

City of Houston, Texas
Quarterly Swap Agreements Disclosure
March 31, 2017

I. Combined Utility System Swaps

A. Combined Utility System Synthetic Fixed Rate Swap

On September 10, 2004, the City entered into three pay-fixed, receive-variable rate swap agreements (“the 2004B Swaps”) related to the Combined Utility System 2004B auction rate variable interest bonds (“the 2004B Bonds”). The City pre-qualified six firms to submit competitive bids on the swaps. The three firms selected all matched the lowest fixed rate bid of 3.78%. As of August 15, 2012, the City had converted all of the 2004B bonds from auction rate to variable rate demand bonds (“the 2004B bonds”) and SIFMA-Index notes (“the 2012A and 2012B Refunding Bonds”), collectively referred to herein as the “Bonds.”

Objective. The objective of the swaps is to hedge against the potential of rising interest rates associated with the Bonds and to achieve a lower fixed rate than the market rate for traditional fixed rate debt at time of issuance. The City’s goal is that its variable receipts under these swaps equal the variable payments made on the bonds, leaving the fixed payment on the swap, plus dealer and liquidity fees and the fixed spread to SIFMA, as its net interest cost.

Terms. The notional amounts of the swap agreements total \$653.3 million, the principal amount of the associated Bonds. The City’s swap agreements contain scheduled reductions to outstanding notional amounts that follow anticipated payments of principal of the Bonds in varying amounts during the years 2028 to 2034.

Under the terms of the swaps, the City will pay a fixed rate of 3.78% and receive a floating rate equal to 57.6% of One-Month US Dollar LIBOR plus 37 basis points. All agreements were effective September 10, 2004 - the original date of issuance of the Bonds. The termination date is May 15, 2034.

On November 7, 2016, UBS AG novated \$150,000,000 notional amount to Wells Fargo Bank, N.A.

Receipts and Payments. For the nine months ended March 31, 2017, the City received \$3,500,717.67 in swap revenue for these swaps and paid \$3,041,471.55 of interest on the underlying securities. The contractual rate for the City’s swap payment is 3.78%. The average effective rate for the 2004B bonds, including interest for the Series 2004B bonds, the City’s swap payments, and its dealer and liquidity fees, reduced by swap receipts, was 4.33%. In contrast, the comparable fixed rate the City paid on its Combined Utility System Series 2004A bonds was 5.08%.

Fair value. Because interest rates have changed, the swaps had an estimated negative fair value of \$170 million on March 31, 2017. This value was calculated using the zero-coupon method.

Credit risk. As of this date, the City was not exposed to credit risk because the swaps had a negative fair value. However, should interest rates change and the fair value of the swap become positive, the City would be exposed to credit risk on the swap in the amount of its fair value. If a counterparty’s credit rating falls below rating thresholds established by the agreements, collateral must be posted in varying amounts depending on the credit rating and swap fair value. No collateral has been required to date.

Counterparty	Notional Amount	Fair Value	Counterparty Credit Rating (Moody's/S&P/Fitch)
Goldman Sachs Capital Markets Inc.	\$ 353,325,000	\$ (92,186,515)	NR /A+ /A+
JP Morgan Chase	150,000,000	(39,136,708)	Aa3/ A+/AA-
Wells Fargo	150,000,000	(39,136,708)	Aa2 /AA-/AA
	\$ 653,325,000	\$ (170,459,931)	

Basis risk. The City is exposed to basis risk on the swaps because the variable payment received is based on a different taxable index from the tax-exempt rate paid by the City on the bonds. Should the relationship between taxable LIBOR and tax-exempt rates move to convergence (because of reductions in tax rates, for example), the expected cost savings may not be realized. For the nine months ended March 31, 2017, the swap generated positive cash flow with the average variable rate paid on the underlying tax-exempt bonds at 0.61%, or 0.09% lower than the average 0.70% LIBOR-based rate received for the swap.

Remarketing risk. The City faces a risk that the remarketing agent will not be able to sell the variable rate demand bonds at a competitive rate each week. There is no remarketing risk associated with the SIFMA index notes until the end of the respective maturities in 2015 and 2017. Rates may vary considerably as investors shift in and out of the tax-exempt variable rate sector.

Termination risk. The City may terminate for any reason. A counterparty may terminate a swap if the City fails to perform under the terms of the contract. The City's ongoing payment obligations under the swap (and to a limited extent, its termination payment obligations) are insured, and counterparties cannot terminate so long as the insurer does not fail to perform. If a swap is terminated, the associated variable-rate bonds would no longer carry synthetic fixed interest rates. Also, if the swap has a negative fair value at termination, the City would be liable to the counterparty for a payment equal to the swap's fair value.

B. Combined Utility System Forward Rate Lock/Synthetic Fixed Rate Swap

On November 1, 2005, the City priced a floating to fixed interest rate exchange agreement swap with Royal Bank of Canada ("RBC") on a forward basis. The City pre-qualified eight firms to submit competitive bids, and RBC submitted the lowest bid of 3.761%.

Objective. The City entered the swap agreement to hedge against the potential of rising interest rates and to achieve a lower fixed rate than the market rate for traditional fixed rate debt. This swap was previously assigned to the 2008A variable rate demand bonds and the 2010B SIFMA Indexed Notes. The swap is currently associated with the 2012C SIFMA Indexed Notes, which refunded the 2010 SIFMA Indexed Notes. The addition of the SIFMA-Indexed Notes diversifies the System's variable rate debt portfolio. Rates on the notes are calculated at SIFMA +60 bps, and the notes expire in 2016. On August 1, 2016, CUS refunded 2012C SIFMA Index Notes to CUS 2016C Libor Index.

Terms. The notional amount of the swap is \$249.1 million with the underlying bonds being the Series 2012C Notes. The swap agreement contains scheduled reductions to the outstanding notional amount during the years 2028 to 2034.

Under terms of the swap, the City pays a fixed rate of 3.761% and receives a floating rate equal to 70% of One-Month US Dollar LIBOR. The agreement became effective March 3, 2007, with a termination date of May 15, 2034.

On September 19, 2015, Royal Bank of Canada (RBC) novated \$249,075,000 notional amount to Wells Fargo.

Receipts and Payments. For the nine months ended March 31, 2017, the City earned \$772,622.61 in swap revenue for its 2016C swap and paid \$1,150,419.91 on the underlying notes. The contractual rate for the City's swap payment is 3.761%. The average effective rate for the bonds, including the City's swap payments and a fixed component, reduced by swap receipts was 4.56%.

Fair value. Because interest rates have changed, the swap had an estimated negative fair value of \$66.7 million on March 31, 2017. This value was calculated using the zero-coupon method.

Credit risk. The City's swap policy generally requires that swap counterparties be rated double-A or better by at least one nationally recognized rating agency. As of this date, Wells Fargo Bank met this requirement with ratings of Aa2/AA-/AA. Also, under the agreement, if Wells Fargo Bank's credit rating falls below double-A, collateral may be requested in varying amounts depending on the credit rating and swap fair value. No collateral has been required to date.

Basis risk. The City will be exposed to basis risk on the swap because the variable payment received is based on a taxable index other than the tax-exempt SIFMA based rate paid by the City on the bonds. In the future, if tax-exempt rates move to convergence with the taxable LIBOR index (because of reductions in tax rates, for example), the expected cost savings may not be realized, resulting in a higher synthetic rate. For the nine months ended March 31, 2017, the average variable rate paid on the underlying tax-exempt bonds, excluding the fixed credit spread component, was 0.61%, 0.20% higher than the average 0.41% LIBOR-based rate received for the swap.

Termination risk. The City may terminate for any reason. Wells Fargo Bank may terminate a swap if the City fails to perform under the terms of the contract. The City's ongoing payment obligations under the swap (and to a limited extent, its termination payment obligations) are insured, and Wells Fargo Bank cannot terminate so long as the insurer does not fail to perform. If a swap is terminated, the associated variable-rate bonds would no longer carry synthetic fixed interest rates. Also, if the swap has a negative fair value at termination, the City would be liable to the counterparty for a payment equal to the swap's fair value.