



May 1, 2018

To: Finance & Audit Committee  
LIPA Board of Trustees

Re: Quarterly Report on Interest Rate Exchange Agreements  
Quarter Ended March 31, 2018

Dear Finance & Audit Committee Members:

The Long Island Power Authority (“the Authority”, “LIPA”) is filing this report pursuant to reporting requirements outlined in the Comprehensive Guidelines for the Use of Interest Rate Exchange Agreements, as approved by the Board of Trustees on May 18, 2016.

Description of the Interest Rate Exchange Agreements

LIPA entered into a separate ISDA Master Agreement and Schedule to the Master Agreement (collectively, a “Master Agreement”) with each of the bank counterparties (each individually, a “Counterparty” and collectively, the “Counterparties”) listed in the table below. Each Master Agreement, together with the related confirmation or confirmations, is hereinafter referred to as an “Interest Rate Exchange Agreement”, “IREA” or “Swap”. Details of each IREA are included in the Summary, attached hereto as Appendix A. The notional amounts of each transaction are set forth below:

	Counterparty	Original Notional Amount (000s)	Outstanding Amount (000s)	Effective Date	Termination Date	Type of Swap
1	Wells Fargo Bank, N.A. (WFB)	\$150,000	-	Terminated		
2	Societe Generale, New York Branch (SG)	\$100,000	-	Terminated		
3	UBS AG (UBS)	\$587,225	\$587,225	6/1/2003	12/1/2029	Floating-to-Fixed
4	Merrill Lynch Capital Services, Inc. (MLCS)	\$502,090	\$468,298	7/1/2004	8/15/2033	Basis Swap
5	JPMorgan Chase & Co. (JPM)	\$251,045	\$234,149	7/1/2004	8/15/2033	Basis Swap
6	Citibank, N.A., New York (CB)	\$251,045	\$234,149	7/1/2004	8/15/2033	Basis Swap
7	Morgan Stanley Capital Services LLC (MSCS)	\$110,715	-	Matured		
8	Wells Fargo Bank, N.A. (WFB)	\$200,000	\$200,000	6/29/2015	6/29/2020	Total Return <sup>1</sup>
9	Wells Fargo Bank, N.A. (WFB)	\$175,000	\$175,000	9/15/2016	9/1/2021	Total Return <sup>2</sup>

The estimated total mark-to-market value of the transactions, as of March 29, 2018, is approximately negative \$191 million. The mark-to-market value excludes transaction costs and is calculated at prevailing mid-market rates. Therefore, it represents the hypothetical amount that LIPA would owe to the Counterparties if the transactions were terminated on that date absent transaction costs.

<sup>1</sup>Based on the Authority’s Series 2015A Bonds (MMD FRN Rate), initially purchased by Wells Fargo pursuant to an Agreement Relating to Bonds between the Authority and Wells Fargo.

<sup>2</sup>Based on the Authority’s Series 2016A Bonds (MMD FRN Rate), initially purchased by Wells Fargo pursuant to an Agreement Relating to Bonds between the Authority and Wells Fargo.

## Ratings of Counterparties

*Please note that ratings below are as of March 29, 2018*

Bank Counterparty	Moody's	S&P	Fitch
UBS AG, Stamford Branch	A1	A+	AA-
Merrill Lynch Capital Services, Inc. <sup>1</sup>	A3	A-	A
JPMorgan Chase & Co. <sup>2</sup>	A3	A-	A+
Citibank, N.A., New York	A1	A+	A+
Wells Fargo Bank, N.A.	Aa2	A+	AA-

<sup>1</sup>Ratings reflect the ratings of Bank of America Corp.

<sup>2</sup>The original counterparty was Bear Stearns Capital Markets Inc.

- 1) UBS AG, Stamford Branch is a Swiss bank with ratings of A1/A+/AA-.
- 2) As of October 1, 2013, Bank of America completed the merger of its Merrill Lynch & Co., Inc. subsidiary into Bank of America Corporation ("BAC"). In connection with this merger, Bank of America Corp. assumed all of Merrill Lynch & Co., Inc.'s obligations including those of its subsidiaries. Merrill Lynch Capital Services, Inc. ("MLCS") is a Delaware corporation and was a subsidiary of Merrill Lynch & Co., Inc., therefore, Bank of America Corp. is the guarantor on the swap with MLCS, and is rated A3/A-/A.
- 3) On May 30, 2008, The Bear Stearns Companies, Inc. ("TBSCI") was acquired by JPMorgan Chase & Co. (JPMC & Co.), a Delaware Corporation rated A3/A-/A+. All payments payable by Bear Stearns Capital Markets, Inc. ("BSCM"), a subsidiary of TBSCI, are guaranteed by JPMC & Co. following the acquisition.
- 4) Citibank, N.A., New York, a National Banking Association, is rated A1/A+/A+.
- 5) Wells Fargo Bank, N.A., a National Banking Association, is rated Aa2/A+/AA-.

## Risk Assessment

Counterparty Risk: This is the risk that a Counterparty (or its guarantor) will default under its agreement. If a counterparty were to default under its agreement when owing a termination payment to LIPA, LIPA may have to pay another entity to assume the position of the defaulting counterparty. Currently, Counterparty Risk for LIPA is limited given that the majority of the termination values of the transactions are negative to LIPA (as of March 29, 2018).

LIPA sought to limit counterparty risk in these transactions by contracting with highly rated counterparties (see “Ratings of Counterparties” above) or requiring guarantees of the counterparty’s obligations under the IREA. LIPA monitors the credit rating and overall financial condition of the Counterparties (or their guarantors) and may exercise its right to assign the agreement to another counterparty, if necessary, to mitigate counterparty risk. LIPA also has the express written option, upon certain specified notice, to optionally terminate Swaps 4 through 6 at any time at market, and Swap 8 and Swap 9 at any time. The unilateral option to terminate is not provided in Swap 3 (UBS); however, Counterparty Risk on this swap is limited as the mark-to-market is negative. Moreover, LIPA has included additional termination provisions in all of its swaps as well as certain collateral posting arrangements, which limit exposure to lower-rated counterparties should the mark-to-market of the swaps become positive.

Termination Risk: Another risk associated with these transactions is the possibility that an agreement could be terminated by a Counterparty with LIPA owing a termination payment to the Counterparty. Only LIPA is entitled to terminate these transactions from time-to-time without cause. As long as LIPA fulfills its obligations under the contracts and does not default under the agreements, the Counterparties do not have the right to terminate these agreements. LIPA believes that termination risk is low because the Counterparties may terminate only upon the occurrence of certain events such as payment defaults, other defaults which remain uncured for 30 days after notice, the bankruptcy or insolvency of LIPA (or similar events), certain downgrades of LIPA’s and its insurer’s, if any, credit rating, or in the case of Swaps 8 and 9, certain events related specifically to the associated bonds. LIPA’s credit rating as of March 29, 2018 was A3/A-/A-, with a positive outlook from S&P’s and stable outlooks from Moody’s and Fitch. LIPA’s insurer on Swaps 3 and 4, Assured Guaranty Municipal Corp. (“AGM”), formerly Financial Security Assurance (“FSA”), was rated A2/AA by Moody’s and S&P as of March 29, 2018. Fitch has, at AGM’s request, withdrawn its rating. Moody’s has a “Stable Outlook” for AGM, and S&P has a “Stable Outlook”.

With respect to Swap 3, an early termination event may occur should the claims-paying ability of AGM be rated below both A2 by Moody’s and A by S&P, and LIPA has not: (a) provided a replacement credit enhancement, (b) maintained a credit rating of at least either A3 by Moody’s or A- by S&P, or (c) negotiated a Credit Support Annex with UBS and provided collateral as required thereunder. Under such an event, the counterparty would have a right to terminate the transaction and LIPA may be required to make up to five annual payments of up to \$35 million for the first four years with the remaining balance due on the fifth year arising from such termination, depending on the market at that time. Additionally, should LIPA redeem any of the underlying bonds and not reassign the swap to other outstanding variable rate debt, the swap would terminate proportionately and be subject to the same deferred payment provisions identified above.

With respect to Swap 4, an early termination event may occur should LIPA be downgraded below either Baa3 by Moody’s or BBB- by S&P, or the claims-paying ability of AGM be rated below either A3 by Moody’s or A- by S&P and LIPA has not: a) provided replacement credit

enhancement (including compliance with collateral posting provisions, which require the posting of the negative mark-to-market in excess of a \$30 million threshold if LIPA's lowest rating from any one of Moody's, S&P or Fitch falls to the Baa3/BBB-/BBB- level, as more fully described in "Collateral Posting" below), or b) provided a substitute swap insurance policy reasonably acceptable to MLCS. Under such an event, the counterparty would have a right to terminate the transaction and LIPA may be required to make a termination payment from such termination, depending on the market at that time.

With respect to Swap 5, an early termination event may occur should LIPA be downgraded below either Baa3 by Moody's or BBB- by S&P.

With respect to Swap 6, an early termination event may occur should LIPA be downgraded by any one of Moody's, S&P or Fitch below Baa3/BBB-/BBB-, or if LIPA is downgraded by any one of Moody's, S&P or Fitch below Baa2/BBB/BBB and within 20 days of receiving notice of such downgrade from the counterparty has not (a) provided a guarantee, letter of credit, surety bond, insurance policy or other credit support document, (b) transferred the Swap to an acceptable counterparty, or (c) executed a credit support annex.

With respect to Swaps 8 and 9 (Total Return Swaps), an early termination event may occur should the rating on the associated bonds (the Authority's Series 2015A Bonds - MMD FRN Rate and Series 2016A Bonds- MMD FRN Rate) be downgraded by any one of Moody's, S&P or Fitch below Baa3/BBB-/BBB-. Unlike Swaps 3-6, the counterparty also has the right to terminate following certain other events related specifically to the associated bonds, such as: if LIPA fails to pay principal or interest on the underlying bonds; if interest on the bonds is no longer deemed tax-exempt; if the bonds are found to be invalid, illegal or unenforceable; or if an event of default occurs under the purchase agreement for the bonds. If a termination event were to occur with respect to LIPA, the counterparty would have a right to terminate the transaction and LIPA would make or receive any payment arising from such termination, depending on the change in market value of the associated bonds. These termination events are similar to the termination events under LIPA's letter of credit and other bank agreements.

Additionally, under the structure of Swaps 8 and 9, upon the swap's maturity, a termination amount will be payable by either LIPA or the counterparty based on the market value of the associated bonds. The bonds are callable at par at the scheduled termination of the swap, and if called, would not result in a termination amount payable by either party.

Collateral Posting: Under some of the swap agreements, LIPA may be required to post collateral to its counterparties in the event the mark-to-market is negative and its ratings fall below certain levels.

Under Swap 4, if LIPA's lowest rating from any one of Moody's, S&P or Fitch falls to the Baa3/BBB-/BBB- level it must post the negative mark-to-market in excess of a \$30 million threshold. A further downgrade from any one of Moody's, S&P or Fitch below the Baa3/BBB-/BBB- level would require LIPA to fully collateralize the mark-to-market in the event the counterparty does not exercise its termination rights under the agreement.

Under Swap 5, LIPA must fully collateralize the mark-to-market if its lowest rating from either Moody's or S&P falls to the Baa3/BBB- level.

As of March 29, 2018, LIPA would be required to post a total of \$4.2 million in collateral upon a downgrade by Moody's, or S&P to the Baa3/BBB- level. Collateral may be posted in the form of cash or eligible securities.

There are currently no collateral posting requirements with respect to Swaps 3 and 6; however, LIPA may be required to execute documentation containing such provisions and post additional collateral upon the occurrence of certain events, as described further in "Termination Risk" above.

Swaps 8 and 9 are not subject to any collateral posting by LIPA.

Basis Risk: The variable interest rate (69.47% of 1-month LIBOR) LIPA receives under Swap 3 may differ from the amount LIPA is required to pay on associated similar amount of variable rate bonds<sup>3</sup>, potentially resulting in net increased payments by LIPA. This is referred to as "Basis Risk." LIPA's variable rate bonds have traded, from time to time, at yields above the variable rates received under Swap 3. LIPA has attempted to mitigate this risk by more closely matching the variable rate payable on its bonds to that received under Swap 3. Specifically, in December 2014, LIPA refunded \$150 million of outstanding variable rate bonds with Floating Rate Notes (FRNs) that bear interest at 70% of LIBOR, plus a fixed spread. Additionally, LIPA refunded \$200 million of outstanding variable rate bonds in June 2015 with MMD FRN bonds. The interest rate payable on these MMD FRN bonds, taking into account payments made and received under Swap 8 (69.4% of LIBOR plus a fixed spread), is closely associated with the floating rate received under Swap 3. Similarly, LIPA refunded \$175 million of outstanding variable rate bonds in September 2016 with MMD FRN bonds. The interest rate payable on these MMD FRN bonds, taking into account payments made and received under Swap 9 (69.4% of LIBOR plus a fixed spread), is closely associated with the floating rate received under Swap 3. In November 2015, LIPA refunded \$149,000,000 of outstanding variable rate bonds with FRNs that bear interest at 70% of LIBOR, plus a fixed spread.

In addition, LIPA has three basis swaps (Swaps 4, 5 and 6) whereby LIPA pays SIFMA and receives 70.5% of 1-Month LIBOR. LIPA also received an upfront amount of \$35 million at the inception of the basis swaps, representing a reduction or savings in interest expense on the associated debt. Between 2008 and 2011, as a result of dislocation of the short-term interest rates, the short-term SIFMA/LIBOR ratio increased compared to the historical averages. This is a form of Basis Risk that resulted in the erosion of savings on these swaps, as the SIFMA rate paid by LIPA exceeded the percentage of LIBOR rate received by LIPA from time to time. From late 2011 to March 2016, the short-term SIFMA/LIBOR ratio decreased to below historical averages, resulting in LIPA receiving positive annualized accruals. As of March 29, 2018, the short-term SIFMA/1-Month LIBOR ratio applicable to these swaps was 83.7%.

The Authority views Basis Risk as a limited form of variable rate exposure, and therefore takes Basis Risk into account when analyzing outstanding interest rate exposure, as shown in Appendix C.

### Interest Rate Exposure

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<sup>3</sup> Series 2016A is assumed to be hedged; however, upon the refunding of Series 2012C by Series 2016A, an equal amount of Swap 3, previously assigned to Series 2012C, was reassigned per the swap documentation to both Series 2015C and GR CP-1 (86.775mm and 88.225mm, respectively).

As of March 29, 2018, LIPA's net floating rate exposure is 0.03% as summarized in Appendix C.

Status of Qualified Independent Representative ("QIR")

The Authority has reviewed and approved the use of QIRs meeting the standards established under the Dodd-Frank Act and contained at present in rulemaking by the Commodity Futures Trading Commission. The Authority's QIRs have previously represented that they meet all applicable standards and as of the date hereof, the Authority is not aware of any material changes to the status of such representations.

/s/ Joseph A. Branca  
Joseph A. Branca  
Chief Financial Officer

## Appendix A

Corresponding Bond Series	2014C, 2015A, 2015C, GR CP	2011A, 2012A, 2012B, 2014A, 2014B			Series 2015A-1, A-2	Series 2016A
Swap Type	Synthetic Fixed	Basis Swap			Total Return	Total Return
Counterparty	UBS AG	Merrill Lynch Capital Services, Inc.	JP Morgan / Bear Stearns Capital Markets, Inc.	Citibank, N.A., New York	Wells Fargo Bank, N.A.	Wells Fargo Bank, N.A.
Original Notional Amount	\$587,225,000	\$502,090,000	\$251,045,000	\$251,045,000	\$200,000,000	\$175,000,000
Outstanding Notional Amount	\$587,225,000	\$468,297,500	\$234,148,750	\$234,148,750	\$200,000,000	\$175,000,000
Effective Date	6/1/2003	7/1/2004	7/1/2004	7/1/2004	6/29/2015	9/15/2016
Termination Date	12/1/2029	8/15/2033	8/15/2033	8/15/2033	6/29/2020	9/1/2021
LIPA Pays	5.12%	SIFMA	SIFMA	SIFMA	69.4% of 1-Month LIBOR + 0.40%	69.4% of 1-Month LIBOR + 0.30%
LIPA Receives	69.47% of 1-Month LIBOR	70.5% of 1-Month LIBOR	70.5% of 1-Month LIBOR	70.5% of 1-Month LIBOR	Bond Rate (MMD Index plus Spread)	Bond Rate (MMD Index plus Spread)
First Counterparty Payment Date	7/1/2003	7/15/2004	7/15/2004	7/15/2004	11/6/2015	11/8/2016
First LIPA Payment Date	7/1/2003	7/15/2004	7/15/2004	7/15/2004	7/1/2015	10/3/2016
Up Front Cash Payment to LIPA	\$82,000,000	\$17,500,000	\$8,750,000	\$8,750,000	-	-
Payments Made by LIPA as of 3/29/2018	(\$445,894,296)	(\$79,124,742)	(\$39,369,887)	(\$39,369,859)	(\$5,133,958)	(\$2,837,534)
Payments Received by LIPA as of 3/29/2018 (excluding upfront payment)	\$90,675,693	\$78,111,123	\$38,855,804	\$38,855,511	\$16,304,646	\$7,143,208
LIPA Accrued Interest as of 3/29/2018	(\$2,421,977)	(\$255,238)	(\$127,619)	(\$127,619)	(\$250,518)	(\$205,106)
Counterparty Accrued Interest as of 3/29/2018	\$539,397	\$251,973	\$125,987	\$125,987	\$2,468,308	\$2,628,549
Mark-to-Market Valuation @ 3/29/2018	(\$180,088,074)	(\$8,446,679)	(\$4,223,340)	(\$4,223,340)	\$2,812,960	\$3,067,617

## APPENDIX B

### Additional Termination Events – Collateral Posting Thresholds

Under the respective Master Agreements, LIPA or its counterparty must post collateral in the event of certain downgrades, as described below:

<b>Transaction</b>	<b>Counterparty</b>	<b>Relating to Counterparty Downgrade</b>	<b>Relating to LIPA Downgrade</b>
1.	Terminated December 10, 2013		
2.	Terminated December 10, 2013		
3.	UBS AG (UBS)	No current collateral posting provisions. LIPA has the right to terminate the swap if UBS fails to maintain rating of A3 (Moody's) or A- (S&P) and fails to execute a Credit Support Annex (or CSA) with LIPA	No current collateral posting provisions. UBS has the right to terminate the swap if:  1 - Swap Insurer (AGM) fails to meet its payment obligations and such failure is continuing pursuant to the Swap Insurance Policy 2 - Insurer ratings fall below A2 (Moody's) and A (S&P) and an event of default has occurred with LIPA as the defaulting party 3 - All the Swap Insurer ratings fall below A2 (Moody's) and A (S&P) and LIPA has not: i) provided a replacement credit enhancement ii) maintained a credit rating of at least A3 (Moody's) or A- (S&P) iii) negotiated a Credit Support Annex with UBS and provided collateral as required thereunder
4.	Merrill Lynch Capital Services, Inc. (MLCS)	Rating of BAC (Guarantor of MLCS) falls below A3 (Moody's), A- (S&P), or A- (Fitch), as set out in CSA. In the event BAC falls below A3 (Moody's) or A- (S&P), LIPA has the right to terminate the swap.	Rating of LIPA falls to Baa3 (Moody's), BBB- (S&P), or BBB- (Fitch) (\$30 million threshold) or below Baa3 (Moody's), BBB- (S&P), or BBB- (Fitch) (\$0 threshold), as set out in CSA (Swap Insurer (AGM) provisions and/or ratings do not affect collateral posting requirements by LIPA). In the event LIPA falls below Baa3 (Moody's) or BBB- (S&P), or in the event AGM falls below A3 (Moody's) or A- (S&P) and LIPA does not provide a substitute insurance policy or credit enhancement/collateral (see "Termination Risk" above), MLCS has the right to terminate the swap.
5.	JPMorgan Chase & Co. (JPM)	Rating of JPMC & Co. (Guarantor of BSCM) falls below A3 (Moody's) or A- (S&P). In the event JPMC & Co. falls below Baa3 (Moody's) or BBB- (S&P), LIPA has the right terminate	Rating of LIPA falls below Baa2 (Moody's) or BBB (S&P). In the event LIPA falls below Baa3 (Moody's) or BBB- (S&P), BSCM has the right to terminate the swap.



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the swap.

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<b>Transaction</b>	<b>Counterparty</b>	<b>Relating to Counterparty Downgrade</b>	<b>Relating to LIPA Downgrade</b>
6.	Citibank, N.A., New York (CB)	No current collateral posting provisions. LIPA has the right to terminate the swap if rating of CB falls below Baa3 (Moody's), BBB- (S&P), or BBB- (Fitch); or if rating of CB falls below A3 (Moody's), A- (S&P), or A- (Fitch) and CB has not provided a guarantee, letter of credit, surety bond, insurance policy or other credit support document, or Citibank has not executed a Credit Support Annex to be negotiated with LIPA	No current collateral provisions. CB has the right to terminate the swap if:  1 - Rating of LIPA falls below Baa3 (Moody's), BBB- (S&P), or BBB- (Fitch) 2 - Rating of LIPA falls below Baa2 (Moody's), BBB (S&P), or BBB (Fitch) and LIPA has not provided a guarantee, letter of credit, surety bond, insurance policy or other credit support document, or LIPA has not executed a Credit Support Annex to be negotiated with Citibank
7.	Matured September 1, 2015		
8.	Wells Fargo Bank, N.A. (WFB)	Rating of WFB falls below A3 (Moody's), A- (S&P), or A- (Fitch) by two rating agencies. In the event WFB falls below A3 (Moody's), A- (S&P), and A- (Fitch) by all three agencies, LIPA has the right to terminate the swap.	LIPA does not post collateral under Swap 8. If the rating of the associated bonds (Series 2015A - MMD FRN Rate) falls below Baa3 (Moody's), BBB- (S&P), or BBB- (S&P), WFB has the right to terminate the swap.
9.	Wells Fargo Bank, N.A. (WFB)	Rating of WFB falls below A3 (Moody's), A- (S&P), or A- (Fitch) by two rating agencies. In the event WFB falls below A3 (Moody's), A- (S&P), and A- (Fitch) by all three agencies, LIPA has the right to terminate the swap.	LIPA does not post collateral under Swap 9. If the rating of the associated bonds (Series 2016A - MMD FRN Rate) falls below Baa3 (Moody's), BBB- (S&P), or BBB- (S&P), WFB has the right to terminate the swap.

Long Island Power Authority & Utility Debt Securitization Authority Floating Rate Exposure	3/31/2018
<b>Fixed Rate Bonds</b>	
1998 A	99,302,300
2000 A	323,870,453
2003 C	36,645,000
2010 B	210,000,000
2011 A	18,315,000
2012 A	250,000,000
2012 B	179,035,000
2014A	413,070,000
2014B	164,950,000
2015B	117,230,000
2016B	383,770,000
2017	350,000,000
<b>Sub-Total (LIPA)</b>	<b>2,546,187,753</b>
<b>Utility Debt Securitization Authority</b>	
UDSA Series 2013	1,844,176,000
UDSA Series 2015	1,002,115,000
UDSA Series 2016A	636,770,000
UDSA Series 2016B	409,870,000
UDSA Series 2017	369,465,000
<b>Sub-Total (UDSA)</b>	<b>4,262,396,000</b>
<b>Sub-Total (LIPA &amp; UDSA)</b>	<b>6,808,583,753</b>
<b>Floating Rate Bonds</b>	
Commercial Paper – Subordinated CP1	0
Commercial Paper – Subordinated CP2	0
2013 A RCA	285,000,000
2014 C Floating Rate Note	150,000,000
2015 A MMD FRN Rate (1)	200,000,000
2015 C Floating Rate Note	149,000,000
2016 A MMD FRN Rate (1)	175,000,000
General Revenue Notes -1	67,500,000
General Revenue Notes - 4	100,000,000
<b>Sub-Total</b>	<b>\$1,126,500,000</b>
<b>TOTAL BONDS ISSUED (a)</b>	<b>\$7,935,083,753</b>
<b>Total Floating Rate Bonds</b>	<b>\$1,126,500,000</b>
<b>Net Floating Rate Exposure of Swaps (4)</b>	
Floating-to-Fixed (related to Swap 3, 8 and 9) (2)	(585,842,058)
Basis Swap (Floating) (related to Swaps 4, 5 and 6) (3)	276,295,525
<b>Total Net Floating Rate Exposure of Swaps</b>	<b>(309,546,533)</b>
<b>Cash &amp; Short-Term Investments Net of Restricted Funds</b>	<b>(814,332,924)</b>
<b>NET FLOATING RATE BONDS (b)</b>	<b>\$2,620,544</b>
<b>Net Floating Rate Exposure (b) / (a)</b>	<b>0.03%</b>

1) The 2015A and 2016A Bonds have associated Total Return Swaps (8 and 9) whereby LIPA receives the rate paid on the Bonds (MMD Index plus a spread) and pays a rate of 69.4% 1-Month LIBOR plus a spread.

2) Swap 3 treated as having floating rate exposure equal to the net differential between the floating receiver rate on the swap and the floating rate obligation on the LIBOR-based bonds. For purposes of this analysis (netting LIBOR vs. LIBOR exposure) Series 2016A is assumed to be hedged however upon the refunding of Series 2012C by 2016A, an equal amount of swap 3, previously assigned to Series 2012C, was reassigned per the swap documentation to both Series 2015C and GR CP-1 (\$86.775mm and \$88.225mm, respectively). As of March 23, 2018, GR Notes 4 replaced GR CP-1

3) Basis Swaps treated as having floating rate exposure equal to a SIFMA/LIBOR ratio of 100% minus the receiver ratio of 70.5%.

4) Swaps numbered as shown on page 1.