Year immediately preceding the Fiscal Year in which the proposed Series of Bonds is to be delivered, and thereafter the Authorized Officer or the Consulting Engineer, as applicable, must adjust, if deemed necessary, for any increased Operation and Maintenance Expenses which are estimated to occur during any subsequent Fiscal Year during the five (5) year period and are, in the judgment of the Authorized Officer or the Consulting Engineer, as applicable, essential to maintaining and operating the Wastewater System.

f. In rendering any certificate pursuant to the Bond Resolution, the Authorized Officer or the Consulting Engineer, as applicable, may rely upon estimates from other sources which the Authorized Officer or the Consulting Engineer, considers reliable, making such

adjustments and provisions for contingencies based on similar projects and other considerations as deemed appropriate by such Authorized Officer or the Consulting Engineer.

Refunding Bonds

The City and County may issue a Series of refunding Bonds at any time for the purpose of refunding (including by purchase) all or any portion of Bonds Outstanding, including amounts to pay principal, redemption premium and interest to the date of maturity or redemption (or purchase) and the expense of issuing the refunding Bonds and of effecting such refunding if the conditions set forth in the Bond Resolution are complied with, including all of the conditions of the *Basic Test* described above, except that condition 3 need not be complied with if the maximum annual Debt Service in any Fiscal Year on the refunding Bonds proposed to be issued does not exceed maximum annual Debt Service in any Fiscal Year on the refunded Bonds by more than 10%. All adjustments described above in *Certain Adjustments* are applicable to the issuance of refunding Bonds.

The City and County may also issue a Series of refunding Bonds at any time for the purpose of refunding (including by purchase) all or any portion of outstanding Third Lien Obligations or Reimbursable Obligations, including amounts to pay principal, redemption premium and interest to the date of maturity or redemption (or purchase) and the expense of issuing the refunding Bonds and of effecting such refunding if the conditions set forth in the Bond Resolution are complied with, including all of the conditions of the *Basic Test* described above.

Bond Anticipation Notes

Bond Anticipation Notes may be issued by the City and County at such time as the City and County shall have by a Series Resolution duly adopted authorized the issuance of Bonds under the Bond Resolution. No Bond Anticipation Notes may be issued unless there has been filed with the Director of Budget and Fiscal Services on or prior to the date of issuance of such Bond Anticipation Notes, a written certificate of the City and County to the effect that, based on market conditions expected to be prevailing at the time of issuance of the Series of Bonds in anticipation of which such Bond Anticipation Notes are issued and on other reasonable assumptions set forth in such written certificate, the provisions of the Bond Resolution for the issuance of additional Bonds other than refunding Bonds are expected to be complied with at the time of issuance of such Series of Bonds. The maximum maturity of any Bond Anticipation Notes, including the renewals thereof, must not exceed five (5) years from the date of the original Bond Anticipation Note. The principal of Bond Anticipation Notes may be paid from the proceeds of such Bond Anticipation Notes (or any renewal thereof) or from the proceeds of the Bonds in anticipation of which such Bond Anticipation Notes were issued. The interest on such Bond Anticipation Notes may be secured by a lien on and pledge of, and be paid from, the Net Revenues on a parity with the lien on and pledge of the Net Revenues created in the Bond Resolution for the payment and security of the Bonds. The principal of Bond Anticipation Notes will be secured by a lien on and pledge of the proceeds of the Bonds in anticipation of which such Bond Anticipation Notes were issued and any such pledge will have priority over any other pledge of such proceeds created by the Bond Resolution. Bond Anticipation Notes issued under the Bond Resolution are to be treated as Bonds for all purposes of the Bond Resolution, and are to be payable from the Debt Service Subaccount, except to the extent that the principal of any such Bond Anticipation Note is paid from the proceeds of other Bond Anticipation Note or from the proceeds of Bonds.

Third Lien Obligations

The City and County may issue Third Lien Obligations which are payable out of, and which may be secured by a pledge of, such amounts in the Third Lien Obligation Subaccount as may from time to time be available for the purpose of payment. The City and County may, by resolution, provide for various priorities in the liens and pledges securing Third Lien Obligations, and nothing in the Bond Resolution shall be construed so as to require that the payment of, or pledges securing, Third Lien Obligations be on a parity *inter se*.

The City and County may also issue Third Lien Obligations: (i) to refund any Third Lien Obligations issued as provided in the Bond Resolution; (ii) to refund Outstanding Bonds; or (iii) to refund any Reimbursable Obligations. Such Third Lien Obligations issued for refunding purposes may be payable out of, and may be secured by a pledge of, such amounts in the Third Lien Obligation Subaccount or Wastewater General Account as may from time to time be available therefor.

The Bond Resolution requires that any resolution, indenture or other instrument securing or evidencing each issue of Third Lien Obligations must contain provisions (which shall be binding on all holders of such Third Lien Obligations) not more favorable to the holders of such Third Lien Obligations than as described below:

(1) In the event of any insolvency or bankruptcy proceedings, and any receivership, liquidation, reorganization or other similar proceedings in connection therewith, relative to the City and County or the Department, or to the property of the City and County or property operated by the Department, and in the event of any proceedings for voluntary liquidation, dissolution or other winding up of the City and County or the Department, the Holders of all Bonds then Outstanding will be entitled to receive payment in full of all principal and interest on all such Bonds before the holders of the Third Lien Obligations are entitled to receive any payment from the trust estate under the Bond Resolution consisting of the Net Revenues and funds held under the Bond Resolution (the "Trust Estate" for these purposes) on account of principal (and premium, if any) or interest on the Third Lien Obligations.

(2) In the event that any issue of Third Lien Obligations is declared due and payable before its expressed maturity because of the occurrence of an event of default (under circumstances when the provisions of (1) above are not applicable), the Holders of all Bonds Outstanding at the time such Third Lien Obligations so become due and payable because of such occurrence of such an event of default will be entitled to receive payment in full of all principal and interest on all such Bonds before the holders of the Third Lien Obligations are entitled to receive any accelerated payment from the Trust Estate of principal (and premium, if any) or interest on the Third Lien Obligations.

(3) If any Event of Default with respect to the Bonds has occurred and be continuing (under circumstances when the provisions of (1) above are not applicable), the Holders of all Bonds then Outstanding will be entitled to receive payment in full of all principal and interest on all such Bonds before the holders of the Third Lien Obligations are entitled to receive any accelerated payment from the Trust Estate of principal (and premium, if any) or interest on the Third Lien Obligations.

(4) No Bondholder shall be prejudiced in his right to enforce subordination of the Third Lien Obligations by any act or failure to act on the part of the City and County.

(5) The Third Lien Obligations may provide that the provisions of (1), (2), (3) and (4) above are solely for the purpose of defining the relative rights of the Bondholders on the one hand, and the holders of Third Lien Obligations on the other hand, and nothing therein shall impair, as between the City and County and the owners of the Third Lien Obligations, the obligation of the City and County to pay to the owners thereof the principal thereof and premium, if any, and interest thereon in accordance with its terms, nor shall anything therein prevent the holders of the Third Lien Obligations from exercising all remedies otherwise permitted by applicable law or thereunder upon default thereunder, subject to the rights under (1), (2), (3) and (4) above of the Holders of Bonds to receive cash, property or securities otherwise payable or deliverable to the holders of the Third Lien Obligations; and the Third Lien Obligations may provide that, insofar as a trustee or paying agent for such Third Lien Obligations is concerned, the foregoing provisions shall not prevent the application by such trustee or paying agent of any moneys deposited with such trustee or paying agent for the purpose of the payment of or on account of the principal (and premium, if any) and interest on such Third Lien Obligations if such trustee or paying agent did not have knowledge at the time of such application that such payment was prohibited by the foregoing provisions.

Any issue of Third Lien Obligations may have such rank or priority with respect to any other issue of Third Lien Obligations as may be provided in the resolution, indenture or other instrument securing such issue of Third Lien Obligations and may contain such other provisions as are not in conflict with the provisions of the Bond Resolution.

Reimbursable Obligations

The obligation for the payment of Reimbursable Obligations shall be: (i) after and inferior to the lien and security interest for the payment of Bonds and those Third Lien Obligations which are payable from the Third Lien Obligation Subaccount; and (ii) prior and superior to the lien and security interest for the payment of

those Third Lien Obligations which are payable from the Wastewater General Account. Reimbursable Obligations are payable from the Reimbursable Obligation Account.

Support Facilities and Interest Rate Exchange Agreements

In connection with the issuance of any Series of Bonds and to the extent permitted by law, the City and County may obtain or cause to be obtained from one or more Support Facility Providers one or more Support Facilities providing for payment of all or a portion of the purchase price or principal, premium, if any, or interest due or to become due on specified Bonds of such Series, or providing for the purchase of such Bonds or a portion of such Bonds by such Support Facility Providers, or providing, in whole or in part, for the funding of the Common Reserve Subaccount or a Separate Series Reserve Subaccount pursuant to the Bond Resolution.

In connection with the issuance of any Series of Bonds or to better manage its assets and liabilities and, to the extent permitted by law, the City and County may enter into with one or more Counterparties one or more Interest Rate Exchange Agreements; *provided* that no such Interest Rate Exchange Agreement shall adversely affect the exclusion from gross income for purposes of federal income taxation of interest on the Tax-exempt Bonds of any Series.

The City and County may enter into agreements with one or more Support Facility Providers or Counterparties to provide for, among other things: (i) the payment of fees and expenses to such Support Facility Providers or Counterparties; (ii) the terms and conditions of such Support Facility or Interest Rate Exchange Agreement and the Series of Bonds affected thereby; and (iii) the security, if any, to be provided to such Support Facility Providers or Counterparties. The City and County may secure the Support Facility or Interest Rate Exchange Agreement by an agreement providing for the purchase of the Bonds secured thereby with such adjustments to the rate of interest, method of determining interest, maturity, or redemption provisions as specified in the Series Resolution or the Series Certificate. Debt Service with respect to any Bonds so secured is to be calculated for purposes of the definition of Common Reserve Subaccount Requirement by using the Assumed Long-Term Fixed Rate.

The City and County may also agree in any agreement with the Support Facility Provider of such Support Facility or the Counterparty under an Interest Rate Exchange Agreement to reimburse directly such Support Facility Provider or Counterparty for any amounts paid under the terms of such Support Facility or Interest Rate Exchange Agreement, together with interest thereon (the "Support Facility Reimbursement Obligation"); *provided, however,* that no Support Facility Reimbursement Obligation is to be created, for purposes of the Bond Resolution, until amounts are paid under such Support Facility or Interest Rate Exchange Agreement, as the case may be. Any such Support Facility Reimbursement Obligation may be secured by a lien on and pledge of the Net Revenues on a parity with the lien on and pledge of the Net Revenues created by the Bond Resolution with respect to the Bonds (a "Parity Support Facility Reimbursement Obligation"). Any such Parity Support Facility Reimbursement Obligation will be deemed to be a part of the Series of Bonds to which the Support Facility which gave rise to such Parity Support Facility Reimbursement Obligation relates. Payment of Support Facility Reimbursement Obligation may be made out of the Sewer Fund as provided in the Bond Resolution.

Any Support Facility deposited in the Common Reserve Subaccount or the long-term debt of the Support Facility Provider of such Support Facility must, in each case, be in the highest rating category each Rating Agency, and if rated by A.M. Best & Company, also be rated in the highest rating category by A.M. Best & Company or its successors. In the event any Support Facility deposited in the Common Reserve Subaccount or the long-term debt of the issuer of any Support Facility deposited in the Common Reserve Subaccount falls below the highest rating category of each Rating Agency, and A.M. Best & Company, if rated by A.M. Best & Company, the City and County must, within 120 days, obtain a new Support Facility which is rated in the highest category of each Rating Agency or for which the long-term debt of the issuer of such new Support Facility is rated in the highest rating category of each Rating Agency and A.M. Best & Company, if rated by A.M. Best & Company; *provided,* however, that if the new Support Facility is not obtained within 120 days, the City and County must deposit in the Common Reserve Subaccount Net Revenues in the amount provided in the Bond Resolution. If a disbursement is made pursuant to a Support Facility deposited in the Common Reserve Subaccount, the City and County must: first, reinstate the full amount of such Support Facility; and second, if necessary deposit Net Revenues in the Common Reserve Subaccount in the amount of the disbursement made under such Support Facility, in either case such that the amount in the Common Reserve Subaccount is equal to the Common Reserve Subaccount Requirement within a

period of time not longer than would be required to restore the Common Reserve Subaccount by application of moneys in the Sewer Fund. The City and County may at any time deposit cash or Investment Securities as replacement for one or more Support Facilities.

The City and County must obtain and maintain in effect one or more Support Facilities for Option Bonds. The City and County must obtain a replacement Support Facility to replace any Support Facility for Option Bonds that is expiring, not renewed or terminated. Procedures for such replacement, maintenance and notices to Bondholders, rating agencies or other persons are to be provided in the Series Resolution authorizing the Series of Bonds or the Series Certificate relating to such Bonds.

Funds and Accounts

The City and County has established by ordinances the Sewer Fund and the Sewer Revenue Bond Improvement Fund (the "Improvement Fund"). The First Bond Resolution establishes the following accounts in the Sewer Fund:

Wastewater System Facility Charge Account,
Debt Service Account,
Common Reserve Account,
Rebate Account,
Rate Stabilization Account,
Subordinate Obligation Account,
Reimbursable Obligation Account,
Renewal and Replacement Account, and
Wastewater General Account.

None of the accounts in the Sewer Fund except the Subordinate Obligation Account is pledged as security for the payment of debt service on the Bonds. Such pledge of the Subordinate Obligation Account is subject to the terms and provisions of and the exceptions provided in the First Bond Resolution and the Bond Resolution.

The Bond Resolution establishes the following subaccounts in the Subordinate Obligation Account:

Debt Service Subaccount,
Common Reserve Subaccount,
Rebate Subaccount, and
Third Lien Obligation Subaccount.

The Bond Resolution permits the establishment of one or more Separate Series Reserve Subaccounts in the Subordinate Obligation Account. The Bond Resolution also permits the establishment of one or more Series Improvement Subaccounts in the Improvement Second Account and requires the establishment of one or more Series Improvement Interest Subaccounts in the Improvement Second Account if interest on the Bonds of a Series is to be paid from the proceeds of such Bonds during the period of construction of any Improvements and for six months thereafter.

Sewer Fund

Revenues and Wastewater System Facility Charges are to be collected by the Department and are to be deposited into the Sewer Fund. Under the First Bond Resolution, the Department will, in each month, (i) after making the transfer, if any, to the Wastewater System Facility Charge Account of all moneys received as Wastewater System Facility Charges, (ii) after paying or setting aside a sufficient amount to pay the Operating and Maintenance Expenses, (iii) after making the transfer to the Rebate Account under the First Bond Resolution, (iv) after transferring a sufficient amount to the Debt Service Account under the First Bond Resolution to equal debt service on First Resolution Obligations, (v) after transferring a sufficient amount to the Common Reserve Account and each Separate Series Reserve Account under the First Bond Resolution to eliminate any deficiency therein, and (vi) after maintaining in the Sewer Fund a reasonable and necessary amount for working capital and operating

reserves, transfer from the Sewer Fund to the Subordinate Obligation Account a sufficient amount required by the Bond Resolution to pay all accrued and unpaid amounts and amounts to accrue and become payable during the succeeding calendar month which are payable from the Subordinate Obligation Account.

Subordinate Obligation Account

Moneys transferred from the Sewer Fund to the Subordinate Obligation Account are to be applied on the 5th day prior to the end of each month, unless otherwise provided below, in the following order of priority:

(1) To the Rebate Subaccount such amount as is necessary to pay the rebate amount due the United States Treasury Department under Section 148 of the Code or to set aside as a reserve for such payment;

(2) To the Debt Service Subaccount, if and to the extent required so that the balance in the Debt Service Subaccount shall equal the Accrued Debt Service for all Bonds Outstanding and the interest accrued on all Bond Anticipation Notes outstanding on said date;

(3) (a) To the Common Reserve Subaccount, if and to the extent required either (i) an amount such that the balance in the Common Reserve Subaccount will equal the Common Reserve Subaccount Requirement on said date, or (ii) an amount such that if the same amount were deposited in each month the amount of any deficiency in the Common Reserve Subaccount would be eliminated at the end of the sixth (6th) month following the first credit; and (b) to each Separate Series Reserve Subaccount, if and to the extent required either (i) an amount such that the balance in each Separate Series Reserve Subaccount shall equal the Separate Series Reserve Subaccount Requirement for each Separate Series Reserve Subaccount on said date, or (ii) an amount such that if the same amount were deposited in each month the amount of any deficiency in each Separate Series Common Reserve Subaccount shall be eliminated at the end of the sixth (6th) month following the first credit; provided, however, that such transfers shall be pro rata, based on the proportion of the Common Reserve Subaccount Requirement and each Separate Series Reserve Subaccount Requirement to the sum of the Common Reserve Subaccount Requirement and all Separate Series Reserve Subaccount Requirements;

(4) To the Third Lien Obligation Subaccount, the amount, if any, equal to all Third Lien Obligation Requirements theretofore accrued and unpaid and not met from any other source and to accrue and become payable during the succeeding calendar month and not met from any other source.

The Bond Resolution permits the City and County to pay directly out of the Third Lien Obligation Subaccount reimbursements to providers of Support Facilities whose Support Facilities have been drawn upon in the same priority and order as payments from the Third Lien Obligation Subaccount to the Debt Service Subaccount, the Common Reserve Subaccount, each Separate Series Reserve Subaccount or other Funds, Accounts and Subaccounts as provided in a Series Resolution as if such payments were part of such Funds, Accounts and Subaccounts.

Purposes of the Various Subaccounts in Subordinate Obligation Account

Debt Service Subaccount. The principal and Redemption Price of and interest on the Bonds and interest on Bond Anticipation Notes are to be paid out of the Debt Service Subaccount in the Sewer Fund to each Paying Agent on or before the respective due dates.

Amounts accumulated in the Debt Service Subaccount by reason of the payment of any Sinking Fund Installment may be applied by the City and County, on or prior to the 60th day preceding the due date of such Sinking Fund Installment, to: (i) the purchase of Bonds of the maturity for which such Sinking Fund Installment was established, or (ii) the redemption of such Bonds at the applicable Redemption Price, if then redeemable by their terms. All such purchases of Bonds are to: (i) be made at prices not exceeding the applicable Redemption Price of such Bonds plus accrued interest; (ii) be made as arranged by the City and County in such manner and from such sellers or brokers at such prices as the City and County may determine; and (iii) be made to insure that delivery of the Bonds so purchased will not occur later than the 60th day next preceding the redemption date to which the Sinking Fund Installment is to be applied. The applicable Redemption Price of any Bonds (or principal amount of maturing Bonds) so purchased or redeemed is deemed to constitute part of the Debt Service Subaccount until such

Sinking Fund Installment date, for the purpose of calculating the amount of such Subaccount. As soon as practicable after the 60th day preceding the due date of any such Sinking Fund Installment, the City and County must proceed to call for redemption on such due date Bonds of the maturity for which such Sinking Fund Installment was established (except in the case of Bonds maturing on a Sinking Fund Installment date) in such amount as is necessary to complete the retirement of the unsatisfied balance of such Sinking Fund Installment after making allowance for any Bonds purchased or redeemed pursuant to the Bond Resolution which the City and County has applied as a credit against such Sinking Fund Installment as provided in the Bond Resolution.

The amount, if any, credited to the Debt Service Subaccount from a Series Improvement Interest Subaccount is to be applied to the payment of interest on the Bonds as the same becomes due and payable as provided in the Bond Resolution.

Upon any purchase or redemption pursuant to the Bond Resolution of Bonds of any Series and maturity for which Sinking Fund Installments shall have been established: (i) if the principal amount of the Bonds so purchased is less than or equal to the next succeeding Sinking Fund Installment for such Series there is to be credited to the next such Sinking Fund Installment an amount equal to the principal amount of the Bonds of such Series so purchased; and (ii) if the principal amount of the Bonds so purchased is greater than the next succeeding Sinking Fund Installment, there is to be credited toward each such Sinking Fund Installment thereafter to become due an amount bearing the same ratio to such Sinking Fund Installment as the total principal amount of such Bonds so purchased or redeemed bears to the total principal amount of all such Sinking Fund Installments to be so credited or, at the option of the City and County, an amount equal to the next succeeding Sinking Fund Installment. The portion of any such Sinking Fund Installment remaining after the deduction of any such amounts credited toward the same (or the original amount of any such Sinking Fund Installment if no such amounts have been credited toward the same) will constitute the unsatisfied balance of such Sinking Fund Installment for the purpose of calculation of Sinking Fund Installments due on a future date.

All of the Refundable Credits received by the City and County shall be deposited immediately upon receipt in the Debt Service Subaccount, and such Refundable Credits are irrevocably pledged to the punctual payment of the interest on the respective Series of Interest Subsidy Bonds to which such Refundable Credits relate, and the Refundable Credits shall not be used for any other purpose while any of the Interest Subsidy Bonds remain Outstanding. All the Refundable Credits as received by the City and County shall immediately be subject to the lien of this pledge without any physical delivery thereof or further act, and the lien of the pledge shall be valid as against, and prior to the lien of, all parties having claims of any kind in tort, contract or otherwise against the City and County irrespective of whether such parties have notice thereof. Notwithstanding the foregoing deposit and pledge, the Refundable Credits are not considered Revenues or included in the calculation or Revenues under the Bond Resolution. Additionally, in calculating the amount that the City and County pays out of the Debt Service Subaccount to the applicable Paying Agents as described in the first paragraph under the heading “- Purposes of the Various Subaccounts in the Subordinate Obligation Account” above, the City and County or the Paying Agent, as applicable, shall take into account Refundable Credits only if they have been deposited in the Debt Service Subaccount on or prior to the Business Days preceding the applicable interest payment date and have not previously expended to pay Debt Service on the Bonds issued as Interest Subsidy Bonds or otherwise transferred out of the Debt Service Subaccount.

Common Reserve Subaccount. If on the day preceding any principal or interest payment date, the amount in the Debt Service Subaccount is less than the Accrued Debt Service for all Bonds then Outstanding which are entitled to the benefit of the Common Reserve Subaccount, the City and County will pay out of the Common Reserve Subaccount to each Paying Agent for such Bonds the amount necessary to satisfy the deficiency for payment to the holders of such Bonds. Amounts so applied are to be derived first, from cash or Investments Securities on credit to the Common Reserve Subaccount and second, from draws or demands on Support Facilities held as a part of the Common Reserve Subaccount, such draws or demands to be made *pro rata* among all such Support Facilities based on the respective available amounts under such Support Facilities and upon the terms and conditions set forth in such Support Facilities.

Whenever the amounts on deposit in the Common Reserve Subaccount exceed the Common Reserve Subaccount Requirement, the City and County will withdraw the amount of such excess and deposit such excess to the credit of the Debt Service Subaccount or the Sewer Fund, as the City and County may determine.

Whenever the amount (exclusive of Support Facilities) in the Common Reserve Subaccount, together with the amount in the Debt Service Subaccount attributable to Bonds entitled to the benefit of the Common Reserve Subaccount, is sufficient to pay in full the principal or Redemption Price, if any, of and interest on all such Outstanding Bonds in accordance with their terms, the funds on credit to the Common Reserve Subaccount are to be transferred to the Debt Service Subaccount and applied to make such payment. Prior to such transfer, all Investment Securities held in the Common Reserve Subaccount will be liquidated by the City and County to the extent necessary to provide for timely payment of the principal or Redemption Price, if any, of and interest on such Bonds.

When a Series of Bonds entitled to the benefit of the Common Reserve Subaccount is refunded in whole or in part or is otherwise deemed paid within the meaning of the Bond Resolution, moneys may be withdrawn from the Common Reserve Subaccount to pay or provide for the payment of such Bonds or refunded Bonds, as the case may be; provided that immediately after such withdrawal or transfer there must be on credit to the Common Reserve Subaccount for those Bonds of the Series of Bonds not refunded an amount equal to the Common Reserve Subaccount Requirement for the Bonds entitled to the benefit of the Common Reserve Subaccount then Outstanding after taking into account such refunding or payment.

The City and County may determine in the Series Resolution authorizing a Series of Bonds or a Series Certificate related to a Series of Bonds that such Series of Bonds will not be entitled to the benefit of the Common Reserve Subaccount, in which case no amount will be required from the proceeds of such Series of Bonds for credit to the Common Reserve Subaccount and no amount will be payable from the Common Reserve Subaccount to pay amounts due or payable with respect to such Series of Bonds.

The Common Reserve Subaccount Requirement is to be calculated or recalculated: (i) at the time of issuance of a Series of Bonds (or Bond Anticipation Notes); (ii) at the time a Series of Bonds is retired in its entirety; (iii) at such other time as in the Opinion of Counsel is required to maintain the exclusion of interest on the Tax-exempt Bonds from gross income for federal income taxation purposes.

Separate Series Reserve Subaccounts. If on the day preceding any principal or interest payment date, the amount in the Debt Service Subaccount is less than Accrued Debt Service for the Bonds of a Series then Outstanding which are entitled to the benefit of a Separate Series Reserve Subaccount, the City and County will pay out of such Separate Series Reserve Subaccount to the Paying Agent for such Bonds the amount necessary to satisfy the deficiency for payment to the holders of such Bonds. Amounts so applied shall be derived first, from cash or Investments Securities on credit to such Separate Series Reserve Subaccount and second, from draws or demands on Support Facilities held as a part thereof, such draws or demands to be made *pro rata* among all such Support Facilities based on the respective available amounts under such Support Facilities and upon the terms and conditions set forth in such Support Facilities.

Whenever the amounts on deposit in any Separate Series Reserve Subaccount exceed the applicable Separate Series Reserve Subaccount Requirement, the City and County will withdraw the amount of such excess and deposit such excess to the credit of the Debt Service Subaccount or the Sewer Fund, as the City and County may determine.

Whenever the amount (exclusive of Support Facilities) in any Separate Series Reserve Subaccount, together with the amount in the Debt Service Subaccount attributable to Bonds entitled to the benefit of such Separate Series Reserve Subaccount, is sufficient to pay in full the principal or Redemption Price, if any, of and interest on all such Outstanding Bonds in accordance with their terms, the funds on credit to such Separate Series Reserve Subaccount are to be transferred to the Debt Service Subaccount and applied to make such payment. Prior to such transfer, all Investment Securities held in such Separate Series Reserve Subaccount will be liquidated by the City and County to the extent necessary to provide for timely payment of the principal or Redemption Price of and interest on such Bonds.

When a Series of Bonds entitled to the benefit of the Separate Series Reserve Subaccount is refunded in whole or in part or are otherwise deemed paid within the meaning of the Bond Resolution, moneys may be withdrawn from such Separate Series Reserve Subaccount to pay or provide for the payment of such Bonds or refunded Bonds, as the case may be; *provided* that immediately after such withdrawal or transfer there must be on credit to such Separate Series Reserve Subaccount an amount equal to the Separate Series Reserve Subaccount

Requirement for the Bonds then Outstanding which are entitled to the benefit of such Separate Series Reserve Subaccount after taking into account such refunding or payment.

Each Separate Series Reserve Subaccount Requirement is to be calculated or recalculated: (i) at the time of issuance of a Series of Bonds (or Bond Anticipation Notes); (ii) at the time a Series of Bonds is retired in its entirety; (iii) at such other time as in the Opinion of Counsel is required to maintain the exclusion of interest on the Tax-exempt Bonds from gross income for federal income taxation purposes.

Certain provisions of the Bond Resolution relating to Separate Series Reserve Subaccount may be modified in whole or in part with respect to any Series of Bonds entitled to the benefits of a Separate Series Reserve Subaccount.

Rebate Subaccount. If and to the extent required by the Code, an Authorized Officer must periodically, at such times as may be required to comply with the Code, determine the amount required to be rebated or otherwise paid to the Department of the Treasury of the United States of America with respect to each Series of Tax-exempt Bonds and thereafter (i) transfer from any of the Funds, Accounts and Subaccounts pledged or held under the Bond Resolution, other than the Debt Service Subaccount, the Third Lien Obligation Subaccount and the Reimbursable Obligation Account and credit to the Rebate Subaccount an amount equal to all or a portion of such amount to be rebated with respect to such Series of Bonds and (ii) pay out of the Rebate Subaccount to the Department of the Treasury of the United States of America the amount, if any, required by the Code to be rebated or otherwise paid. Moneys in the Rebate Subaccount and the Subaccounts therein are not available for the benefit of the Holders of the Bonds and are not pledged to the payment of the Bonds or the interest thereon.

If and to the extent necessary to comply with any covenant established in a Series Resolution authorizing a Series of Bonds or in a Series Certificate relating to such Series of Bonds regarding maintaining the exclusion of interest on Tax-exempt Bonds from gross income for Federal income taxation purposes, the City and County may establish a Subaccount in the Rebate Subaccount with respect to such Series of Bonds or provide for the establishment such Subaccount in such Series Resolution or in such Series Certificate.

Third Lien Obligation Subaccount. The City and County must at all times maintain in the Third Lien Obligation Subaccount an amount equal to the Third Lien Obligation Requirement. Moneys on deposit in the Third Lien Obligation Subaccount will be applied by the City and County solely in accordance with the provisions of, and subject to the priorities and limitations and restrictions provided in the Bond Resolution, indenture or other instrument of the City and County securing or evidencing such Third Lien Obligations. Any moneys credited to the Third Lien Obligation Subaccount are immediately free and clear of the lien and pledge created by the Bond Resolution.

Purposes of the Various Subaccounts Outside Subordinate Obligation Account

Sewer Fund - Rate Stabilization Account. The amount of moneys and Investment Securities to be maintained from time to time in the Rate Stabilization Account is to be provided for in the Annual Budget. Moneys and Investment Securities may be transferred to the Rate Stabilization Account as provided in the Annual Budget from (i) the Sewer Fund in the order of priority provided in the Bond Resolution, or (ii) the Wastewater General Account as provided in the Bond Resolution. Moneys and Investment Securities credited to the Rate Stabilization Account are to be transferred to the Sewer Fund at the times and in the amounts as may be provided in the Annual Budget for the purposes of stabilizing the rates and charges of the Wastewater System.

Sewer Fund - Renewal and Replacement Account. Moneys on credit to the Renewal and Replacement Account may be applied to the cost of the construction of improvements to or reconstruction of the Wastewater System, emergency repairs of the Wastewater System, and major or extraordinary repairs, renewals or replacements of the Wastewater System, in each case to be set forth in the Annual Budget; (i) to restore or prevent physical damage to the Wastewater System or any part thereof; (ii) for the safe and efficient operation of the Wastewater System; or (iii) to prevent loss of Revenues.

If on the day preceding any interest payment date the moneys in the Debt Service Subaccount after making the transfer from the Common Reserve Subaccount as provided for in the Bond Resolution and from the Wastewater General Account as provided for in the First Bond Resolution, are insufficient to pay the interest,

principal and redemption price becoming due on the Bonds, the City and County, after making all transfer required by the First Bond Resolution, must transfer from the Renewal and Replacement Account for credit to the Debt Service Subaccount the amount necessary (or all the moneys in such Account if less than the amount necessary) to satisfy such deficiency.

If on each January 1 and July 1 the moneys, Investment Securities and the amount of Support Facilities in the Common Reserve Subaccount are less than the Common Reserve Subaccount Requirement, and the transfer referred to in the preceding paragraph has been made, the City and County, after making all transfers required by the First Bond Resolution, must transfer from the Renewal and Replacement Account for credit to the Common Reserve Subaccount the amount necessary (or all the moneys in such Account if less than the amount necessary) to satisfy such deficiency.

Sewer Fund - Reimbursable Obligation Account. The City and County must at all times maintain in the Reimbursable Obligation Account an amount equal to the Reimbursable Obligation Requirement. Moneys on deposit in the Reimbursable Obligation Account will be applied by the City and County solely to reimburse the General Fund of the City and County for payment of debt service due on Reimbursable Obligations issued or to be issued by the City and County with respect to the Wastewater System. Any moneys deposited in the Reimbursable Obligation Account are immediately free and clear of the lien and pledge created by the Bond Resolution.

Sewer Fund - Wastewater General Account. The City and County, after making all transfers required by the First Bond Resolution, must transfer from the Wastewater General Account to the Debt Service Subaccount, the Common Reserve Subaccount and each Separate Series Reserve Subaccount the amount necessary (or all the moneys in the Wastewater General Account if less than the amount necessary) to satisfy any deficiencies in such subaccounts required by the Bond Resolution.

Amounts in the Wastewater General Account not required to meet a deficiency referred to in the preceding paragraph or other deficiency as provided in the First Bond Resolution may be applied to the following purposes in the following order of priority:

- (1) the Costs of Improvements, or the provision of one or more reserves therefor;
- (2) for transfer to the Rate Stabilization Account in the Sewer Fund such amounts as may be provided in the Annual Budget for the purpose of stabilizing rates and charges;
- (3) the purchase at such price or prices as the City and County may deem advisable or redemption of any Bonds and expenses of such purchase or redemption at any time; and
- (4) for any other lawful purpose of the City and County.

Sewer Revenue Bond Improvement Fund - Improvement Second Account. As soon as practicable on the date of delivery of the Bonds of a Series, the amount required pursuant to the Series Resolution or Series Certificate will be deposited in the Improvement Fund for credit to the Improvement Second Account. In addition, the City and County will deposit in the Improvement Fund for credit to the Improvement Second Account such moneys other than proceeds of the Bonds as the City and County may determine to be proper or appropriate to pay the Costs of Improvements.

The Series Resolution authorizing the issuance of any Series of Bonds (exclusive of Refunding Bonds) may create and establish one or more separate special series improvement subaccounts (a "Series Improvement Second Subaccount") in the Improvement Second Account, with such designation as may be appropriate. In the event any interest on such Bonds is to be capitalized from the proceeds of such Bonds, a special series subaccount must be created in the Improvement Second Account (a "Series Improvement Interest Subaccount") with such designation as may be appropriate.

Moneys, including proceeds of the Bonds of a Series, which are credited to a Series Improvement Subaccount are to be applied to the payment of the Costs as are specified in the applicable Series Resolution or Series Certificate. Any balance remaining in such Series Improvement Second Subaccount upon completion of payment of such Costs may be used for any lawful purpose of the City and County; *provided* that the City and County has obtained an Opinion of Counsel that any such application will not impair the exemption from Federal income taxation of interest on any of the Tax-exempt Bonds.

Moneys credited to a Series Improvement Second Interest Subaccount are to be used for the purpose of paying interest on the Bonds of designated Series. On or before the 5th day preceding the end of the month next preceding the maturity of an installment of interest on the Bonds for the payment of which moneys have been credited to such Series Improvement Second Interest Subaccount, the City and County must transfer from a Series Improvement Second Interest Subaccount to the Debt Service Subaccount an amount which, together with any moneys theretofore held in the Debt Service Subaccount, are sufficient to pay such next maturing installment of interest on such Bonds.

Payments from the Improvement Second Account are to be made as specified in the Series Resolution authorizing the issuance of a Series of Bonds or a Series Certificate related to a Series of Bonds.

Moneys, including proceeds of the Bonds, in the Improvement Second Account, pending their application as provided in the Bond Resolution and Series Resolution and Series Certificate, are subject to a prior and paramount lien and charge in favor of the Holders of the Bonds, and the Holders of the Bonds have a valid claim on such moneys for the further security of the Bonds until paid out or transferred as provided in the Bond Resolution. In the event that there is an insufficiency in the Debt Service Subaccount to pay Debt Service after all transfers, other than a transfer from the Wastewater System Facility Charge Account, have been made pursuant to and in accordance with the Bond Resolution, the City and County must transfer from the Improvement Second Account such amount (or all remaining amounts in such Improvement Second Account) as is deemed necessary by the Director of Budget and Fiscal Services for deposit in the Debt Service Subaccount, which, together with the amounts then on credit to the Debt Service Subaccount, is sufficient to pay Debt Service.

Sewer Fund - Wastewater System Facility Charge Account. In the event that there is an insufficiency in the Debt Service Subaccount to pay Debt Service after all transfers have been made pursuant to and in accordance with the First Bond Resolution and the Bond Resolution, the City and County must transfer from the Wastewater System Facility Charge Account such amount (or all remaining amounts in the Wastewater System Facility Charge Account) as is deemed necessary by the Director of Budget and Fiscal Services for deposit in the Debt Service Subaccount, which, together with the amounts then on deposit in the Debt Service Subaccount, is sufficient to pay Debt Service. The amount of any such transfer must at the earliest practicable date be reimbursed to the Wastewater System Facility Charge Account as provided in the Bond Resolution.

Amounts held in the Wastewater System Facility Charge Account are to be expended for the purposes specified in Section 6-47.1 of the City Code.

Investment of Funds

Moneys in the Debt Service Subaccount may, to the fullest extent practicable and reasonable, be invested and reinvested solely in noncallable Investment Securities which are Government Obligations, FNMA's or FHLMC's (as such terms are defined in the definition of Investment Securities) and which mature or are subject to redemption at the option of the holder thereof on or prior to the respective dates when the moneys in Debt Service Subaccount will be required for the purposes intended. Moneys in the Common Reserve Subaccount or any Separate Series Reserve Subaccount not required for immediate disbursement for the purpose for which the Common Reserve Subaccount or such Separate Series Reserve Subaccount is created may, to the fullest extent practicable and reasonable, be invested and reinvested solely in, and obligations credited to the Common Reserve Subaccount or such Separate Series Reserve Subaccount must be, investments specified in items (i) to (vi), inclusive, of the definition of Investment Securities and which mature or are available at par at or prior to five (5) years from the date of investment thereof.

Moneys in the Sewer Fund not required for immediate disbursement for the purpose for which such Fund is created may, to the fullest extent practicable and reasonable, be invested and reinvested, to the extent

allowed by law, solely in, and obligations deposited in such Fund will be, Investment Securities which mature or are subject to redemption or payment at par at the option of the holder thereof, not later than such times as will be necessary to provide moneys when needed to provide payments from such Fund.

Moneys in the Improvement Second Account, other than a Series Improvement Second Interest Subaccount therein, not required for immediate disbursement for the purposes for which such Account is created may, to the fullest extent practicable and reasonable, be invested and reinvested to the extent allowed by law, solely in, and obligations deposited in such Account will be, Investment Securities which mature or are subject to redemption or payment at par at the option of the holder thereof not later than such times as shall be necessary to provide moneys when needed to provide payments from such Account.

Moneys in a Series Improvement Second Interest Subaccount in the Improvement Second Account not required for immediate disbursement for the purposes for which such Account is created may, to the fullest extent practicable and reasonable, be invested and reinvested to the extent allowed by law, solely in, and obligations deposited in such Account shall be, noncallable Investment Securities which are Government Obligations, FNMAs or FHLMCs (as such terms are defined in the definition of Investment Securities) that mature or are subject to redemption at the option of the holder thereof not later than such times as shall be necessary to provide moneys when needed to provide payments from such Account.

To the extent permitted in the Bond Resolution, all income received from the investment or reinvestment of moneys in the Funds, Accounts and Subaccounts established under the Bond Resolution will be deposited in the respective Fund, Account and Subaccount from which such investments are made and applied as a credit against the next succeeding deposit or credit required to be made pursuant to the Bond Resolution; provided however, that except as to the Third Lien Obligation Subaccount and the Reimbursable Obligation Account, all or a portion of the income received from the investment or reinvestment of moneys in any such Fund, Account and Subaccount may be deposited in the Sewer Fund or the Improvement Second Account, including a Series Improvement Second Interest Subaccount therein; and *provided, further, however*, that all income received from the investment or reinvestment of moneys in any Series Improvement Second Interest Subaccount must be deposited in the Debt Service Subaccount.

Neither the Director of Budget and Fiscal Services nor any Paying Agent shall be liable for any depreciation in value of any investments made by the City and County.

Valuation of Investment Securities

In computing the amount in any Fund, Account or Subaccount, Investment Securities therein are to be valued at cost or accreted value, whichever is lower, exclusive of accrued interest. The City and County is to determine the value of Investment Securities held in any Fund, Account or Subaccount as frequently as it deems necessary, but not less often than annually.

Depositaries

All moneys held by the City and County or any Depositary under the provisions of the Bond Resolution are to be held in trust and applied only in accordance with the provisions of the Bond Resolution, and each of the Funds, Accounts and Subaccounts established by the Bond Resolution shall be a trust fund.

Each Depositary must be a bank or trust company organized under the laws of any state of the United States or a national banking association having capital stock, surplus and undivided earnings of \$5,000,000 or more and willing and able to accept such office on reasonable and customary terms and authorized by law to act in accordance with the provisions of the Bond Resolution.

Concerning Depositaries and Paying Agents

Qualifications and Appointment. The Director of Budget and Fiscal Services may appoint one or more Paying Agents and Depositaries as of the date of issuance and delivery of the first Series of Bonds and may at any time or from time to time appoint one or more other Paying Agents or other Depositaries having the qualifications of a depositary, as described in the Bond Resolution; provided however, the Director of Budget and

Fiscal Services may be designated Paying Agent and/or Depository. Each Paying Agent, other than the Director of Budget and Fiscal Services, and each Depository, other than the Director of Budget and Fiscal Services, shall signify its acceptance of the duties and obligations imposed upon it by the Bond Resolution by executing and delivering to the City and County and the Director of Budget and Fiscal Services a written acceptance thereof.

Paying Agents and Depositories May Buy, Hold, Sell or Deal in Bonds and Other Indebtedness of the City and County. Each Paying Agent and each Depository and its respective directors, officers, employees or agents, may in good faith buy, sell, own, hold and deal in any of the Bonds issued under the provisions of the Bond Resolution and may join any action which any Holder of a Bond may be entitled to take, with like effect as if such Paying Agent or Depository were not a Paying Agent or any Depository, as the case may be, under the Bond Resolution. Any Paying Agent or any Depository may in good faith hold any other form of indebtedness of the City and County; own, accept or negotiate any drafts, bills of exchange, acceptances or obligations of the City and County, and make disbursements for the City and County and enter into any commercial or business arrangement therewith.

Reimbursement of Paying Agents and Depositories for Fees, Expenses and Charges. Each Paying Agent and each Depository shall be entitled to reasonable fees and to reimbursement by the City and County for all expenses and charges reasonably incurred by it in the performance of its duties under the Bond Resolution. No Paying Agent nor Depository shall have a lien for such fees and reimbursement on the moneys pledged to secure the Bonds under the Bond Resolution at any time held by it, prior to the lien or claim of the Holders of the Bonds on all such moneys.

Covenants

The City and County has covenanted and agreed in the Bond Resolution with the Holders of all Bonds issued pursuant to the Bond Resolution as follows:

Maintenance of the Properties of the Wastewater System; Keeping the System in Good Repair. The Department will: (i) maintain, preserve and keep, or cause to be maintained, preserved and kept, the properties of the Wastewater System and all additions and betterments thereto and extensions thereof, and every part and parcel thereof in good repair, working order and condition, (ii) from time to time make, or cause to be made, all necessary and proper repairs, renewals, replacements, additions, extensions and betterments thereto, so that at all times the business carried on in connection therewith shall properly and advantageously be conducted, and (iii) comply, or cause to be complied with the terms and conditions of any permit or license for the Wastewater System or any part thereof issued by any federal or state governmental agency or body and with any federal or state law or regulation applicable to the construction, operation, maintenance and repair of the Wastewater System or requiring a license, permit or approval therefor.

Rates and Charges. The City and County will at all times fix, charge and collect such rates and other charges as shall be required in order that in each Fiscal Year the Net Revenues will be not less than the Net Revenue Requirement for such Fiscal Year ("Rate Covenant"). The failure in any Fiscal Year to comply with the foregoing Rate Covenant does not constitute an Event of Default if the City and County complies with requirements described in the next paragraph.

Prior to the end of each Fiscal Year the Director of Environmental Services or the Director of Budget and Fiscal Services if requested by the Director of Environmental Services must complete a review of the financial condition of the Department for the purpose of estimating whether the Net Revenues for such Fiscal Year and for the next succeeding Fiscal Year will be sufficient to comply with the Rate Covenant and must by a written certificate make a determination with respect to such compliance. Such review may take into consideration the completion of any uncompleted Improvement and the issuance of future Series of Bonds if necessary to finance the completion of such Improvements. Such written certificate must set forth a reasonably detailed statement of the actual and estimated Revenues, Operation and Maintenance Expenses, Aggregate Debt Service, and any other estimates or assumptions upon which such determination was based, and must be filed with the City Clerk on or before July 1 in each year. If it is determined in such written certificate that the Revenues may not be so sufficient, the Director of Environmental Services or the Director of Budget and Fiscal Services if requested by the Director of Environmental Services must forthwith make a study for the purpose of determining a schedule of fees, rates and charges which, in the opinion of the Director of Environmental Services or the Director of Budget and Fiscal

Services, will cause sufficient Revenues to be collected in the following Fiscal Year to comply with the Rate Covenant and will cause additional Revenues to be collected in such following and later Fiscal Years sufficient to eliminate the amount of any deficiency at the earliest practicable time, or the Director of Environmental Services or the Director of Budget and Fiscal Services may elect to cause the Consulting Engineer to make such a study and render such opinion. The City Council shall as promptly as practicable but no later than the 120 days following such determination by the Director of Environmental Services or the Director of Budget and Fiscal Services, or receipt of the Consulting Engineer's recommendation, adopt and place in effect a schedule of fees, rates and charges as so determined or recommended pursuant to the Bond Resolution.

Sale, Lease or Other Disposition of Properties of the Wastewater System. The properties of the Wastewater System may not be sold, mortgaged, leased or otherwise disposed of except as described below.

The properties of the Wastewater System may be sold, leased, or otherwise disposed of in their entirety if simultaneously with such sale, lease or other disposition thereof provision is made for the payment of all Bonds then Outstanding and such Bonds are no longer deemed Outstanding within the meaning of the Bond Resolution.

Any portion of the properties of the Wastewater System may be sold, leased, or otherwise disposed of on such terms and conditions as may be determined by the City and County if the value of such portion of the properties as of the date of such sale, lease or disposition does not exceed five percent (5%) of the net book assets of the Wastewater System as of the last day of the preceding Fiscal Year as shown in the most recent audited financial statements of the Department. Any part of the properties of the Wastewater System having a value as of the date of the sale, lease or disposition which exceeds 5% of the net book assets of the Wastewater System as of the last day of the preceding Fiscal Year as shown in the most recent audited financial statements of the Department may be sold, leased, or otherwise disposed of if the Consulting Engineer certifies to the City and County in writing that the terms and conditions of the proposed sale, lease or other disposition of any such properties are fair and reasonable, and that the estimated Revenues to be derived from the remaining properties of the Wastewater System, after taking into consideration the use by the Department of the proceeds of such proposed sale, lease or other disposition of such properties, will be sufficient to enable the City and County to comply with all covenants and conditions of the Bond Resolution. Proceeds of any sale, lease or other disposition of any portion of the properties of the Wastewater System pursuant to this provision are to be paid first into the Debt Service Account created by the First Bond Resolution and applied to the purchase or redemption of bonds thereunder, second into the Debt Service Subaccount and applied to the purchase or redemption of Bonds, and third into the Sewer Fund and applied by the City and County for the purpose of constructing extensions, betterments or improvements to the Wastewater System as the City and County may determine.

Surplus lands, crops, timber, buildings and any other portion of the works, plant and facilities of the Wastewater System and real and personal property comprising a part thereof, which, in the opinion of the Director of Environmental Services, have become unserviceable, inadequate, obsolete, worn out, or unfit to be used in the operation of the Wastewater System, or no longer necessary, material to, or useful in such operation may be sold, leased, or otherwise disposed of. Proceeds of any such sale, lease or other disposition of any portion of the properties of the Wastewater System pursuant to this provision are to be paid into the Sewer Fund.

If permitted by the laws of the State, the City and County may transfer without consideration the properties comprising the Wastewater System to a public corporation or political subdivision of the State, provided such corporation or subdivision assumes all of the City and County's or the Department's obligations and duties under the Bond Resolution.

In the event that any part of the properties of the Wastewater System is transferred from the City and County through the operation of law (including condemnation), any moneys received by the City and County as a result of such transfer are to be paid: (i) if such proceeds are not in excess of \$250,000, into the Sewer Fund; or (ii) if such proceeds are in excess of \$250,000: (a) into the Debt Service Account created by the First Bond Resolution and applied to the purchase or redemption of bonds issued thereunder; (b) in the Debt Service Subaccount and applied to the purchase or redemption of Bonds; or (c) into the Renewal and Replacement Account and applied by the City and County for the purpose of constructing replacements, extensions, betterments or improvements to the Wastewater System, as the City and County shall determine.

Insurance. Except as provided for in the next paragraph, the Department must keep, or cause to be kept, the works, plants and facilities comprising the properties of the Wastewater System and the operations thereof insured to the extent available at reasonable cost with responsible insurers, with policies payable to the City and County or the Department, against risks of direct physical loss, damage to or destruction of the above-ground structures, and the equipment and contents therein, of the Wastewater System arising from accidents, casualties or negligence, and other causes customarily insured against, at least to the extent that similar insurance is usually carried by utilities operating like properties, including liability insurance and workman's compensation insurance; provided, however, that any time while any contractor engaged in constructing any part of the Wastewater System is fully responsible for such insurance, the Department is not required to keep such part of the Wastewater System insured. All policies of insurance shall be for the benefit of the Holders of the Bonds and the City and County or the Department as their respective interests may appear.

In the event of any loss or damage to the properties of the Wastewater System covered by insurance, the Department will: (i) with respect to each such loss, promptly repair and reconstruct to the extent necessary to the proper conduct of the operations of the Wastewater System the lost or damaged portion thereof and shall apply the proceeds of any insurance policy or policies covering such loss or damage for that purpose to the extent required therefor, unless, in case of loss or damage involving \$250,000 or more, the Department determines that such repair and reconstruction will not be undertaken; and (ii) if the Department does not use the entire proceeds of such insurance to repair or reconstruct such lost or damaged property, the proceeds of such insurance policy or policies or any portion thereof not used for such repair or reconstruction, as the case may be, are to be paid into the Sewer Fund. If the Department does not obtain insurance from responsible insurers as provided for in the Bond Resolution, the City and County or the Department must self-insure; provided, however, that if the Department fails to carry insurance against any of the risks normally insured against by operators of facilities similar to the Wastewater System, it must secure the concurrence of an independent insurance consultant. In making its decision whether to concur in such self-insurance, the independent insurance consultant must (i) make an estimate of the added financial risks, if any, assumed by the Department as a result of the self-insurance; (ii) consider the availability of commercial insurance, the terms upon which such insurance is available and the costs of such available insurance, and the effect of such terms and costs upon the Department's costs and charges for its services; and (iii) determine whether the added financial risk, if any, being assumed by the Department is prudent in light of the savings to be realized from such self-insurance or in light of the general availability of insurance.

The Department may include insurance required by the Bond Resolution as part of a blanket insurance policy of the City and County.

Consulting Engineer. The City Council, the Director of Environmental Services or the Director of Budget and Fiscal Services may from time to time retain and appoint, as Consulting Engineer, an independent consulting engineer or engineering firm or corporation having special skill, knowledge and experience in analyzing the operations of wastewater systems, preparing rate analyses, forecasting the loads and revenues of wastewater systems, preparing feasibility reports respecting the financing of wastewater systems and advising on the operation of wastewater facilities, who shall be available to advise the Department, upon request, and to make such investigations and determinations as may be necessary from time to time under the provisions of the Bond Resolution.

Books of Account; Annual Audit. The Department will maintain and keep proper books of account relating to the Wastewater System and in accordance with generally accepted accounting principles. Within 180 days after the end of each Fiscal Year commencing with the Fiscal Year ending June 30, 2000, the Department will cause such books of account to be audited by an independent certified public accountant. The audit required by the Bond Resolution may be part of a comprehensive audit of the City and County, *provided* that the Wastewater System in such audit is treated as an "enterprise fund" and the revenues and expenses of the Wastewater System are stated in a manner which permits identification by category of the sources and uses of the Revenues. A copy of each audit report prepared in conformity with generally accepted accounting principles must be filed promptly with the City and County and sent to any Bondholder filing with the Director of Environmental Services a written request for a copy thereof. and to any Rating Agency which has rated any Bonds.

To Pay Bonds Punctually. The City and County will duly and punctually pay, or cause to be paid, but only from the Revenues, income and other funds specified in the Bond Resolution, the principal and Redemption Price (if any) of, and interest on, each and every Bond on the dates and at the places, and in the manner provided in

the Bonds according to the true intent and meaning thereof, and the City and County will faithfully do and perform and at all times fully observe and keep any and all of its covenants, undertakings, stipulations and provisions contained in the Bonds and in the Bond Resolution.

Payment of Taxes and Other Claims. The Department must from time to time duly pay and discharge, or cause to be paid and discharged, all taxes, assessments and other governmental charges, or payments in lieu thereof, lawfully imposed upon the properties of the Wastewater System (or any part thereof) or upon the Net Revenues or income received therefrom when the same become due, as well as all lawful claims for labor, material and supplies, which, if not paid, might become a lien or charge upon said properties or any part thereof, or upon the Revenues derived from the ownership or operation of the Wastewater System, or which might in any way impair the security of the Bonds, except any such assessments, charges or claims which the Department in good faith contests as to validity.

Extension of Payment of Bonds. The City and County will not, directly or indirectly, extend or assent to the extension of the maturity of any of the Bonds or the time of payment of any claims for interest by the purchase of such Bonds, coupons, if any, or claims for interest or by any other arrangement and in case the maturity of any of the Bonds or the time for payment of any such claims for interest is extended, such Bonds or claims for interest will not be entitled, in case of any default under the Bond Resolution, to the benefit of the Bond Resolution or to any payment out of any assets of the City and County or the funds (except funds held in trust for the payment of particular Bonds or claims for interest pursuant to the Bond Resolution) held by the Paying Agents, except subject to the prior payment of the principal of all Bonds issued and Outstanding the maturity of which has not been extended and of such portion of the accrued interest on the Bonds as shall not be represented by such extended claims for interest.

Sound Improvements and Extensions. The Department will not expend any of the income, revenues, receipts, profits and other moneys derived by it from the ownership or operation of the Wastewater System for any renewals, replacements, additions, betterments and improvements to, or extensions of, the Wastewater System which, in the sole opinion of the Director of Environmental Services, will not properly and advantageously contribute to the conduct of the business of the Wastewater System in an efficient and economical manner unless required to do so to permit the continued operation of the Wastewater System or to preserve or protect the Wastewater System.

Annual Budget. Not later than May 31 before the beginning of any Fiscal Year the City and County or the Department will prepare a preliminary budget of Operation and Maintenance Expenses of the Wastewater System and reserves therefor for the ensuing Fiscal Year. Each such budget and each Annual Budget will include, in addition to provisions for all anticipated Operation and Maintenance Expenses, provision for the payments required to be made to the Renewal and Replacement Account, provided that such payments shall in the aggregate at least equal the amount described below. Such preliminary budget and any Annual Budget may set forth such additional material as the City and County or the Department may determine.

Except as described below, on or before the 15th day of each such Fiscal Year, the City and County must finally adopt the Annual Budget for such year. The City and County may at any time adopt an amended Annual Budget for the remainder of the then current Fiscal Year. Copies of the Annual Budget and of any amended Annual Budget are to be made available for inspection by the Bondholders and are to be sent to each Rating Agency.

If for any reason the City and County does not adopt the Annual Budget before the 15th day of any Fiscal Year, the budget for the preceding Fiscal Year is deemed to be in effect for such Fiscal Year until the Annual Budget for such Fiscal Year is adopted. For any purpose of computation under the provisions of the Bond Resolution, the budget for the preceding year is deemed to have been adopted for any Fiscal Year until the Annual Budget for such year is adopted.

Every preliminary budget, Annual Budget and amended Annual Budget must: (i) set forth in reasonable detail amounts required for repair, replacement or reconstruction of the Wastewater System and major or extraordinary repairs, renewals or replacements of the Wastewater System, if any, for the period to be covered by such budget; (ii) specify the amounts to be deposited in the Renewal and Replacement Account, the Subordinate Obligation Account (including the Third Lien Obligation Subaccount therein), the Reimbursable Obligation Account

and the Wastewater General Account, and the amounts to be maintained in the Sewer Fund for working capital and operating reserves and in the Rate Stabilization Account for rate stabilization purposes, if any, for such purposes for such period, (iii) specify the amounts to be transferred from the Wastewater General Account to the Rate Stabilization Account and to other Funds and Accounts; and (iv) project the amounts required for such purposes for the next five Fiscal Years in such format as the Director of Environmental Services may determine. A copy of each such report is to be filed and maintained in the records of the City and County.

Events of Default

Each of the following events constitutes an Event of Default under the Bond Resolution:

(a) if payment of the principal and Redemption Price, if any, of any Bond, is not punctually made when due and payable, whether at the stated maturity thereof or upon proceedings for the redemption thereof (whether by voluntary redemption or a mandatory sinking fund redemption or otherwise);

(b) if payment of the interest on any Bond is not punctually made when due;

(c) if the provisions of any Series Resolution with respect to mandatory Sinking Fund Installment payments or the redemption of Term Bonds therefrom, as the case may be, are not punctually complied with at the time and in the manner specified in such Series Resolution;

(d) if the City and County or the Department fails to duly and punctually perform or observe any other of the covenants, agreements or conditions contained in the Bond Resolution or in the Bonds, on the part of the City and County or the Department to be performed, and such failure continues for 90 days after written notice thereof from the Holders of not less than 20% of the Bonds then Outstanding; provided that, if such failure is such that it cannot be corrected within such 90-day period, it will not constitute an Event of Default if corrective action is instituted within such period and diligently pursued until the failure is corrected;

(e) if the City and County: (i) admits in writing its inability to pay its debts generally as they become due; or (ii) files a petition in bankruptcy or seeking a composition of indebtedness under the provisions of any Federal or state bankruptcy or similar law; or (iii) makes an assignment for the benefit of its creditors; or (iv) files a petition or any answer seeking relief under the provisions of any Federal or state bankruptcy or similar law; or (v) consents to the appointment of a receiver of the whole or any substantial part of the Wastewater System; or (vi) consents to the assumption by any court of competent jurisdiction under the provisions of any other law for the relief or aid of debtors of custody or control of the City and County or the Department, or of the whole or any substantial part of the Wastewater System; and

(f) if a default occurs under the First Bond Resolution.

Notice to Bondholders of Event of Default

Immediately after the occurrence of an Event of Default or within 30 days after any Paying Agent knows of any other Event of Default, the Paying Agent or Paying Agents shall give notice of all such Events of Default to the Bondholders, all other Paying Agents and Support Facility Providers, and each Rating Agency, in the manner as provided for in the Bond Resolution, unless such Events of Default shall have been cured before the giving of such notice.

Acceleration of Bonds; Rights of Insurers

If an Event of Default shall happen and shall not have been remedied, then and in every such case the Holders of not less than 25% in principal amount of the Bonds then Outstanding, by notice in writing to the City and County and the Director of Budget and Fiscal Services, may declare the principal of all the Bonds then

Outstanding, and the interest accrued thereon, to be due and payable immediately, and upon any such declaration the same shall become and be immediately due and payable. The right of the Holders of not less than 25% in principal amount of the Bonds then Outstanding to make any such declaration, however, shall be subject to the condition that if, at any time after such declaration, but before the Bonds shall have matured by their terms, all overdue installments of interest upon the Bonds, together with interest on such overdue installments of interest to the extent permitted by law and all other sums then payable by the City and County under the Bond Resolution (except the principal of, and interest accrued since the next preceding interest date on, the Bonds due and payable solely by virtue of such declaration) shall either be paid by or for the account of the City and County or provision satisfactory to the Holders of a majority in principal amount of the Bonds then Outstanding shall be made for such payment, and all defaults under the Bonds or under the Bond Resolution (other than the payment of principal and interest due and payable solely by reason of such declaration) shall be cured or be secured to the satisfaction of the Holders of a majority in principal amount of the Bonds then Outstanding or provision deemed by such Holders of the Bonds to be adequate shall be made therefor, then and in every such case the Holders of at least a majority in principal amount of the Bonds then Outstanding, by written notice to the City and County, may rescind such declaration and annul such default in its entirety, but no such rescission shall extend to or affect any subsequent default or impair or exhaust any resulting right or power.

The bond insurers for all Outstanding Bonds have certain consent rights in connection with any default which may constrain the rights of the Holders described above.

Inspection of Books and Records; the City and County to Account as Trustee for Express Trust

The City and County covenants that if an Event of Default shall have happened and shall not have been remedied, the books of record and account of the Department relating to the Wastewater System and all other records relating thereto shall at all times be subject to the inspection and use of the Holders of at least 25% in principal amount of the Bonds then Outstanding and of their respective agents and attorneys or of any committee therefor.

The City and County covenants that if an Event of Default shall have happened and shall not have been remedied, the City and County will continue to account, as a trustee of an express trust, for all Revenues and other moneys, securities and funds pledged under the Bond Resolution.

Application of Revenues in an Event of Default

During the continuance of an Event of Default as described in items (a) through (c) of the Events of Default described above or of any other Event of Default resulting in an Event of Default described in items (a) through (c) of the Events of Default described above, the Revenues received by a receiver appointed pursuant to the Bond Resolution as the result of the taking of possession of the business and properties of the Wastewater System, are to be applied by the receiver: first, to the payment of all necessary and proper Operation and Maintenance Expenses of the Wastewater System and all other proper disbursements or liabilities made or incurred by the receiver; second, to the then due and overdue payments into the Debt Service Subaccount, including the making up of deficiencies therein; and last, for any lawful purpose in connection with the Wastewater System.

In the event that at any time the funds held by the receiver are insufficient for the payment of the principal and Redemption Price (if any) of, and interest then due on, the Bonds, such funds (other than funds held for the payment or redemption of particular Bonds or coupons) and all Revenues of the Department and other of its moneys received or collected for the benefit or for the account of Holders of the Bonds by the receiver are to be applied as follows:

(1) Unless the principal of all of the Bonds shall have become due and payable,

First, to the payment of all necessary and proper Operation and Maintenance Expenses of the Wastewater System and all other proper disbursements or liabilities made or incurred by the receiver;

Second, to the payment to the persons entitled thereto of all installments of interest then due (including any interest on overdue principal) in the order of the maturity of such installments, earliest maturities first, and if the amounts available shall not be sufficient to pay in full any installment or installments of interest maturing on the same date, then to the payment thereof ratably, according to the amount due thereon, to the persons entitled thereto, without any discrimination or preference; and

Third, to the payment to the persons entitled thereto of the principal and premium, if any, due and unpaid upon the Bonds at the time of such payment without preference or priority of any Bond over any other Bonds, ratably, according to the amounts due respectively for principal and redemption premium, without any discrimination or preference.

(2) If the principal of all of the Bonds shall have become due and payable,

First, to the payment of all necessary and proper Operation and Maintenance Expenses of the Wastewater System and all other proper disbursements or liabilities made or incurred by the receiver;

Second, to the payment of the principal and interest then due and unpaid upon the Bonds without preference or priority of principal over interest or of interest over principal, or of any installment of interest over any other installment of interest, or of any Bond over any other Bonds, ratably, according to the amounts due respectively for principal and interest, to the persons entitled thereto without any discrimination or preference.

Whenever moneys are to be applied as described in the foregoing paragraphs, such moneys shall be applied by the receiver at such times, and from time to time, as it in its sole discretion shall determine, having due regard to the amount of such moneys available for application and the likelihood of additional moneys becoming available for such application in the future.

If and whenever all overdue installments of interest on all Bonds, together with the reasonable and proper charges, expenses, and liabilities of the Holders of the Bonds, their respective agents and attorneys, and all other sums payable by the City and County under the Bond Resolution including the principal and Redemption Price (if any) of all Bonds which shall then be payable, shall either be paid in full by or for the account of the City and County or provision satisfactory to the receiver shall be made for such payment, and all defaults under the Bond Resolution or the Bonds shall be made good and secured to the satisfaction of the receiver or provision deemed by the receiver to be adequate therefor, the receiver shall pay over to the Department all of its moneys, securities, funds and Revenues then remaining unexpended in the hands of the Bondholders' Committee (except moneys, securities, funds or Revenues deposited or pledged, or required by the terms of the Bond Resolution to be deposited or pledged, with the Director of Budget and Fiscal Services), control of the business and possession of the property of the Department shall be restored to the Department, and thereupon the City and County shall be restored to its former positions and rights under the Bond Resolution, and all Revenues shall thereafter be applied as provided for in the Bond Resolution. No such payment over to the Department by the receiver or resumption of this application of Revenues as provided in the Bond Resolution, shall extend to or affect any subsequent default under the Bond Resolution or impair any right consequent thereon.

Suits at Law or Equity and Mandamus and Appointment of a Receiver

If an Event of Default shall happen and shall not have been remedied, then and in every such case, but subject to the provisions, limitations and conditions as set forth in the Bond Resolution, the Holder of any Bond at the time Outstanding shall be entitled, for the equal benefit and protection of all Holders of the Bonds similarly situated to proceed, protect and enforce the rights vested in such Holder by the Bond Resolution by such appropriate judicial proceeding as such Holder shall deem most effectual to protect and enforce any such right, either by suit in equity or by action of law, whether for the specific performance of any covenant or agreement contained in the Bond Resolution, or in aid of the exercise of any power granted in the Bond Resolution, or to enforce any other legal or equitable right vested in the Holders of Bonds by the Bond Resolution or by law; provided, however, that no judicial proceeding shall be brought seeking the appointment of a receiver to take possession of the Wastewater System or to manage, receive and apply the Revenues unless the Holders of not less than a majority in principal amount of the

Bonds then Outstanding or a Bondholders' Committee representing the Holders of not less than a majority in principal amount of the Bonds then Outstanding shall have joined in or consented to such proceeding.

Bondholders' Committee

If an Event of Default shall happen and shall not have been remedied, the Holders of not less than 25% in principal amount of the Bonds then Outstanding may call a meeting of the Holders of Bonds for the purpose of electing a Bondholders' Committee. Such meeting shall be called and proceedings thereat shall be conducted as provided for other meetings of Bondholders pursuant to the Bond Resolution. At such meeting the Holders of not less than a majority of the principal amount of the Bonds then Outstanding must be present in person or by proxy in order to constitute a quorum for the transaction of business, less than a quorum, however, having power to adjourn from time to time without any notice other than that required by the Bond Resolution. A quorum being present at such meeting, the Bondholders present in person or by proxy may, by the votes cast by the Holders of a majority in principal amount of the Bonds so present in person or by proxy, elect one or more persons who may or may not be Bondholders to the Bondholders' Committee which shall act as trustee for all Bondholders. The Bondholders present in person or by proxy at said meeting, or at any adjourned meeting thereof, shall prescribe the manner in which the successors of the persons elected to the Bondholders' Committee at such Bondholders' meeting shall be elected or appointed, and may prescribe rules and regulations governing the exercise by the Bondholders' Committee of the power conferred upon it, and may provide for the termination of the existence of the Bondholders' Committee.

Bondholders May Direct Proceedings; Rights of Insurers

The Holders of not less than a majority in principal amount of the Bonds at the time outstanding are authorized and empowered: (1) to direct the time, method, and place of conducting any proceeding for any remedy available to the holders of the Bonds; or (2) on behalf of the holders of the Bonds then outstanding, to consent to the waiver of any Event of Default or its consequences. No waiver or rescission shall extend to any subsequent or other default, or impair any right consequent thereon.

The bond insurers for all Outstanding Bonds have certain consent rights in connection with any default which may constrain the rights of the Holders described above.

Abandonment of Proceedings; Adverse Determination

No delay or omission of any Holder of Bonds to exercise any right or power arising upon the occurrence of a default under the Bond Resolution, including an Event of Default, shall impair any right or power or shall be construed to be a waiver of any such default or to be an acquiescence therein. Every power and remedy given by the Bond Resolution to the Holders of Bonds may be exercised from time to time and as often as may be deemed expedient by such Holders.

In case the Holders of the Bonds or a Bondholders' Committee formed pursuant to the Bond Resolution shall have proceeded to enforce any right under the Bond Resolution and such proceedings shall have been discontinued or abandoned for any reason, or shall have been determined adversely to the Holders of the Bonds or such Bondholders' Committee, then and in every such case the City and County, and the Holders of the Bonds shall be restored to their former positions and rights under the Bond Resolution, and all rights, remedies and powers of the Holders of the Bonds shall continue as if no such proceedings had been taken.

Remedies Subject to Rights of Holders of First Resolution Obligations

The Bond Resolution expressly limits the right of holders of the Bonds as described below.

(A) In the event of any insolvency or bankruptcy proceedings, and any receivership, liquidation, reorganization or other similar proceedings in connection therewith, relative to the City and County or the Department, or to property of the City and County or the Department, and in the event of any proceedings for voluntary liquidation, dissolution or other winding up of the City and County or the department, the Holders of all First Resolution Obligations then outstanding shall be entitled to receive payment in full of all principal and interest on all such First Resolution Obligations before the holders of the Bonds are entitled to receive any payment from the

trust estate under the First Bond Resolution consisting of the Net Revenues and funds held under the First Bond Resolution (hereinafter referred to as the “Trust Estate”) on account of principal (and premium, if any) or interest on the Bonds.

(B) In the event that any issue of Bonds is declared due and payable before its expressed maturity because of the occurrence of an event of default (under circumstances when the provisions of (A) above shall not be applicable), the Holders of all First Resolution Obligations outstanding at the time such Bonds so become due and payable because of such occurrence of such an event of default shall be entitled to receive payment in full of all principal and interest on all such First Resolution Obligations before the holders of the Bonds are entitled to receive any accelerated payment from the Trust Estate of principal (and premium, if any) or interest on the Bonds.

(C) If any event of default with respect to the First Resolution Obligations shall have occurred and be continuing (under circumstances when the provisions of (A) above shall not be applicable), the Holders of all First Resolution Obligations then outstanding shall be entitled to receive payment in full of all principal and interest on all such First Resolution Obligations before the holders of the Bonds are entitled to receive any accelerated payment from the Trust Estate of principal (and premium, if any) or interest on the Bonds.

(D) No First Resolution Obligation holder shall be prejudiced in his right to enforce subordination of the Bonds by any act or failure to act on the part of the City and County.

(E) The provisions of (A), (B), (C) and (D) above are solely for the purpose of defining the relative rights of the First Resolution Obligation holders on the one hand, and the holders of Bonds on the other hand, and nothing in the Bond Resolution shall impair, as between the City and County and the owners of the Bonds, the obligation of the City and County to pay to the owners thereof the principal thereof and premium, if any, and interest thereon in accordance with its terms, nor shall anything therein prevent the holders of the Bonds from exercising all remedies otherwise permitted by applicable law or under the Bond Resolution upon default thereunder, subject to the rights under (A), (B), (C) and (D) above of the Holders of First Resolution Obligations to receive cash, property or securities otherwise payable or deliverable to the holders of the Bonds. Insofar as a trustee or paying agent for the Bonds is concerned, the foregoing provisions shall not prevent the application by such trustee or paying agent of any moneys deposited with such trustee or paying agent for the purpose of the payment of or on account of the principal (and premium, if any) and interest on such Bonds if such trustee or paying agent did not have knowledge at the time of such application that such payment was prohibited by the foregoing provisions.

Amending and Supplementing of Resolution; Rights of Insurers

Amending and Supplementing of Resolution Without Consent of Holders of Bonds. The City and County, from time to time and at any time and without the consent or concurrence of any Holder of any Bond, may adopt a Series Resolution (i) for the purpose of providing for the issuance of Bonds pursuant to the provisions as set forth in the Bond Resolution; (ii) to make any changes, modifications, amendments or deletions to the Bond Resolution which may be required to permit the Bond Resolution to be qualified under the Trust Indenture Act of 1939 of the United States of America; or (iii) if the rights of the Holders of the Bonds then Outstanding shall not be materially adversely affected thereby, a Supplemental Resolution (herein defined and referred to as a “Supplemental Resolution”) for any one or more of the following purposes:

1. to make any changes or corrections in the Bond Resolution as to which the City and County shall have been advised by counsel that the same are verbal corrections or changes or are required for the purpose of curing or correcting any ambiguity or defective or inconsistent provision or omission or mistake or manifest error contained in the Bond Resolution, or to insert in the Bond Resolution such provisions clarifying matters or questions arising under the Bond Resolution as are necessary or desirable;
2. to add additional covenants and agreements of the City and County for the purpose of further securing the payment of the Bonds;
3. to surrender any right, power or privilege reserved to or conferred upon the City and County by the terms of the Bond Resolution;

4. to confirm as further assurance any lien, pledge or charge, or the subjection to any lien, pledge, or charge, created or to be created by the provisions of the Bond Resolution;

5. to grant to or to confer upon the Holders of the Bonds any additional rights, remedies, powers, authority or security that lawfully may be granted to or conferred upon them; and

6. to modify in any other respect any of the provisions of the Bond Resolution.

Except for Series Resolutions authorizing the issuance of Bonds pursuant to the Bond Resolution, the City and County shall not adopt any Supplemental Resolution authorized by the foregoing provisions of the Bond Resolution unless in the Opinion of Counsel the adoption of such Supplemental Resolution is permitted by the Bond Resolution and the provisions of such Supplemental Resolution do not materially adversely affect the rights of the Holders of the Bonds then Outstanding.

Amendment of Resolution With Consent of Holders of the Bonds. With the consent of the Holders of not less than a majority of the Bonds then Outstanding and with written consent of each Support Facility Provider, the City and County from time to time and at any time may adopt a resolution amendatory of or supplemental to the Bond Resolution for the purpose of adding any provisions to, or changing in any manner or eliminating any of the provisions of, the Bond Resolution, or modifying or amending the rights and obligations of the City and County thereunder, or modifying or amending in any manner the rights of the Holders of the Bonds then Outstanding. For purposes of the preceding sentence, the written consent of each Support Facility Provider providing a Support Facility for any Bonds shall constitute consent of the Holders of such Bonds.

Without the specific consent of the Holder of each such Bond which would be affected thereby, no Supplemental Resolution amending or supplementing the provisions of the Bond Resolution shall: (1) change the fixed maturity date for the payment of the principal of any Bond or the dates for the payment of interest thereon or the terms of the redemption thereof, or reduce the principal amount of any Bond or the rate of interest thereon or the Redemption Price (or the redemption premium) payable upon the redemption or prepayment thereof; or (2) reduce the aforesaid percentage of Bonds, the Holders of which are required to consent to any Supplemental Resolution amending or supplementing the provisions of the Bond Resolution; or (3) give to any Bond or Bonds any preference over any other Bond or Bonds secured by the Bond Resolution; or (4) authorize the creation of any pledge of the Revenues and other moneys pledged under the Bond Resolution, prior, superior or equal to the pledge of and lien and charge thereon created in the Bond Resolution for the payment of the Bonds except to the extent provided in the Bond Resolution; or (5) deprive any Holder of the Bonds in any material respect of the security afforded by the Bond Resolution; provided further, however, that without the specific consents of the Holders of not less than a majority in principal amount of the Term Bonds then Outstanding and affected thereby, no Supplemental Resolution amending or supplementing the provisions of the Bond Resolution shall (a) change the amount of any Sinking Fund Installments for the retirement of Term Bonds or the due dates of such installments or the terms for the purchase or redemption thereof from such installments, or (b) reduce the aforesaid percentage of Term Bonds, the Holders of which are required to consent to any such Supplemental Resolution. (Nothing in this paragraph contained, however, shall be construed as making necessary the approval of the Holders of the Bonds of the adoption of any Supplemental Resolution). A modification or amendment with respect to the Sewer Fund or the Debt Service Subaccount or Common Reserve Subaccount or any Separate Series Reserve Subaccount therein shall not be deemed a change in the terms of payments; provided that no such modification or amendment shall, except upon the consent of the Holders of all Bonds then outstanding affected thereby, reduce the amount or amounts required to be credited to the Debt Service Subaccount or Common Reserve Subaccount or any Separate Series Reserve Subaccount or their respective successor.

The proof of the giving of any consent of any Holder required and of the holding of Bonds for the purpose of giving consents shall be made in accordance with the Bond Resolution. It shall not be necessary that the consents of the Holders of the Bonds approve the particular form of wording of the proposed amendment or supplement or of the Supplemental Resolution affecting such amendment or supplement, but it shall be sufficient if such consents approve the substance of the proposed amendment or supplement. A record, consisting of the papers required by the Bond Resolution, shall be proof of the matters therein stated until the contrary is proved. No action or proceeding to set aside or invalidate such Supplemental Resolution or any of the proceedings for its adoption shall be instituted or maintained unless such action or proceeding is commenced within 60 days after the publication and mailing of the notice required by the Bond Resolution.

The City and County shall furnish a notice of each amendment or supplement and a copy of the Supplemental Resolution effecting such amendment or supplement to each rating agency which has rated the Bonds at least 15 days prior to the effective day of the Supplemental Resolution.

Discharge of Liens and Pledges; Bonds No Longer Outstanding and Deemed to be Paid

Except as otherwise provided in the Bond Resolution with regard to Option Bonds, the obligations of the City and County under the Bond Resolution and the liens, pledges, charges, trusts, covenants and agreements of the City and County made or provided for in the Bond Resolution, shall be fully discharged and satisfied as to any Bond and such Bond shall no longer be deemed to be Outstanding under the Bond Resolution:

(i) when such Bond shall have been canceled, or shall have been surrendered for cancellation or is subject to cancellation, or shall have been purchased by or behalf of the City and County from moneys held under the Bond Resolution; or

(ii) as to any Bond not canceled or surrendered for cancellation or subject to cancellation or so purchased, when payment of the principal and redemption price (if any) of such Bond, plus interest on such principal to the due date thereof (whether such due date be by reason of maturity or upon redemption or prepayment, or otherwise) either (a) shall have been made or caused to be made in accordance with the terms thereof, or (b) shall have been provided for by irrevocably depositing with the Paying Agent for such Bond, in trust, and irrevocably appropriating and setting aside exclusively for such payment, either (1) moneys sufficient to make such payment or (2) noncallable Refunded Municipal Obligations or noncallable Investment Securities described in item (i) of the definition of Investment Securities as set forth in the Bond Resolution, maturing as to principal and interest in such amount and at such times as will insure, together with any cash deposit, the availability of sufficient moneys to make such payment, whichever the City and County deems to be in its best interest and as verified by an independent nationally recognized firm of certified public accountants in a report delivered to the City and County and the Director of Budget and Fiscal Services, and all necessary and proper fees, compensation and expenses of the Director of Budget and Fiscal Services and the Paying Agents pertaining to the Bond with respect to which such deposit is made shall have been paid or the payment thereof provided for to the satisfaction of the Director of Budget and Fiscal Services and said Paying Agents.

At such time as a Bond shall be deemed to be no longer Outstanding under the Bond Resolution, as aforesaid, such Bond, except for the purposes of any payment from such moneys, Refunded Municipal Obligations or Investment Securities, shall no longer be secured by or entitled to the benefits of the Bond Resolution.

Notwithstanding the foregoing, in the case of a Bond which is to be redeemed or otherwise prepaid prior to its stated maturity, no deposit under clause (b) of subparagraph (ii) of the second preceding paragraph above shall constitute such payment, discharge and satisfaction as aforesaid until such Bond shall have been irrevocably designated for redemption or prepayment and proper notice of such redemption or prepayment shall have been previously given in accordance with the Bond Resolution or provision shall have been irrevocably made for the giving of such notice.

Any such moneys so deposited with the Paying Agents for the Bonds as provided in the Bond Resolution may at the direction of the City and County also be invested and reinvested in Investment Securities, maturing in the amounts and times as set forth in the Bond Resolution. All income from all Refunded Municipal Obligations and Investment Securities in the hands of the Paying Agents which is not required for the payment of the Bonds and interest and premium thereon with respect to which such moneys shall have been so deposited, shall be paid to the City and County for deposit in the Sewer Fund free and clear of any trust, lien, security interest, pledge or assignment securing any Bonds or otherwise existing under the Bond Resolution.

All moneys, Refunded Municipal Obligations or Investment Securities set aside and held in trust pursuant to the provisions of the Bond Resolution for the payment of Bonds (including interest and premium thereof, if any) shall be applied to and used solely for the payment of the particular Bond (including interest and premium thereof, if any) with respect to which such moneys and Investment Securities have been so set aside in trust.

If moneys, Refunded Municipal Obligations or Investment Securities have been deposited or set aside with a Paying Agent pursuant to the Bond Resolution for the payment of a specific Bond and such Bond is deemed to have been paid and to be no longer Outstanding under the Bond Resolution as provided in the defeasance provisions of the Bond Resolution, but such Bond has not in fact been actually paid in full, no amendment to the defeasance provisions of the Bond Resolution may be made without the consent of the Holder of each Bond affected thereby.

The City and County may at any time surrender to a Paying Agent for a Series of Bonds for cancellation by it any Bonds of such Series previously executed and delivered, which the City and County may have acquired in any manner whatever, and such Bonds upon such surrender for cancellation shall be deemed to be paid and no longer Outstanding under the Bond Resolution.

APPENDIX C

BOOK-ENTRY SYSTEM

The information in this Appendix C concerning The Depository Trust Company (“DTC”), New York, New York, and DTC’s book-entry system has been obtained from DTC and neither the City and County nor the Underwriters takes responsibility for the completeness or accuracy thereof. Neither the City and County nor the Underwriters can or does give any assurances that DTC, DTC Participants or Indirect Participants will distribute to the Beneficial Owners (a) payments of interest, principal or premium, if any, with respect to the Series 2019 Bonds, (b) certificates representing ownership interest in or other confirmation or ownership interest in the Series 2019 Bonds, or (c) redemption or other notices sent to DTC or Cede & Co., its nominee, as the registered owner of the Series 2019 Bonds, or that they will so do on a timely basis, or that DTC, DTC Participants or DTC Indirect Participants will act in the manner described in this Appendix. The current “Rules” applicable to DTC are on file with the Securities and Exchange Commission and the current “Procedures” of DTC to be followed in dealing with DTC Participants are on file with DTC.

The Depository Trust Company (“DTC”), New York, NY, will act as securities depository for the Series 2019 Bonds. The Series 2019 Bonds will be issued as fully-registered securities registered in the name of Cede & Co. (DTC’s partnership nominee) or such other name as may be requested by an authorized representative of DTC. One fully-registered security certificate will be issued for each maturity of each series of the Series 2019 Bonds, each in the aggregate principal amount of such maturity, and will be deposited with DTC. If, however, the aggregate principal amount of any series and maturity exceeds \$500 million, one certificate will be issued with respect to each \$500 million of principal amount, and an additional certificate will be issued with respect to any remaining principal amount of such series and maturity.

DTC and Its Participants. DTC, the world’s largest securities depository is a limited-purpose trust company organized under the New York Banking Law, a “banking organization” within the meaning of the New York Banking Law, a member of the Federal Reserve System, a “clearing corporation” within the meaning of the New York Uniform Commercial Code, and a “clearing agency” registered pursuant to the provisions of Section 17A of the Securities Exchange Act of 1934. DTC holds and provides asset servicing for over 3.5 million issues of U.S. and non-U.S. equity issues, corporate and municipal debt issues, and money market instruments (from over 100 countries) that DTC’s participants (“Direct Participants”) deposit with DTC. DTC also facilitates the post-trade settlement among Direct Participants of sales and other securities transactions in deposited securities, through electronic computerized book-entry transfers and pledges between Direct Participants’ accounts. This eliminates the need for physical movement of securities certificates. Direct Participants include both U.S. and non-U.S. securities brokers and dealers, banks, trust companies, clearing corporations, and certain other organizations. DTC is a wholly-owned subsidiary of The Depository Trust & Clearing Corporation (“DTCC”). DTCC is the holding company for DTC, National Securities Clearing Corporation and Fixed Income Clearing Corporation, all of which are registered clearing agencies. DTCC is owned by the users of its regulated subsidiaries. Access to the DTC system is also available to others such as both U.S. and non-U.S. securities brokers and dealers, banks, trust companies, and clearing corporations that clear through or maintain a custodial relationship with a Direct Participant, either directly or indirectly (“Indirect Participants”). DTC has a Standard & Poor’s rating of AA+. The DTC Rules applicable to its Participants are on file with the Securities and Exchange Commission. More information about DTC can be found at www.dtcc.com and www.dtc.org.

Purchase of Ownership Interest. Purchases of the Series 2019 Bonds under the DTC system must be made by or through Direct Participants, which will receive a credit for the Series 2019 Bonds on DTC’s records. The ownership interest of each actual purchaser of each Security (“Beneficial Owner”) is in turn to be recorded on the Direct and Indirect Participants’ records. Beneficial Owners will not receive written confirmation from DTC of their purchase. Beneficial Owners are, however, expected to receive written confirmations providing details of the transaction, as well as periodic statements of their holdings, from the Direct or Indirect Participant through which the Beneficial Owner entered into the transaction. Transfers of ownership interests in the Series 2019 Bonds are to be accomplished by entries made on the books of Direct and Indirect Participants acting on behalf of Beneficial Owners. Beneficial Owners will not receive certificates representing their ownership interests in the Series 2019 Bonds, except in the event that use of the book-entry system for the Series 2019 Bonds is discontinued.

To facilitate subsequent transfers, all Series 2019 Bonds deposited by Direct Participants with DTC are registered in the name of DTC's partnership nominee, Cede & Co., or such other name as may be requested by an authorized representative of DTC. The deposit of the Series 2019 Bonds with DTC and their registration in the name of Cede & Co. or such other DTC nominee do not affect any change in beneficial ownership. DTC has no knowledge of the actual Beneficial Owners of the Series 2019 Bonds; DTC's records reflect only the identity of the Direct Participants to whose accounts such Series 2019 Bonds are credited, which may or may not be the Beneficial Owners. The Direct and Indirect Participants will remain responsible for keeping account of their holdings on behalf of their customers.

Notices. Conveyance of notices and other communications by DTC to Direct Participants, by Direct Participants to Indirect Participants, and by Direct Participants and Indirect Participants to Beneficial Owners will be governed by arrangements among them, subject to any statutory or regulatory requirements as may be in effect from time to time.

Redemption notices shall be sent to DTC. If less than all of the Series 2019 Bonds within a series and maturity are being redeemed, DTC's practice is to determine by lot the amount of the interest of each Direct Participant in such series and maturity to be redeemed.

Neither DTC nor Cede & Co. (nor any other DTC nominee) will consent or vote with respect to the Series 2019 Bonds unless authorized by a Direct Participant in accordance with DTC's MMI Procedures. Under its usual procedures, DTC mails an Omnibus Proxy to the City and County as soon as possible after the record date. The Omnibus Proxy assigns Cede & Co.'s consenting or voting rights to those Direct Participants to whose accounts the Series 2019 Bonds are credited on the record date (identified in a listing attached to the Omnibus Proxy).

Payments. Principal, redemption proceeds, distributions, and interest payments on the Series 2019 Bonds will be made to Cede & Co., or such other nominee as may be requested by an authorized representative of DTC. DTC's practice is to credit Direct Participants' accounts upon DTC's receipt of funds and corresponding detail information from the City and County or Paying Agent, on payable date in accordance with their respective holdings shown on DTC's records. Payments by Participants to Beneficial Owners will be governed by standing instructions and customary practices, as is the case with securities held for the accounts of customers in bearer form or registered in "street name," and will be the responsibility of such Participant and not of DTC, Paying Agent or the City and County, subject to any statutory or regulatory requirements as may be in effect from time to time. Payment of redemption proceeds, distributions, and dividend payments to Cede & Co. (or such other nominee as may be requested by an authorized representative of DTC) is the responsibility of the City and County or Paying Agent, disbursement of such payments to Direct Participants will be the responsibility of DTC, and disbursement of such payments to the Beneficial Owners will be the responsibility of Direct and Indirect Participants.

Discontinuance of Book-Entry System. DTC may discontinue providing its services as depository with respect to the Series 2019 Bonds at any time by giving reasonable notice to the City and County or the Paying Agent. Under such circumstances, in the event that a successor depository is not obtained, Security certificates are required to be printed and delivered.

The City and County may decide to discontinue use of the system of book-entry-only transfers through DTC (or a successor securities depository). In that event, Bond certificates will be printed and delivered.

APPENDIX D

PROPOSED FORM OF CONTINUING DISCLOSURE CERTIFICATE

This Continuing Disclosure Certificate (the “Disclosure Certificate”) is executed and delivered by the City and County of Honolulu, Hawaii (the “City and County”) in connection with the issuance of \$216,565,000 Wastewater System Revenue Bonds Senior Series 2019A, \$174,710,000 Wastewater System Revenue Bonds Senior Series 2019B, \$20,810,000 Wastewater System Revenue Bonds Senior Series 2019C, \$22,830,000 Wastewater System Revenue Bonds Junior Series 2019A, and \$61,995,000 Wastewater System Revenue Bonds Junior Series 2019B (collectively, the “Bonds”). The Bonds are being issued pursuant to Chapter 49, Hawaii Revised Statutes, and the Revised Charter of the City and County of Honolulu, as amended (collectively, the “Act”), and the proceedings of the City Council, including Resolution No. 98-193, CD1, as amended and supplemented by Resolution No. 06-266, CD1 and Resolution No. 10-283 (**First Bond Resolution**), and Resolution No. 98-195, CD1, as amended and supplemented by Resolution No. 06-265, CD1 and Resolution No. 10-284 (**Second Bond Resolution**), and the applicable Series Resolutions relating to the Bonds, and Certificates of the Director of Budget and Fiscal Services of the City and County, acknowledged and agreed to by the Director of Environmental Services of the City and County both dated October 23, 2019 (collectively the “Certificate”). The City and County covenants and agrees as follows:

Section 1. **Purpose of the Disclosure Certificate.** This Disclosure Certificate is being executed and delivered by the City and County for the benefit of the holders and Beneficial Owners of the Bonds and in order to assist the Participating Underwriters in complying with Securities and Exchange Commission Rule 15c2-12(b)(5) (the “Rule”).

Section 2. **Definitions.** In addition to the definitions set forth in the Certificate, which apply to any capitalized term used in this Disclosure Certificate unless otherwise defined in this Section, the following capitalized terms shall have the following meanings:

“*Annual Report*” means any Annual Report provided by the City and County pursuant to, and as described in, Sections 3 and 4 of this Disclosure Certificate.

“*Beneficial Owner*” means any person which (a) has or shares the power, directly or indirectly, to vote or consent with respect to, to make investment decisions concerning the ownership of, or to dispose of ownership of, any Bonds (including persons holding Bonds through nominees, depositories or other intermediaries), or (b) is treated as the owner of any Bonds for federal income tax purposes.

“*Department*” means the Department of Environmental Services of the City and County.

“*Dissemination Agent*” means the City and County, or any successor Dissemination Agent designated in writing by the City and County and which has filed with the City and County a written acceptance of such designation.

“*Financial Obligation*” means, for purposes of the Listed Events set out in Section 5(a) or (b) of this Disclosure Certificate, a (i) debt obligation; (ii) derivative instrument entered into in connection with, or pledged as security or a source of payment for, an existing or planned debt obligation; or (iii) guarantee of (i) or (ii). The term “Financial Obligation” shall not include municipal securities (as defined in the Securities Exchange Act of 1934, as amended) as to which a final official statement (as defined in the Rule) has been provided to the MSRB consistent with the Rule.

“*Listed Events*” means any of the events listed in Section 5(a) or (b) of this Disclosure Certificate.

“*MSRB*” means the Municipal Securities Rulemaking Board or any other entity designated or authorized by the Securities and Exchange Commission to receive reports pursuant to the Rule. Until otherwise designated by the MSRB or the Securities and Exchange Commission, filings with the MSRB are to be made through the Electronic Municipal Market Access (EMMA) website of the MSRB, currently located at <http://emma.msrb.org>.

“*Official Statement*” shall mean the Official Statement, dated October 23, 2019, prepared and distributed in connection with the initial sale of the Bonds.

“*Participating Underwriters*” means any of the original underwriters of the Bonds required to comply with the Rule in connection with the offering of the Bonds.

“*Rule*” means Rule 15c2-12(b)(5) adopted by the Securities and Exchange Commission under the Securities Exchange Act of 1934, as the same may be amended from time to time.

Section 3. ***Provision of Annual Reports.***

(a) The City and County shall, or shall cause the Dissemination Agent to, not later than nine months after the end of the City and County’s Fiscal Year (presently June 30), commencing with the report for the Fiscal Year ended June 30, 2019, provide to the MSRB an Annual Report that is consistent with the requirements of Section 4 of this Disclosure Certificate. The Annual Report must be submitted in electronic format, accompanied by such identifying information as is prescribed by the MSRB, and may cross-reference other information as provided in Section 4 of this Disclosure Certificate. If the City and County’s fiscal year changes, the City and County, upon becoming aware of such change, shall give notice of such change in the same manner as for a Listed Event under Section 5(c).

(b) In a timely manner prior to the date set forth in subsection (a) above, the City and County shall provide the Annual Report to the Dissemination Agent (if other than the City and County). If the City and County is unable to provide to the MSRB an Annual Report by the date required in subsection (a), the City and County shall send a notice to the MSRB in substantially the form attached as Exhibit A. The audited financial statements of the Department may be submitted separately from the balance of the Annual Report and later than the date required above for the filing of the Annual Report if they are not available by that date.

(c) The Dissemination Agent shall (if the Dissemination Agent is other than the City and County) file a report with the City and County certifying that the Annual Report has been provided pursuant to this Disclosure Certificate, stating the date it was provided to the MSRB.

Section 4. ***Content of Annual Reports.***

(a) The Annual Report shall contain or incorporate by reference the following information:

(i) Audited financial statements of the Department for the prior fiscal year, prepared in accordance with generally accepted accounting principles as promulgated to apply to governmental entities from time to time by the Governmental Accounting Standards Board. If the Department’s audited financial statements are not available by the time the Annual Report is required to be provided to the MSRB pursuant to Section 3(a), the Annual Report shall contain unaudited financial statements in a format similar to the financial statements contained in the Official Statement relating to the Bonds, and the audited financial statements shall be provided to the MSRB in the same manner as the Annual Report when they become available;

(ii) Budgeted revenues and expenditures of the Department for the current fiscal year;

(iii) To the extent not provided in the audited financial statements, historical information of the type shown in Tables 23 and 24 of the Official Statement, entitled “Department of Environmental Services Sewer Fund Enterprise Fund Statement of Revenues, Expenses and Charges in Retained Earnings (Deficit)” and “Department of Environmental Services Sewer Fund Enterprise Fund Balance Sheet,” respectively; and

(iv) To the extent not provided in the audited financial statements, historical information of the type shown in Tables 21 and 22 of the Official Statement, entitled “Outstanding Wastewater Revenue Bonds” and “Revenue Bond Debt Service Requirements,” respectively.

(b) Information contained in an Annual Report for any fiscal year containing any modified operating data or financial information for such fiscal year shall explain, in narrative form, the reasons for such modification and the effect of such modification on the Annual Report being provided for such fiscal year. If a change in accounting principles is included in any such modification, such Annual Report shall present a comparison between the financial statements or information prepared on the basis of modified accounting principles and those prepared on the basis of former accounting principles.

Any or all of the items above may be included by specific reference to other documents, including official statements of debt issues of the City and County or related public entities, which have been made available to the public on the MSRB's website. The City and County shall clearly identify each such other document so included by reference.

If the inclusion or format of the information referenced above is changed in any future official statement, thereafter the Annual Report shall instead contain or include by reference information of the type included in that official statement as so changed or if different the type of equivalent information included in the City and County's most recent official statement.

Section 5. ***Reporting of Significant Events.***

(a) Pursuant to the provisions of this Section 5, the City and County shall give, or cause to be given, notice of the occurrence of any of the following events with respect to the Bonds, not later than ten New York securities market business days after the occurrence of the event:

- i. Principal and interest payment delinquencies;
- ii. Non-payment related defaults, if material;
- iii. Unscheduled draws on debt service reserves reflecting financial difficulties;
- iv. Unscheduled draws on credit enhancements reflecting financial difficulties;
- v. Substitution of credit or liquidity providers, or their failure to perform;
- vi. Adverse tax opinions, the issuance by the Internal Revenue Service of proposed or final determination of taxability. Notices of Proposed Issue (IRS Form 5701 TEB)) or other material notices or determinations with respect to the tax status of the Bonds, or other material events affecting the tax status of the Bonds;
- vii. Modifications to rights of Bondholders, if material;
- viii. Optional or unscheduled Bond calls, if material, and tender offers;
- ix. Defeasances;
- x. Release, substitution, or sale of property securing repayment of the Bonds, if material;
- xi. Rating changes;
- xii. Bankruptcy, insolvency, receivership or similar event of the City and County;
- xiii. The consummation of a merger, consolidation, or acquisition involving the City and County or the sale of all or substantially all of the assets of the City and County, other than in the ordinary course of business, the entry into a definitive agreement to undertake such an action or the termination of a definitive agreement relating to any such actions, other than pursuant to its terms, if material;
- xiv. Appointment of a successor or additional trustee or the change of name of a trustee, if material;
- xv. Incurrence of a financial obligation of the City and County, if material, or agreement to covenants, events of default, remedies, priority rights, or other similar terms of a financial obligation of the City and County, any of which affect Bond holders, if material; or

- xvi. Default, event of acceleration, termination event, modification of terms, or other similar events under the terms of a financial obligation of the City and County, any of which reflect financial difficulties.

For the purposes of the event identified in subparagraph (xii) above, the event is considered to occur when any of the following occur: the appointment of a receiver, fiscal agent or similar officer for an obligated person in a proceeding under the U.S. Bankruptcy Code or in any other proceeding under state or federal law in which a court or governmental authority has assumed jurisdiction over substantially all of the assets or business of the obligated person, or if such jurisdiction has been assumed by leaving the existing governmental body and officials or officers in possession but subject to the supervision and orders of a court or governmental authority, or the entry of an order confirming a plan of reorganization, arrangement or liquidation by a court or governmental authority having supervision or jurisdiction over substantially all of the assets or business of the obligated person.

(b) The City and County shall give, or cause to be given, in a timely manner, notice of a failure to provide the annual financial information on or before the date specified in Section 4, as provided in Section 4.

(c) Whenever the City and County obtains knowledge of the occurrence of a Listed Event described in Section 5(b), the City and County shall determine if such event would be material under applicable federal securities laws.

(d) If the City and County learns of the occurrence of a Listed Event described in Section 5(a), or determines that a Listed Event described in Section 5(b) would be material under applicable federal securities laws, the City and County shall within ten (10) business days of occurrence file a notice of such occurrence with the MSRB in electronic format, accompanied by such identifying information as is prescribed by the MSRB. Notwithstanding the foregoing, notice of the Listed Event described in subsections (a)(vii) or (b)(iii) need not be given under this subsection any earlier than the notice (if any) of the underlying event is given to Holders of affected Bonds pursuant to the Resolution.

(e) The City and County intends to comply with the Listed Events described in Section 5(a)(xv) and Section 5(a)(xv), and the definition of “Financial Obligation” in Section 1, with reference to the Rule, any other applicable federal securities laws and the guidance provided by the Commission in Release No. 34-83885 dated August 20, 2018 (the “2018 Release”), and any further amendments or written guidance provided by the Commission or its staff with respect the amendments to the Rule effected by the 2018 Release.

Section 6. **Termination of Reporting Obligation.** The City and County’s obligations under this Disclosure Certificate shall terminate upon the legal defeasance, prior redemption or payment of amounts fully sufficient to pay and discharge the Bonds, or upon delivery to the City and County or the Dissemination Agent (if other than the City and County) of an opinion of nationally recognized bond counsel to the effect that continuing disclosure is no longer required. If such termination occurs prior to the final maturity of the Bonds, the City and County shall give notice of such termination in the same manner as for a Listed Event under Section 5(c).

Section 7. **Dissemination Agent.** From time to time, the City and County may appoint or engage a Dissemination Agent to assist it in carrying out its obligations under this Disclosure Certificate, and may discharge any such Agent, with or without appointing a successor Dissemination Agent. If at any time there is not any other designated Dissemination Agent, the City and County shall be the Dissemination Agent. The initial Dissemination Agent shall be the City and County. The sole remedy of any party against the Dissemination Agent shall be nonmonetary and specific performance. The Dissemination Agent shall not be responsible for the form or content of any Annual Report, notice of Listed Event, or other document furnished to the Dissemination Agent by the City and County. The Dissemination Agent shall receive reasonable compensation for its services provided hereunder. The Dissemination Agent may resign at any time by providing at least 60 days’ notice to the City and County.

Section 8. **Amendment Waiver.** Notwithstanding any other provision of this Disclosure Certificate, the City and County may amend this Disclosure Certificate, and any provision of this Disclosure Certificate may be waived, provided that all of the following conditions are satisfied:

(a) If the amendment or waiver relates to the provisions of Sections 3(a), 4, or 5(a), it may only be made in connection with a change in circumstances that arises from a change in legal (including regulatory)

requirements, change in law (including rules or regulations) or in interpretations thereof, or change in the identity, nature or status of an obligated person with respect to the Bonds, or the type of business conducted;

(b) The undertaking, as amended or taking into account such waiver, would, in the opinion of nationally recognized bond counsel, have complied with the requirements of the Rule at the time of the original issuance of the Bonds, after taking into account any amendments or interpretations of the Rule, as well as any change in circumstances; and

(c) The amendment or waiver either (i) is approved by the Holders of the Bonds in the same manner as provided in the Certificate for amendments to the Certificate with the consent of Holders, or (ii) does not, in the opinion of the City and County, materially impair the interests of the Holders or Beneficial Owners of the Bonds.

In the event of any amendment or waiver of a provision of this Disclosure Certificate, the City and County shall describe such amendment in the next Annual Report, and shall include, as applicable, a narrative explanation of the reason for the amendment or waiver and its impact on the type (or in the case of a change of accounting principles, on the presentation) of financial information or operating data being presented by the City and County. In addition, if the amendment relates to the accounting principles to be followed in preparing financial statements, (i) notice of such change shall be given in the same manner as for a Listed Event under Section 5(c), and (ii) the Annual Report for the year in which the change is made should present a comparison (in narrative form and also, if feasible, in quantitative form) between the financial statements as prepared on the basis of the new accounting principles and those prepared on the basis of the former accounting principles.

Section 9. ***Additional Information.*** Nothing in this Disclosure Certificate shall be deemed to prevent the City and County from disseminating any other information, using the means of dissemination set forth in this Disclosure Certificate or any other means of communication, or including any other information in any Annual Report or notice of occurrence of a Listed Event, in addition to that which is required by this Disclosure Certificate. If the City and County chooses to include any information in any Annual Report or notice of occurrence of a Listed Event in addition to that which is specifically required by this Disclosure Certificate, the City and County shall have no obligation under this Disclosure Certificate to update such information or include it in any future Annual Report or notice of occurrence of a Listed Event.

Section 10. ***Default.*** In the event of a failure of the City and County to comply with any provision of this Disclosure Certificate, any Holder or Beneficial Owner of the Bonds may take such actions as may be necessary and appropriate, including seeking mandate or specific performance by court order, to cause the City and County or the Dissemination Agent (if other than the City and County), as the case may be, to comply with its obligations under this Disclosure Certificate. A default under this Disclosure Certificate shall not be deemed an Event of Default under the Certificate, and the sole remedy under this Disclosure Certificate in the event of any failure of the City and County or the Dissemination Agent to comply with this Disclosure Certificate shall be an action to compel performance.

Section 11. ***Duties, Immunities and Liabilities of Dissemination Agent.*** The Dissemination Agent shall have only such duties as are specifically set forth in this Disclosure Agreement, and the City and County agrees to indemnify and save the Dissemination Agent, its officers, directors, employees and agents, harmless against any loss, expense and liabilities which it may incur arising out of or in the exercise or performance of its powers and duties hereunder, including the costs and expenses (including attorneys' fees) of defending against any claim of liability, but excluding liabilities due to the Dissemination Agent's gross negligence or willful misconduct. The obligations of the City and County under this Section shall survive resignation or removal of the Dissemination Agent and payment of the Bonds.

Section 12. ***Beneficiaries.*** This Disclosure Certificate shall inure solely to the benefit of the City and County, the Dissemination Agent, the Participating Underwriters and holders and beneficial owners from time to time of the Bonds, and shall create no rights in any other person or entity.

Date: November 6, 2019

Nelson H. Koyanagi, Jr.
Director of Budget and Fiscal Services
City and County of Honolulu

The above and foregoing certificate is hereby approved as to form and legality this __ day of _____, 2019.

Paul S. Aoki
Acting Corporation Counsel
City and County of Honolulu

EXHIBIT A

**FORM OF NOTICE TO THE MUNICIPAL SECURITIES RULEMAKING BOARD OF FAILURE
TO FILE ANNUAL REPORT**

Name of Issuer: City and County of Honolulu, Hawaii
Name of Bond Issue: Wastewater System Revenue Bonds
(First Bond Resolution) Senior Series 2019A, Senior Series 2019B, Senior Series
2019C, (Second Bond Resolution) Junior Series 2019A and Junior Series 2019B
Date of Issuance:

NOTICE IS HEREBY GIVEN that the City and County of Honolulu, Hawaii (the “City and County”) has not provided an Annual Report with respect to the above-named Bonds as required by Section 3 of the Continuing Disclosure Certificate, dated November 6, 2019, executed by the City and County for the benefit of the holders and beneficial owners of the above-referenced Bonds. The City and County anticipates that the Annual Report will be filed by _____.

Dated:

CITY AND COUNTY OF HONOLULU, HAWAII

By: _____
Authorized Signatory

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APPENDIX E

PROPOSED FORMS OF OPINIONS OF BOND COUNSEL

November 6, 2019

City and County of Honolulu
Honolulu, Hawaii

Re: City and County of Honolulu
Wastewater System Revenue Bonds
(First Bond Resolution) Senior Series 2019A,
Senior Series 2019B and Senior Series 2019C (Taxable)
(Final Opinion)

Ladies and Gentlemen:

We have acted as bond counsel to the City and County of Honolulu (the “City and County”) in connection with the issuance of \$216,565,000 aggregate principal amount of its Wastewater System Revenue Bonds (First Bond Resolution) Senior Series 2019A (the “Series 2019A Bonds”), \$174,710,000 aggregate principal amount of its Wastewater System Revenue Bonds (First Bond Resolution) Senior Series 2019B (the “Series 2019B Bonds”) and \$20,810,000 aggregate principal amount of its Wastewater System Revenues Bonds (First Bond Resolution) Senior Series 2019C (Taxable) (the “Series 2019C Bonds” and, together with the Series 2019A Bonds and the Series 2019B Bonds, the “Bonds”), pursuant to a First Bond Resolution and a Series Resolution of the City and County (collectively, the “Resolution”), and a Series Certificate of the Director of Budget and Fiscal Services of the City and County (the “Certificate”). Terms not otherwise defined herein shall have the meanings assigned to them in the Certificate.

In such connection, we have reviewed the Resolution, the Certificate, the Tax Certificate of the City and County, dated the date hereof (the “Tax Certificate”), an opinion of the Corporation Counsel of the City and County, certificates of the City and County and others, and such other documents, opinions and matters to the extent we deemed necessary to render the opinions set forth herein.

The opinions expressed herein are based on an analysis of existing laws, regulations, rulings and court decisions and cover certain matters not directly addressed by such authorities. Such opinions may be affected by actions taken or omitted or events occurring after the date hereof. We have not undertaken to determine, or to inform any person, whether any such actions are taken or omitted or events do occur or any other matters come to our attention after the date hereof. Accordingly, this letter speaks only as of its date and is not intended to, and may not, be relied upon or otherwise used in connection with any such actions, events or matters. We disclaim any obligation to update this letter. We have assumed the genuineness of all documents and signatures presented to us (whether as originals or as copies) and the due and legal execution and delivery thereof by, and validity against, any parties other than the City and County. We have assumed, without undertaking to verify, the accuracy of the factual matters represented, warranted or certified in the documents, and of the legal conclusions contained in the opinions, referred to in the second paragraph hereof. Furthermore, we have assumed compliance with all covenants and agreements contained in the Resolution, the Certificate and the Tax Certificate, including (without limitation) covenants and agreements compliance with which is necessary to assure that future actions, omissions or events will not cause interest on the Series 2019A Bonds and the Series 2019B Bonds to be

included in gross income for federal income tax purposes. We call attention to the fact that the rights and obligations under the Bonds, the Resolution, the Certificate and the Tax Certificate and their enforceability may be subject to bankruptcy, insolvency, receivership, reorganization, arrangement, fraudulent conveyance, moratorium and other laws relating to or affecting creditors' rights, to the application of equitable principles, to the exercise of judicial discretion in appropriate cases, and to the limitations on legal remedies against counties in the State of Hawaii. We express no opinion with respect to any indemnification, contribution, liquidated damages, penalty (including any remedy deemed to constitute a penalty), right of set-off, arbitration, choice of law, choice of forum, choice of venue, non-exclusivity of remedies, waiver or severability provisions contained in the foregoing documents, nor do we express any opinion with respect to the state or quality of title to or interest in any assets described in or as subject to the lien of the Resolution or the accuracy or sufficiency of the description contained therein of, or the remedies available to enforce liens on, any such assets. Our services did not include financial or other non-legal advice. Finally, we undertake no responsibility for the accuracy, completeness or fairness of the Official Statement or other offering material relating to the Bonds and express no opinion with respect thereto.

Based on and subject to the foregoing, and in reliance thereon, as of the date hereof, we are of the following opinions:

1. The Bonds constitute valid and binding special obligations of the City and County.
2. The Bonds are payable solely from and are secured by the Net Revenues and other funds pledged to the payment thereof pursuant to the Resolution, subject to the provisions of the Resolution permitting the application thereof for the purposes and on the terms and conditions set forth in the Resolution.
3. The Resolution has been duly adopted and constitutes the valid and binding obligation of the City and County, and the Certificate has been duly executed and delivered and constitutes the valid and binding obligation of the City and County.
4. Interest on the Series 2019A Bonds and the Series 2019B Bonds is excluded from gross income for federal income tax purposes under Section 103 of the Internal Revenue Code of 1986, and the Bonds and the income therefrom are exempt from all taxation by the State of Hawaii or any county or other political subdivision thereof, except inheritance, transfer, estate and certain franchise taxes. Interest on the Series 2019A Bonds and the Series 2019B Bonds is not a specific preference item for purposes of the federal alternative minimum tax. Interest on the Series 2019C Bonds is not excludable from gross income for federal income tax purposes under Section 103 of the Internal Revenue Code of 1986. We express no opinion regarding other tax consequences related to the ownership or disposition of, or the amount, accrual or receipt of interest on, the Bonds.

Faithfully yours,

ORRICK, HERRINGTON & SUTCLIFFE LLP

per

November 6, 2019

City and County of Honolulu
Honolulu, Hawaii

Re: City and County of Honolulu
Wastewater System Revenue Bonds (Second Bond Resolution)
Junior Series 2019A and Junior Series 2019B (Taxable)
(Final Opinion)

Ladies and Gentlemen:

We have acted as bond counsel to the City and County of Honolulu (the “City and County”) in connection with the issuance of \$22,830,000 aggregate principal amount of its Wastewater System Revenue Bonds (Second Bond Resolution) Junior Series 2019A (Taxable) (the “Series 2019A Bonds”) and \$61,995,000 aggregate principal amount of its Wastewater System Revenue Bonds (Second Bond Resolution) Junior Series 2019B (Taxable) (the “Series 2019B Bonds” and, together with the Series 2019A Bonds, the “Bonds”), pursuant to a Second Bond Resolution and a Series Resolution of the City and County (collectively, the “Resolution”), and a Series Certificate of the Director of Budget and Fiscal Services of the City and County (the “Certificate”). Terms not otherwise defined herein shall have the meanings assigned to them in the Certificate.

In such connection, we have reviewed the Resolution, the Certificate, the Tax Certificate of the City and County, dated the date hereof (the “Tax Certificate”), an opinion of the Corporation Counsel of the City and County, certificates of the City and County and others, and such other documents, opinions and matters to the extent we deemed necessary to render the opinions set forth herein.

The opinions expressed herein are based on an analysis of existing laws, regulations, rulings and court decisions and cover certain matters not directly addressed by such authorities. Such opinions may be affected by actions taken or omitted or events occurring after the date hereof. We have not undertaken to determine, or to inform any person, whether any such actions are taken or omitted or events do occur or any other matters come to our attention after the date hereof. Accordingly, this letter speaks only as of its date and is not intended to, and may not, be relied upon or otherwise used in connection with any such actions, events or matters. We disclaim any obligation to update this letter. We have assumed the genuineness of all documents and signatures presented to us (whether as originals or as copies) and the due and legal execution and delivery thereof by, and validity against, any parties other than the City and County. We have assumed, without undertaking to verify, the accuracy of the factual matters represented, warranted or certified in the documents, and of the legal conclusions contained in the opinions, referred to in the second paragraph hereof. Furthermore, we have assumed compliance with all covenants and agreements contained in the Resolution, the Certificate and the Tax Certificate, including (without limitation) covenants and agreements compliance with which is necessary to assure that future actions, omissions or events will not cause interest on the Series 2019A Bonds to be included in gross income for federal income tax purposes. We call attention to the fact that the rights and obligations under the Bonds, the Resolution, the Certificate and the Tax Certificate and their enforceability may be subject to bankruptcy, insolvency, receivership, reorganization, arrangement, fraudulent conveyance, moratorium and other laws relating to or affecting creditors’ rights, to the application of equitable principles, to the exercise of judicial discretion in appropriate cases, and to the limitations on legal remedies against counties in the State of Hawaii. We express no opinion with respect to any indemnification, contribution,

liquidated damages, penalty (including any remedy deemed to constitute a penalty), right of set-off, arbitration, choice of law, choice of forum, choice of venue, non-exclusivity of remedies, waiver or severability provisions contained in the foregoing documents, nor do we express any opinion with respect to the state or quality of title to or interest in any assets described in or as subject to the lien of the Resolution or the accuracy or sufficiency of the description contained therein of, or the remedies available to enforce liens on, any such assets. Our services did not include financial or other non-legal advice. Finally, we undertake no responsibility for the accuracy, completeness or fairness of the Official Statement or other offering material relating to the Bonds and express no opinion with respect thereto.

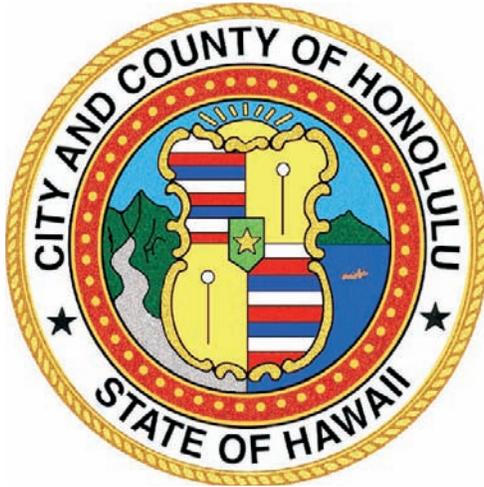
Based on and subject to the foregoing, and in reliance thereon, as of the date hereof, we are of the following opinions:

1. The Bonds constitute valid and binding special obligations of the City and County.
2. The Bonds are payable solely from and are secured by the Net Revenues and other funds pledged to the payment thereof pursuant to the Resolution, subject to the provisions of the Resolution permitting the application thereof for the purposes and on the terms and conditions set forth in the Resolution, including priority provided for payment and security of the City and County's Wastewater Revenue Bonds (First Bond Resolution), Senior Series.
3. The Resolution has been duly adopted and constitutes the valid and binding obligation of the City and County, and the Certificate has been duly executed and delivered and constitutes the valid and binding obligation of the City and County.
4. Interest on the Series 2019A Bonds is excluded from gross income for federal income tax purposes under Section 103 of the Internal Revenue Code of 1986, and the Bonds and the income therefrom are exempt from all taxation by the State of Hawaii or any county or other political subdivision thereof, except inheritance, transfer, estate and certain franchise taxes. Interest on the Series 2019A Bonds is not a specific preference item for purposes of the federal alternative minimum tax. Interest on the Series 2019B Bonds is not excludable from gross income for federal income tax purposes under Section 103 of the Internal Revenue Code of 1986. We express no opinion regarding other tax consequences related to the ownership or disposition of, or the amount, accrual or receipt of interest on, the Bonds.

Faithfully yours,

ORRICK, HERRINGTON & SUTCLIFFE LLP

per



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