



# Annual Performance Report

## Interest Rate Exchange and Similar Agreements

### Fiscal Year 2016

**Andrew M. Cuomo, Governor**  
Robert F. Mujica Jr., Budget Director

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# Annual Performance Report - Interest Rate Exchange and Similar Agreements

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# Annual Performance Report - Interest Rate Exchange and Similar Agreements

## Preface

Pursuant to New York State Finance Law (Article 5-D, section 69-d), the Director of the Budget is required to issue an annual performance report for the prior State fiscal year for interest rate exchange agreements (“swaps”) entered into by the State.

This report fulfills this statutory requirement, and includes the annual and cumulative performance of all State swaps and similar agreements that were entered into since the inception of the program to the end of the 2016 fiscal year. In addition, this report contains a comprehensive review of the State’s swap agreements, as well as other related information.

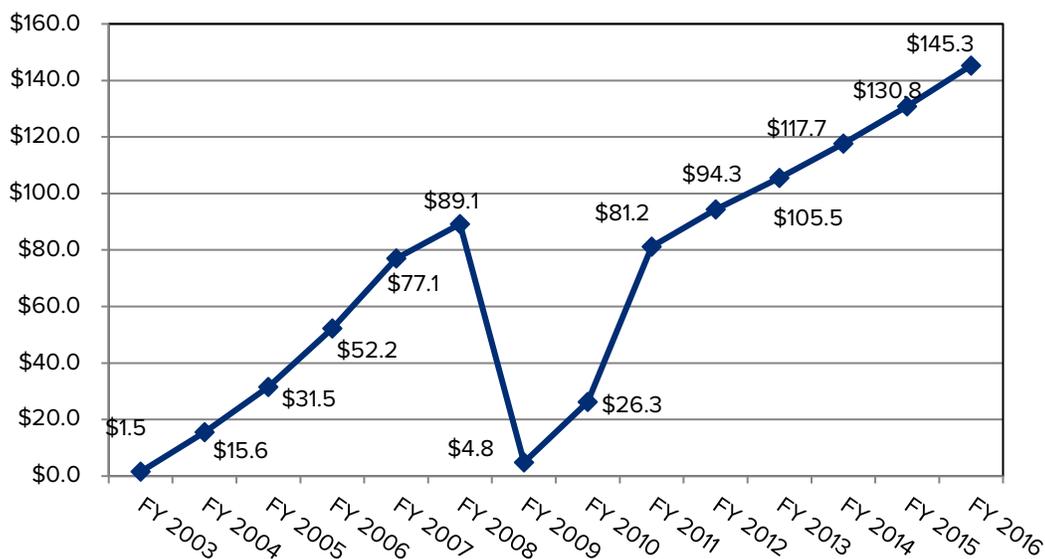
The performance section of the FY 2016 Report is divided into three subsections. The first subsection, titled *Summary of the Overall Swap Portfolio*, provides an overview of the State’s swap portfolio and explains the adjustments that have occurred since FY 2009. The second subsection, titled *Existing Swap Portfolio*, represents outstanding swap agreements that are currently in place and their performance since inception. The third subsection, titled *Terminated Swaps*, reflects swaps that have been terminated as a result of actions taken by the State mainly from FY 2009 through FY 2012 to (i) adjust its swap portfolio in response to disruptions in the variable rate market and (ii) take advantage of a market opportunity to lock in savings for the State (see *Market Opportunity -- Terminate Synthetic Variable Rate Swaps*).

**Report Methodology:** In order to accurately measure the true costs of terminating swaps, the State employs a methodology in this report that compares the actual costs of the original swaps (through maturity) to the estimated costs the State would have paid using traditional fixed rate bonds. In most cases the State benefitted from issuing lower cost fixed rate bonds to terminate swaps, as compared to the fixed rates the State would have paid initially when entering into swaps. In other cases, the State terminated swaps with a cash defeasance or the swaps were automatically terminated due to a bank bankruptcy. See *Section III* for more detailed information.

## I. Executive Summary

- Since its inception in 2002, the State's swaps program has produced savings, despite the financial crisis in 2008. As of March 31, 2016, the swap program has enabled the State to reduce its debt service costs by an estimated \$145 million, when compared to traditional debt issuances.
- From FY 2009 through FY 2012, the State took advantage of favorable market conditions and chose to terminate \$4.6 billion in swap agreements in a low interest rate environment thereby reducing the risks associated with the portfolio. Consistent with past practice, the State continues to monitor the performance and effectiveness of each swap, account for changes in valuation, and review with authority staff the overall swap performance and related risks. No swap agreements were terminated in FY 2016.

**Graph 1 – Interest Rate Exchange Agreements  
Cumulative Estimated Savings/Costs  
(in millions)**

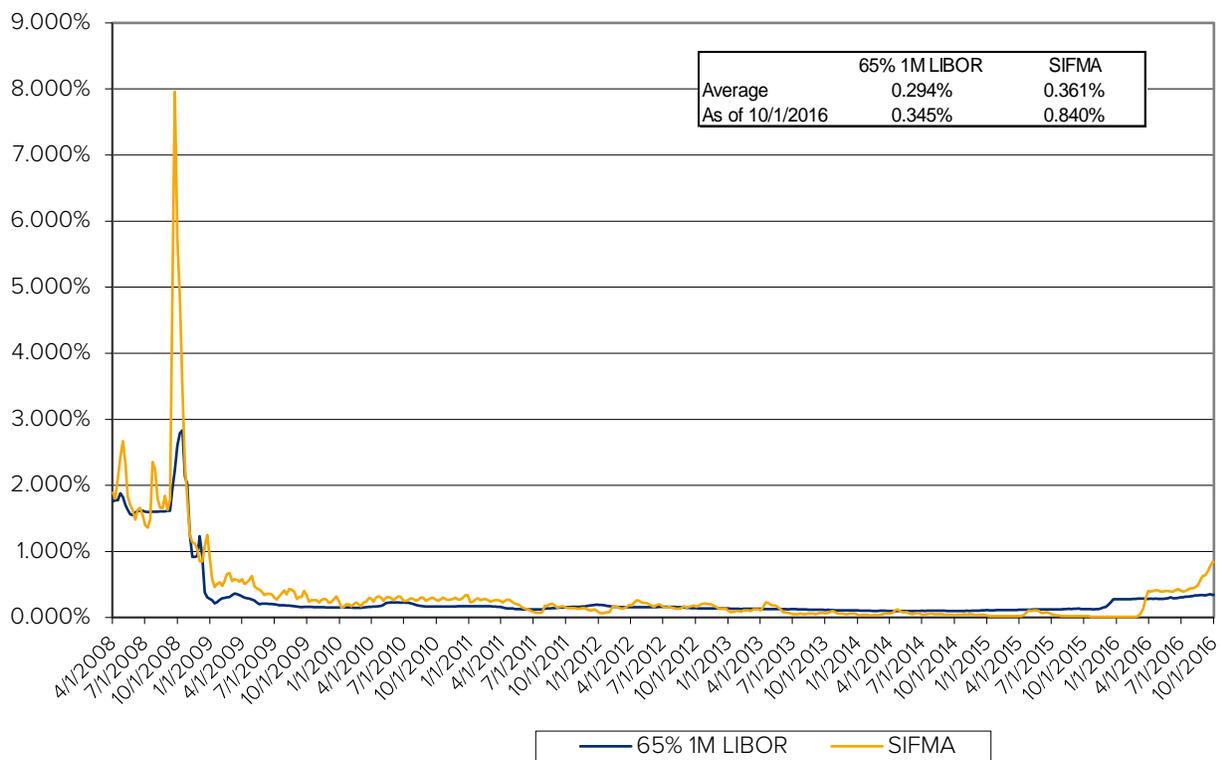


Source: NYS Division of the Budget

- The current statutory maximum amount of swaps is \$7.5 billion (15 percent of debt outstanding). As of March 31, 2016, the State has \$1.8 billion of synthetic fixed-rate swaps outstanding under its statutory cap, leaving \$5.7 billion of additional capacity against the cap. The State does not expect to use its swap capacity in FY 2017.
- The portfolio is diversified with no counterparty owning more than 20 percent of the portfolio.

During FY 2016, the State also continued to experience better performance in its swap portfolio, as markets have normalized since the financial crisis. Most State swaps depend on a correlation between short-term interest rates, specifically LIBOR and SIFMA. The underlying premise is that 65 percent of LIBOR, a taxable rate, will closely align with the interest rate on the tax exempt, short-term debt (SIFMA). If these variables do not correlate, it can result in the State experiencing unanticipated losses (or gains). After severe disconnects in FY 2009 and FY 2010, these variables have returned to expected trading patterns.<sup>1</sup> Shown below is a chart illustrating the correlation between 65 percent of LIBOR and SIFMA. As shown, the State's costs have been reduced with the improvement in the credit markets.

**65% of 1M LIBOR and SIFMA**



<sup>1</sup>Regulators in the United States, the United Kingdom, and the European Union fined global financial institutions more than \$9 billion for manipulating the LIBOR rate. For example, see James McBride, "Understanding the LIBOR Scandal." October 12, 2016, available at <http://www.cfr.org/united-kingdom/understanding-libor-scandal/p28729>.

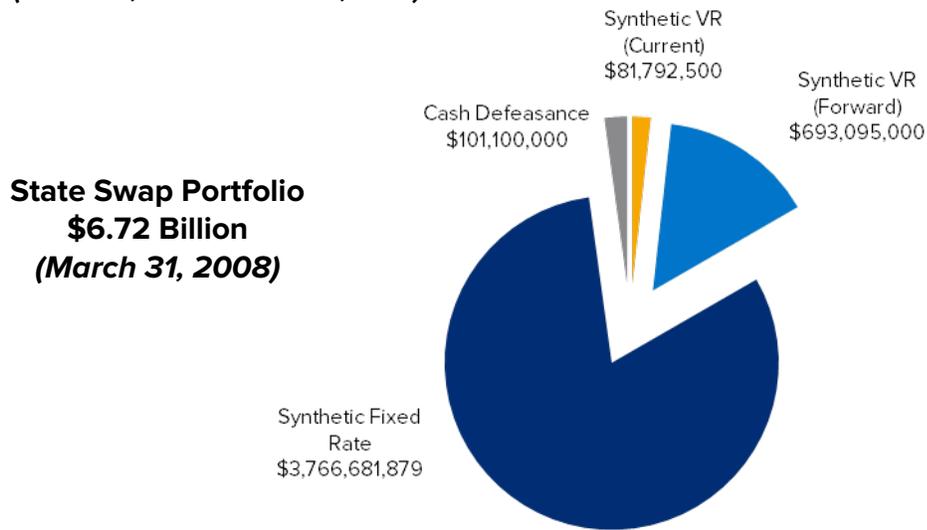
## II. Performance of the State's Swap Portfolio

The State made adjustments to its swap portfolio in FYs 2009 through FY 2012, taking advantage of a favorable interest rate environment and continuing to address issues related to the financial crisis. To simplify the explanation of the portfolio's performance, this section is divided into three subsections. The first subsection, titled *Summary of the Overall Swap Portfolio*, provides an overview of the State's swap portfolio since its inception and explains the adjustments that have occurred since FY 2009. The second subsection, titled *Existing Swap Portfolio*, includes all outstanding swap agreements and their performance since inception. The third subsection titled, *Terminated Swaps*, reflects the actions taken by the State to adjust its swap portfolio. The State made no adjustments to the swap portfolio in FY 2016.

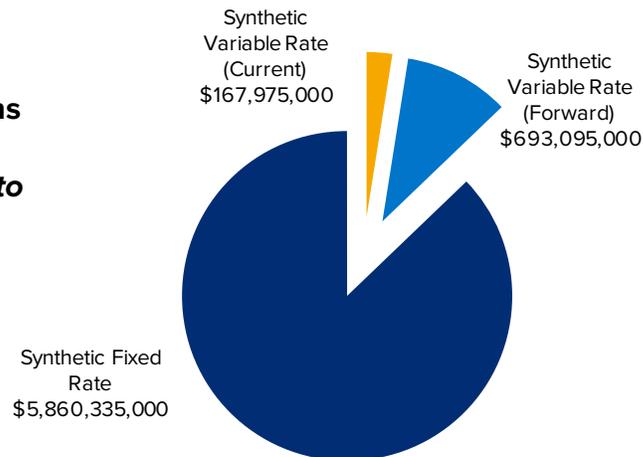
### Summary of the Overall Swap Portfolio

From FY 2009 to FY 2012, the State made significant adjustments to its swap portfolio. Over this time, the State terminated \$4.6 billion in swaps, reducing the total portfolio to \$2.1 billion. Below is a breakdown of the State's swap portfolio as of March 31, 2008 and March 31, 2016, including the composition of the portfolio. The State's portfolio at the end of FY 2016 was solely comprised of \$1.8 billion in synthetic fixed rate swaps.

**Chart 1 – State Swap Portfolio Adjustments and Current Portfolio**  
*(March 31, 2008 - March 31, 2016)*



**Swap Terminations**  
**\$4.6 Billion**  
*(From April 2008 to March 31, 2012)*



**Existing Swap Portfolio**  
**\$1.8 Billion**  
*(As of March 31, 2016)*



# Annual Performance Report - Interest Rate Exchange and Similar Agreements



Overall, the State’s swap portfolio generated estimated savings of approximately \$145 million since inception, as shown in the chart below. This consists of \$158 million in cumulative savings from existing swaps, with approximately \$148 million produced from synthetic fixed rate swaps and \$10 million from synthetic variable rate swaps before they were fully terminated in FY 2011. The total savings of the swap portfolio also includes a \$43 million payment received from terminating variable rate swaps, offset by \$55 million of present value termination costs associated with fixed rate swaps.

**Table 1 – Swap Agreements - Estimated Savings Per Year Swap Valuation Model**

FY	Savings Per Year
2002-03	\$1,519,763
2003-04	\$14,063,726
2004-05	\$15,956,696
2005-06	\$20,677,864
2006-07	\$24,837,948
2007-08	\$12,093,337
2008-09	(\$9,641,207)
2009-10	\$7,627,500
2010-11	\$8,559,787
2011-12	\$10,878,643
2012-13	\$11,180,328
2013-14	\$12,186,033
2014-15	\$13,165,524
2015-16	\$14,450,950
<b>Cumulative Total</b>	<b>\$157,556,891</b>
<i>Present Value Termination Costs:</i>	(\$55,070,644)
<i>Variable Swaps Receipt (9/22/10):</i>	\$42,800,200
<b>Total Notional Amount of Portfolio:</b>	<b>\$1,818,398,121</b>
<b>Total Savings:</b>	<b><u>\$145,286,447</u></b>

1. Includes \$2.7 million payment received from Lehman Brothers due to bankruptcy for automatic termination of a swap agreement.

The following discussion of performance is divided into two subsections -- *Existing Swap Portfolio* and *Terminated Swaps* -- because the performance analysis differs for existing and terminated swaps. Within each subsection, there will be a discussion of synthetic fixed rate and synthetic variable rate swaps, and the process used for calculating the performance of each category.

## Existing Swap Portfolio - \$1.8 Billion

As of March 31, 2016, the existing swap portfolio consisted solely of synthetic fixed rate swaps and totaled \$1.8 billion. Starting in November 2002, the State began to enter into swap agreements that paid a “synthetic fixed rate.” The intention of these swaps was to lower the cost of borrowing below what could have been achieved by issuing fixed rate bonds. Based on this analysis, the State saved approximately \$145 million through March 31, 2016, compared to the estimated cost of traditional fixed rate bonds. This subsection explains the composition of the synthetic fixed rate portfolio and the process for calculating savings.

The synthetic fixed rate swap portfolio at the end of FY 2016 included seven different counterparties, with four authorized State issuers. The original average life of the synthetic fixed rate swap agreements varied from 14 to 25 years, as shown in Table 2 below.

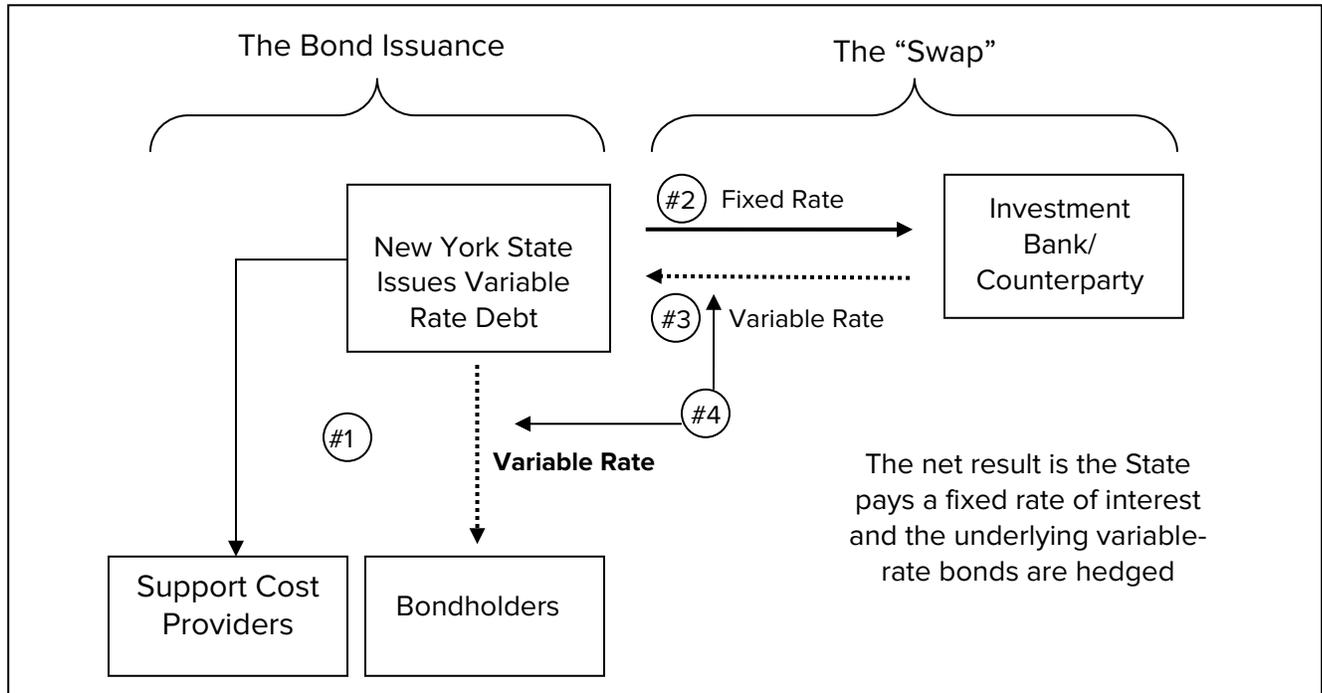
**Table 2 – A Snapshot of the Synthetic Fixed Rate Swap Portfolio**

Notional Amount as of						
Issuer	Swap Series	03/31/2014	03/31/2015	03/31/2016	Original Date	Average Life
DA	CUNY 2008CD	\$462,073,121	\$462,073,121	\$462,073,121	12/11/2008	13.8
DA	MH 2003D-2A to 2H	\$179,100,000	\$171,000,000	\$163,800,000	7/15/2003	17.3
ESDC	2008A	\$200,000,000	\$200,000,000	\$200,000,000	6/24/2008	14.1
ESDC	PIT 2004 A3	\$223,935,000	\$223,935,000	\$223,935,000	12/22/2004	24.5
HFA	PIT 2005C	\$80,000,000	\$80,000,000	\$80,000,000	3/10/2005	23.4
HFA	SCOR 2003LM	\$147,800,000	\$137,150,000	\$115,350,000	8/28/2003	14
LGAC	2003A	\$248,825,000	\$179,750,000	\$104,225,000	2/20/2003	15.8
LGAC	2003A	\$366,665,000	\$366,665,000	\$366,665,000	2/20/2003	15.8
LGAC	2004A	\$105,225,000	\$105,225,000	\$102,350,000	2/26/2004	15.1
<b>Total:</b>		<b>\$2,013,623,121</b>	<b>\$1,925,798,121</b>	<b>\$1,818,398,121</b>		

## The Mechanics

Synthetic fixed rate debt involves two separate transactions: (1) a variable rate bond issuance, and (2) a swap (between the State and a counterparty) to effectively convert the variable rate into a fixed rate. The net result of the two transactions is a debt obligation that has similar characteristics to a fixed rate bond, if each leg of the transaction works as planned. Figure 1, shows the steps of a synthetic fixed rate swap.

**Figure 1 – Mechanics of a Synthetic Fixed Rate Swap**



## Steps:

1. The State issues variable rate debt. This includes variable rate payments to bondholders and support costs (i.e., letter of credit fees, remarketing fees, broker-dealer fees, etc.) paid to banks.
2. The State agrees to pay the counterparty a fixed rate (i.e., synthetic fixed rate) in the swap agreement.
3. The counterparty agrees to pay the State a variable rate (i.e., 65 percent of LIBOR) intended to match the State's variable rate on the bonds. The State pays a variable rate to the bondholder that is set by the market, which is expected to be roughly equivalent to the variable rate calculated as a percentage of LIBOR received from the counterparty.
4. In theory, the variable rate payments offset each other and the State is left with a fixed rate payment to a counterparty.

## The "All In" Synthetic Fixed Rate

Swap performance is based on the actual swap rate paid by the State as compared to the rate the State would have paid on a traditional fixed rate bond issuance. As shown in Table 3, the costs associated with a synthetic fixed rate swap include: (1) Synthetic Fixed Rate (Column A); (2) Variable Rate Support Costs (Column B); and (3) Variable Rate Basis Leakage, the difference between the variable rate receipts flowing to the State and the variable rate payments made by the State on the underlying variable rate bonds (Column C).

Issuer	Swap Series	Notional Amount as of			(A)	(B)	(C)	(D)=(A) + (B) + (C)	Fixed Non-Callable Rate <sup>2</sup>		Swap Rate Advantage	
		03/31/2014	03/31/2015	03/31/2016	Swap Fixed Rate	Support Costs	Basis Leakage	All In Synthetic Fixed Rate	Fixed Non-Callable Rate <sup>2</sup>	%	bps	
DA	CUNY 2003	\$0	\$0	\$0	3.360%	0.257%	0.459%	4.076%	4.690%	0.614%	61.4	
DA	CUNY 2005B	\$0	\$0	\$0	3.168%	0.267%	(0.026%)	3.408%	3.970%	0.562%	56.2	
DA	CUNY 2008CD	\$462,073,121	\$462,073,121	\$462,073,121	3.362%	0.762%	(0.002%)	4.122%	4.690%	0.568%	56.8	
DA	MH 2003D-2A to 2H	\$179,100,000	\$171,000,000	\$163,800,000	3.044%	0.594%	0.093%	3.731%	4.250%	0.519%	51.9	
ESDC	2008A	\$200,000,000	\$200,000,000	\$200,000,000	3.579%	0.668%	0.024%	4.272%	4.800%	0.528%	52.8	
ESDC	CORR 2002B	\$0	\$0	\$0	3.579%	0.255%	0.319%	4.153%	4.800%	0.647%	64.7	
ESDC	PIT 2004 A3	\$223,935,000	\$223,935,000	\$223,935,000	3.490%	0.416%	0.371%	4.277%	4.780%	0.503%	50.3	
HFA	PIT 2005C	\$80,000,000	\$80,000,000	\$80,000,000	3.336%	0.488%	0.327%	4.151%	4.682%	0.531%	53.1	
HFA	SCOR 2003LM	\$147,800,000	\$137,150,000	\$115,350,000	3.658%	0.559%	0.283%	4.499%	4.720%	0.221%	22.1	
LGAC	2003A	\$248,825,000	\$179,750,000	\$104,225,000	3.151%	0.251%	0.086%	3.489%	4.500%	1.011%	101.1	
LGAC	2003A	\$366,665,000	\$366,665,000	\$366,665,000	3.208%	0.732%	0.178%	4.117%	4.500%	0.383%	38.3	
LGAC	2004A	\$0	\$0	\$0	3.194%	0.251%	0.170%	3.615%	4.050%	0.435%	43.5	
LGAC	2004A	\$105,225,000	\$105,225,000	\$102,350,000	3.194%	0.691%	0.001%	3.886%	4.050%	0.164%	16.4	
<b>\$2,013,623,121</b>					<b>3.339%<sup>1</sup></b>	<b>0.512%<sup>1</sup></b>	<b>0.197%<sup>1</sup></b>	<b>4.049%<sup>1</sup></b>	<b>4.591%<sup>1</sup></b>	<b>0.543%<sup>1</sup></b>	<b>54.3<sup>1</sup></b>	

<sup>1</sup> (weighted averages)

<sup>2</sup> Represents the interest rates the State would have paid if non-callable fixed rate bonds were issued.

**Table 3 –Synthetic Fixed Rate Swap “All In” Rate Calculation**

- A Synthetic Fixed Rate.** The synthetic fixed rate represents the fixed rate the State pays to the swap counterparty. This rate is set at swap pricing and remains fixed over the life of the swap. The rate is based on the State receiving payments equal to 65 percent of one-month LIBOR (a variable rate payment), in exchange for paying this synthetic fixed rate. As noted, the synthetic fixed rate was less than the traditional fixed bond rate the State would have paid to issue traditional fixed rate bonds.
- B Variable Rate Support Costs.** Variable rate support costs represent the costs the State must pay annually to maintain the variable rate bonds issued in the transaction. Since these expenses would not have been incurred in a traditional fixed rate bond transaction, the expenses reduce swap savings. ARS and VRDBs have different support costs. Examples include broker-dealer fees and auction agent fees for ARS, and liquidity facility fees and remarketing fees for VRDBs.
- C Variable Rate “Basis Leakage.”** In a synthetic fixed rate swap, the State makes variable rate payments to bondholders which are set in the open market. At the same time, the State receives variable rate payments from counterparties under the terms of a swap. These two variable rate payment streams are expected to be roughly the same. However, mismatches may occur. In cases where variable rate receipts are less than the variable rate payments, the State experiences losses, or “basis leakage.” The alternative could occur as well, and basis leakage could add to savings. Basis leakage is factored into the savings analysis.
- D “All-in” Synthetic Fixed Rate.** The “all-in” synthetic fixed rate swap is simply a calculation totaling all the swap related costs. Adding together all the related costs gives us a representative number to compare to the Fixed Non-Callable Rate.

## Traditional Fixed Non-Callable Rate

Synthetic fixed rate swaps have characteristics similar to traditional fixed rate bonds. Generally, the fixed rate achieved through a synthetic fixed rate structure is lower than the fixed rate obtained through a traditional fixed rate bond.

To accurately compare a traditional fixed bond rate to the “all-in” synthetic fixed rate, it is important to use a *non-callable* fixed rate bond, rather than a typical fixed rate bond with optional redemption provisions. Although the State may terminate a swap early, it can do so only at the market value (i.e., mark-to-market), not at the par value. Since no opportunity exists to terminate the swap without a payment, it is reasonable to assume the swap will remain outstanding through maturity, unless other factors dictate termination.

Together, DOB and its financial advisors determined the most appropriate fixed non-callable rate that applies to each of the State’s synthetic fixed swaps. This rate was based on the weighted average life of the underlying bond issue, the term and structure of the underlying swap, use of bond insurance, and all relevant bond information in the marketplace at the time of swap pricing.

## Basis Leakage

As shown in Table 3, the State’s basis leakage experience varies for each swap depending on the effectiveness of the underlying hedge. For example, the Dormitory Authority (DA) City University of New York (CUNY) 2003 series shows variable rate basis leakage of 0.459 percent, meaning the State had been paying 0.459 percent more to bondholders than it has been receiving from counterparties. Conversely, the DA CUNY 2005B swap shows variable rate basis leakage of -0.026 percent, which means that the State had been receiving 0.026 percent more from counterparties than it has been paying to bondholders.

With the exception of the DA CUNY 2005 swap and the DA CUNY 2008CD swap, all of the 13 synthetic fixed rate swap series have experienced negative basis leakage through March 31, 2016. This outcome differed from DOB expectations that were based on historical analysis that showed a strong correlation between 65 percent of LIBOR and SIFMA. However, the basis leakage for certain swaps entered into during 2002 and 2003 was expected to be higher than the norm, since a wide disconnect between 65 percent of LIBOR and tax-exempt variable rates existed at the time the swaps were originated. This mismatch was managed by factoring into the swap a lower fixed payor rate that the State would pay to the counterparty. Throughout the past year, the negative basis leakage was offset by the larger benefit built into the fixed rate payment streams.

## Savings

As shown in Table 4, the State saved approximately \$148 million using synthetic fixed rate swaps, or 54 basis points, on average since inception. The synthetic fixed rate swap portfolio provided savings to the State of \$14 million in fiscal year FY 2016 (see Appendix A). However, on the whole the State has received moderate savings since inception. The primary factor producing the savings is the “all-in” swap rate, ranging from 3.4 percent to 4.5 percent, relative to the comparable fixed rate bond. After factoring in all related swap costs, the State paid a synthetic fixed rate of 4.05

percent, on average, compared to the 4.59 percent fixed bond rate the State would have paid. This has resulted in 54 basis points of savings since 2002.

**Table 4—Synthetic Fixed Swap Portfolio Savings**

Issuer	Swap Series	Notional Amount as of			Fixed Non-Callable Rate <sup>1</sup>	All In Synthetic Fixed Rate	Swap Rate Advantage %	Savings to Date	
		03/31/2014	03/31/2015	03/31/2016				bps	\$
DA	CUNY 2003	\$0	\$0	\$0	4.690%	4.076%	0.614%	61.4	\$18,219,414
DA	CUNY 2005B	\$0	\$0	\$0	3.970%	3.408%	0.562%	56.2	\$363,455
DA	CUNY 2008CD	\$462,073,121	\$462,073,121	\$462,073,121	4.690%	4.122%	0.568%	56.8	\$19,073,866
DA	MH 2003D-2A to 2H	\$179,100,000	\$171,000,000	\$163,800,000	4.250%	3.731%	0.519%	51.9	\$12,746,832
ESDC	2008A	\$200,000,000	\$200,000,000	\$200,000,000	4.800%	4.272%	0.528%	52.8	\$8,133,183
ESDC	CORR 2002B	\$0	\$0	\$0	4.800%	4.153%	0.647%	64.7	\$14,962,301
ESDC	PIT 2004 A3	\$223,935,000	\$223,935,000	\$223,935,000	4.780%	4.277%	0.503%	50.3	\$12,585,563
HFA	PIT 2005C	\$80,000,000	\$80,000,000	\$80,000,000	4.682%	4.151%	0.531%	53.1	\$4,776,252
HFA	SCOR 2003LM	\$147,800,000	\$137,150,000	\$115,350,000	4.720%	4.499%	0.221%	22.1	\$4,500,320
LGAC	2003A	\$248,825,000	\$179,750,000	\$104,225,000	4.500%	3.489%	1.011%	101.1	\$30,770,514
LGAC	2003A	\$366,665,000	\$366,665,000	\$366,665,000	4.500%	4.117%	0.383%	38.3	\$18,364,991
LGAC	2004A	\$0	\$0	\$0	4.050%	3.615%	0.435%	43.5	\$1,971,437
LGAC	2004A	\$105,225,000	\$105,225,000	\$102,350,000	4.050%	3.886%	0.164%	16.4	\$1,259,238
		<b>\$2,013,623,121</b>	<b>\$1,925,798,121</b>	<b>\$1,818,398,121</b>	<b>4.591%<sup>1</sup></b>	<b>4.049%<sup>1</sup></b>	<b>0.543%<sup>1</sup></b>	<b>54.3<sup>1</sup></b>	<b>\$147,727,366<sup>1</sup></b>

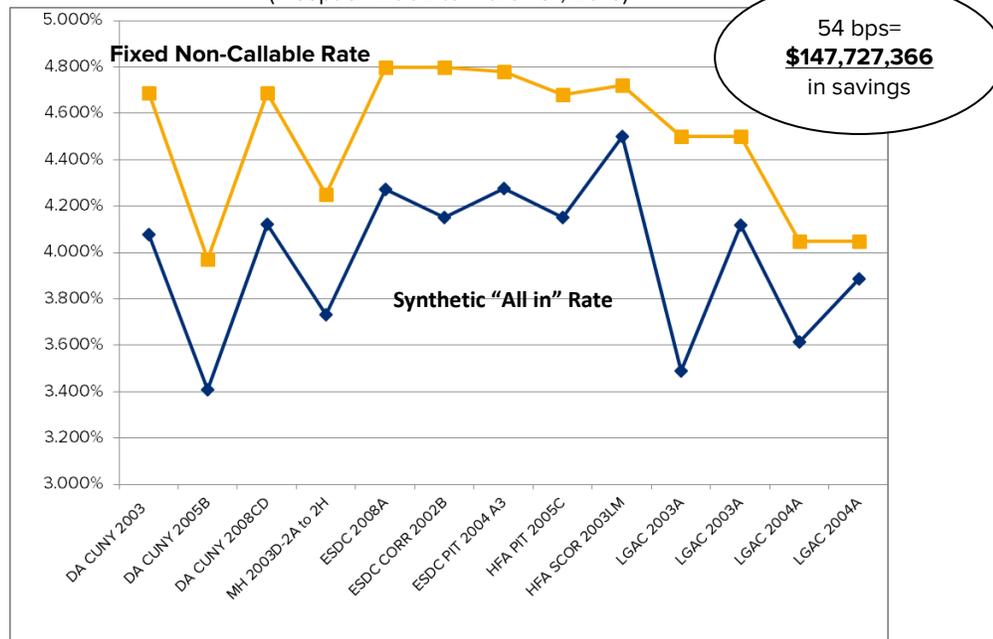
<sup>1</sup> (weighted averages)

<sup>2</sup> Represents the interest rates the State would have paid if non-callable fixed rate bonds were issued.

The following graph illustrates the savings for the entire synthetic fixed rate swap portfolio, from inception to March 31, 2016, by comparing the “all-in” synthetic fixed swap rate to the fixed non-callable bond rate. The State’s swap series remain below the fixed non-callable rate, thus continuing to produce savings.

**Graph 2 - Synthetic Fixed Rate Swap Savings**

(Inception 2002 to March 31, 2016)



## Prior Synthetic Variable Rate Swap Portfolio

### General Overview

As of March 31, 2011, the State no longer had synthetic variable rate swaps outstanding. During FY 2011 the State terminated both (1) \$77 million of current-starting synthetic variable rate swaps (original notional amount \$327 million), and (2) \$618 million of forward-starting synthetic variable rate swaps and received a \$42.8 million payment from swap counterparties. The difference between the two types was the effective date of the swap. *Current-starting* synthetic variable rate swaps took effect at closing. For *forward-starting* synthetic variable rate swaps, the effective date was a preset date in the future, at which time swap payments would have been exchanged. The State's first forward-starting variable rate swap was scheduled to start in March 2014.

Synthetic variable rate swaps were first employed by the State in 2004 to diversify the State's variable rate debt portfolio and take advantage of the most economical variable rate product available in the market. The current-starting synthetic variable rate portfolio included swaps with five counterparties and three authorized issuers. The average life for all current synthetic variable rate swaps varied from approximately two to six years. The following table summarizes the current-starting variable rate swaps.

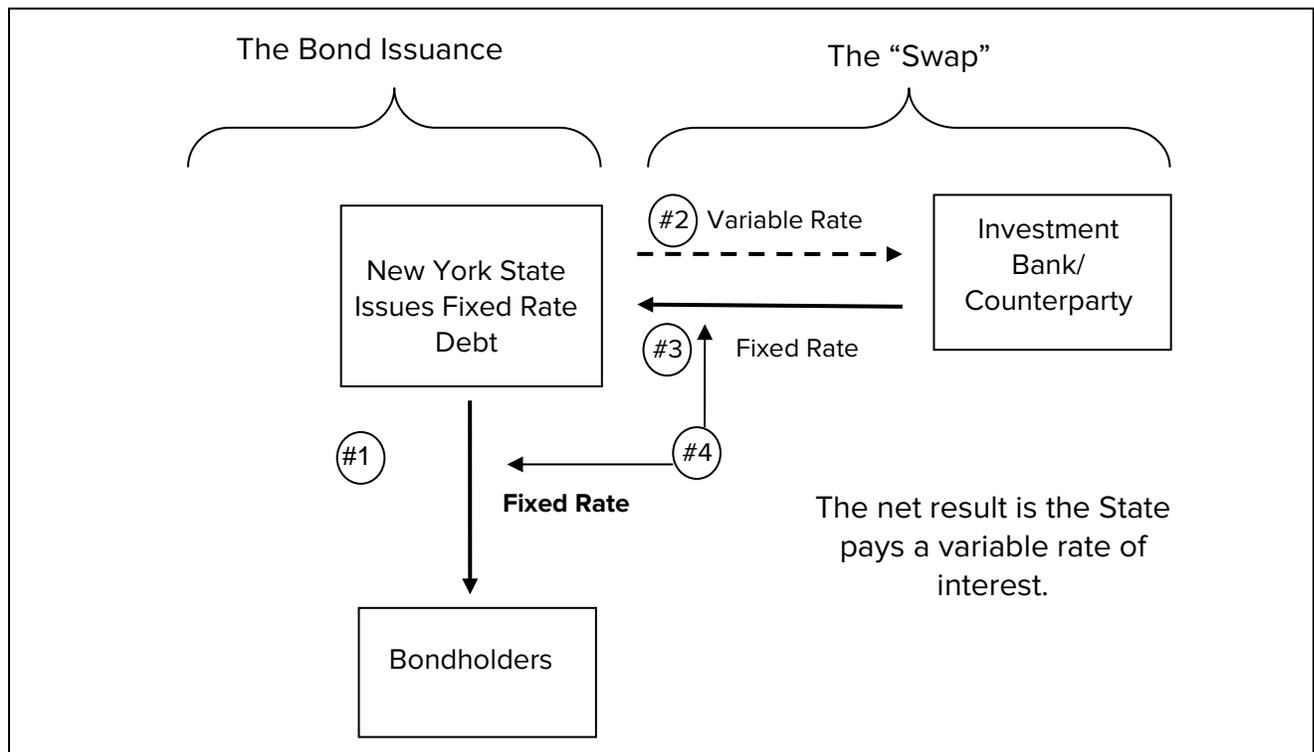
**Table 5 – A “Snapshot” of Prior Synthetic Variable Rate (Current-Starting) Swap Portfolio**

Issuer	Series	Original Notional Amount	Synthetic VR Index	Origination Date	Average Life (years)
DA	PIT 2005A SF	\$ 9,905,000	SIFMA	3/24/2005	2.0
DA	PIT 2005D ED	\$ 65,725,000	SIFMA	3/24/2005	3.2
ESDC	PIT 2004A_4	\$ 50,880,000	SIFMA	12/22/2004	2.5
ESDC	PIT 2004B_2	\$ 30,520,000	SIFMA	12/22/2004	3.8
HFA*	PIT 2003B	\$ 83,740,000	LIBOR	4/19/2005	4.3
HFA*	PIT 2004B	\$ 51,715,000	LIBOR	4/19/2005	5.2
HFA*	PIT 2005B	\$ 34,985,000	LIBOR	4/19/2005	5.8
*Taxable	<b>Original Total:</b>	<b>\$ 327,470,000</b>			
	Amortized	\$ (250,783,750)			
	Terminated (9/22/10)	\$ 76,686,250			
	<b>Current Total:</b>	<b>\$0</b>			

## The Mechanics

Synthetic variable rate debt involves two separate transactions: (1) a fixed rate bond issuance, and (2) a swap (between the State and the counterparty) to effectively convert the fixed rate into a variable rate. The net result of the two transactions is a debt obligation that has similar characteristics to a traditional variable rate bond. Figure 2, shows the steps of a synthetic variable rate swap.

**Figure 2 – Mechanics of a Synthetic Variable Rate Swap**



### Steps:

1. New York State issues fixed rate debt.
2. The State enters into a swap and pays the counterparty a variable rate (i.e., a synthetic variable rate).
3. The counterparty pays the issuer a fixed rate.
4. The State uses the fixed rate receipts from the counterparty to cover the debt service on the fixed rate bonds and is left with a “synthetic” variable rate cost.

## The “All-In” Synthetic Variable Rate

Performance for synthetic variable rate swaps is measured by comparing an “all-in” rate paid by the State to an “all-in” rate the State would have paid with the issuance of traditional variable rate bonds. The “all-in” synthetic variable rate is calculated by using the variable rate the State is paying to the counterparty (Column A) and subtracting the “fixed benefit” the State is receiving (Column B) as explained below in the Fixed Benefit section.

**Table 6 –Synthetic Variable Rate “All In” Rate Calculation**

Issuer	Series	Synthetic VR Index	Original Notional Amount	(A)	(B)	(C=A-B)
				Variable Rate Index	Fixed Benefit	“All-in” Synthetic Variable Rate
DA	PIT 2005A SF	SIFMA	\$ 9,905,000	3.233%	0.107%	3.126%
DA	PIT 2005D ED	SIFMA	\$ 65,725,000	2.350%	0.100%	2.250%
ESDC	PIT 2004A_4	SIFMA	\$ 50,880,000	2.343%	0.085%	2.258%
ESDC	PIT 2004B_2	SIFMA	\$ 30,520,000	2.343%	0.100%	2.243%
HFA*	PIT 2003B	LIBOR	\$ 83,740,000	2.971%	0.600%	2.371%
HFA*	PIT 2004B	LIBOR	\$ 51,715,000	2.971%	0.427%	2.544%
HFA*	PIT 2005B	LIBOR	\$ 34,985,000	2.971%	0.025%	2.946%
<i>Weighted Averages:</i>			Tax Exempt Series	<b>2.37%</b>	<b>0.10%</b>	<b>2.27%</b>
<b>* Taxable</b>			HFA Taxable Series	<b>2.97%</b>	<b>0.43%</b>	<b>2.54%</b>

<b>Original Total:</b>	<b>\$ 327,470,000</b>
Amortized	\$ (250,783,750)
Terminated (9/22/10)	\$ 76,686,250
<b>Current Total:</b>	<b>\$0</b>

- A Variable Rate Index.** The variable rate index (column A) represents the variable rate the State is paying to the counterparties. For tax-exempt swaps, the counterparty is paid the SIFMA index, re-setting on a weekly basis. For the HFA taxable swaps, the State is paying the LIBOR index, also re-setting weekly. The rates reflected above are the average of the indexes from the swap effective date until present.
- B Fixed Benefit.** The fixed benefit (column B) is the rate advantage the State realizes between the true interest cost (TIC) of the original fixed bond issuance and the actual fixed rate the State is receiving from the counterparty.

## The “All-In” Natural Rate

The actual “all-in” natural variable rate is the estimated variable rate the State would have paid, plus the associated support costs, if it did not enter into a swap agreement. The “all-in” natural rate, shown in column F of Table 7 below, consists of two variables: the actual variable rate paid on the bonds (Column D), plus the support costs needed to issue variable rate debt (Column E).

**Table 7 –Natural Variable Rate “All-In” Rate Calculation**

Issuer	Series	Original Notional Amount	(D)	(E)	(F=D+E)
			Natural Variable Rate	Support Costs	“All-in” Natural Rate
DA	PIT 2005A SF	\$ 9,905,000	3.160%	0.260%	3.420%
DA	PIT 2005D ED	\$ 65,725,000	2.760%	0.260%	3.020%
ESDC	PIT 2004A_4	\$ 50,880,000	2.700%	0.260%	2.960%
ESDC	PIT 2004B_2	\$ 30,520,000	2.600%	0.260%	2.860%
HFA*	PIT 2003B	\$ 83,740,000	3.096%	0.260%	3.356%
HFA*	PIT 2004B	\$ 51,715,000	3.096%	0.260%	3.356%
HFA*	PIT 2005B	\$ 34,985,000	3.096%	0.260%	3.356%
<i>Weighted Averages:</i>		Tax Exempt Series	<b>2.73%</b>	<b>0.26%</b>	<b>2.99%</b>
<b>* Taxable</b>		HFA Taxable Series	<b>3.10%</b>	<b>0.26%</b>	<b>3.36%</b>

<b>Original Total:</b>	<b>\$ 327,470,000</b>
Amortized	\$ (250,783,750)
Terminated (9/22/10)	\$ 76,686,250
<b>Current Total:</b>	<b>\$0</b>

- D Natural Variable Rate.** The natural variable rate is the average rate the State pays on existing variable rate bonds without support costs. It is based on the same time period as the synthetic variable rate swaps and a composite rate for all natural variable rate products underlying the State’s synthetic fixed rate swaps.
- E Support Costs.** Variable rate support costs represent the ongoing costs the State must pay annually to maintain the variable rate debt issued in the transaction. As stated above, the State uses two different types of variable rate bonds – ARS and VRDBs. Both have slightly different support costs. Examples include broker-dealer fees and auction agent fees for ARS, and liquidity facility fees and remarketing fees for VRDBs.

# Annual Performance Report - Interest Rate Exchange and Similar Agreements



## The Resulting Savings

The savings, or positive performance of the prior synthetic variable rate swap portfolio, is shown in Table 8 below in three formats: percentage, basis points and dollar savings. The savings from synthetic variable rate swaps averaged 72 basis points for tax-exempt swaps and 81 basis points for the HFA taxable swaps on a weighted average basis. Since the inception of the State's variable swaps, \$52.6 million in actual savings was realized. Included in the \$52.6 million total is a payment of \$2.7 million the State received as compensation for the automatic termination of one of its forward-starting variable rate swaps (\$75.1 million notional amount) as a result of the Lehman Brothers Holdings Inc. bankruptcy. Also included in the savings calculation is a \$42.8 million payment received in FY 2012 by the State from swap counterparties due to the termination of the entire variable rate swap portfolio - \$5.6 million associated with current-starting swaps and \$37.2 million associated with forward-starting swaps. As shown below, these variable rate products produced a lower cost of funds than issuing natural variable rate debt because of the associated support costs.

**Table 8 – Prior Synthetic Variable Swap Portfolio Savings**

Issuer	Series	Original Notional Amount	(C=A-B)	(F=D+E)	Swap Advantage =(F-C)		
			"All-in" Synthetic Variable Rate	"All-in" Natural Rate	Percentage (%)	Basis Points (bps)	Dollars (\$)
DA	PIT 2005A SF	\$ 9,905,000	3.126%	3.420%	0.294%	29	\$55,523
DA	PIT 2005D ED	\$ 65,725,000	2.250%	3.020%	0.770%	77	\$1,020,465
ESDC	PIT 2004A_4	\$ 50,880,000	2.258%	2.960%	0.702%	70	\$378,764
ESDC	PIT 2004B_2	\$ 30,520,000	2.056%	2.860%	0.804%	80	\$468,158
HFA*	PIT 2003B	\$ 83,740,000	2.371%	3.356%	0.985%	99	\$2,968,727
HFA*	PIT 2004B	\$ 51,715,000	2.544%	3.356%	0.812%	81	\$1,637,672
HFA*	PIT 2005B	\$ 34,985,000	2.946%	3.356%	0.410%	41	\$553,470
<i>Weighted Averages:</i>		Tax Exempt Series	<b>2.27%</b>	<b>2.99%</b>	<b>0.72%</b>	<b>72</b>	<b>\$7,082,779</b>
<b>* Taxable</b>		HFA Taxable Series	<b>2.54%</b>	<b>3.36%</b>	<b>0.81%</b>	<b>81</b>	

Lehman Automatic Termination (Receipt) <sup>1</sup> :	\$2,746,746
Termination Payment Current Swaps (9/22/10):	\$5,610,200
<b>Total Saving (Current Swaps):</b>	<b>\$15,439,725</b>
Termination Payment Forward Swaps (9/22/10):	\$37,190,000
<b>Overall Variable Swaps Savings:</b>	<b>\$52,629,725</b>

<sup>1</sup> Represents the amount received from Lehman Brothers due to bankruptcy for automatic termination of a swap agreement (\$75.1 million notional amount).

## Terminated Swaps - \$4.6 Billion

From FY 2009 through FY 2012, the State terminated \$4.6 billion in swap agreements, as shown in the table below. Of this amount, \$3.8 billion were terminated as part of refunding transactions that resulted in termination costs being financed over a multiyear period. In these instances, swap performance is measured over the life of the original swap, as explained in the following section. For the balance (\$876 million), the State either paid (or received) one-time cash payments to settle the swap termination cost. In these cases, performance was measured to the point of termination.

**Table 9 – Terminated Swap Agreements**

	Issuer	Associated Bond Series	Notional Amount	Swap Termination Payment Date
<b>FY 2009</b> <i>Refunded with Fixed Rate</i>	DASNY Mental Health	2003 F-2	\$119,450,000	9/30/2008
	DASNY Mental Health	2003C,D	\$342,825,000	3/18/2009
	ESDC	2002B	\$455,000,000	7/1/2008
	DASNY UCC	2005C	\$125,000,000	9/9/2009
	DASNY PIT	2005C	\$54,080,000	9/30/2008
	DASNY CUNY	2005C	\$58,880,000	9/30/2008
	DASNY CUNY	2003S	\$292,025,000	8/27/2008
<i>Unhedged Variable Rate</i>	Thruway CHIPs	2003C	\$100,000,000	9/30/2008
	ESDC PIT	2004A3C	\$53,074,000	9/30/2008
	DASNY CUNY	2003S	\$74,615,000	9/30/2008
<b>FY 2009 Sub-Total:</b>			<b>\$1,849,070,879</b>	
<b>FY 2010</b> <i>Refunded with Fixed Rate</i>	LGAC	2003A 5/6	\$191,665,000	6/3/2009
	LGAC	2008B C/D	\$105,225,000	6/3/2009
	DASNY MH	2003D2, B,	\$208,900,000	6/24/2009
	Thruway CHIPs	2003C	\$477,701,000	10/1/2009
	DASNY MH	2003D2 A,I	\$260,500,000	3/4/2010
	DASNY MH	2003C2	\$72,500,000	3/4/2010
<b>FY 2010 Sub-Total:</b>			<b>\$1,316,491,000</b>	
<b>FY 2011</b> <i>Refunded with Fixed Rate</i>	ESDC	2008A	\$220,000,000	5/26/2010
	HFA	2003A,B,C,D	\$192,800,000	5/26/2010
<b>FY 2011 Sub-Total:</b>			<b>\$412,800,000</b>	
<b>FY 2012</b> <i>Refunded with Fixed Rate</i>	LGAC	2008B BV2	\$188,320,000	8/31/2011
	<b>FY 2012 Sub-Total:</b>			<b>\$188,320,000</b>
			<b>\$3,766,681,879</b>	
FY 2009 Cash Defeasance <sup>1</sup> :			\$101,100,000	
FY 2009 Forward Starting Terminated Swaps <sup>1</sup> :			\$75,075,000	
FY 2009 Current Synthetic Variable Rate Terminated Swaps <sup>1</sup> :			\$5,106,250	
Synthetic Variable Termination 9/22/2010:			\$694,706,250	
			<b>\$4,642,669,379</b>	

<sup>1</sup>See next paragraph for more detail.

Of the total swap terminations shown above, approximately \$876 million (the last four items listed) are not included in this section, but are captured elsewhere, because a different performance approach was applied. This includes swaps that were terminated using cash resources (\$101 million) and variable rate swaps (\$775 million). CUNY swaps were paid off with \$101 million of cash, eliminating future cash flows and the ability to measure performance. Thus, the termination cost for these swaps is assumed to be the actual cash (mark-to-market) payments made to counterparties to terminate them. Approximately \$80 million of variable rate swaps were terminated due to the bankruptcy of Lehman Brothers in September 2008. This includes \$75.1 million of forward starting synthetic variable rate swaps and \$5 million of current synthetic variable rate swaps. Additionally, the State terminated \$694.7 million of variable rate swaps comprised of \$618 million of forward-starting swaps and \$76 million of current-starting swaps, in FY 2011 to “lock-in” the benefits of a historically low interest rate environment. The forward-starting swaps have no associated cash flows to measure, since the swaps are not effective until a future date. Consequently, the cash payment received from both the Lehman and FY 2011 forward-starting terminations was recorded as the termination cost (or benefit). The same process was used for \$76 million of current synthetic variable rate swaps also terminated in FY 2011 and the \$5 million current synthetic variable rate swaps associated with the Lehman bankruptcy. The payments (or receipts) received from these terminations are captured in the previous section, as offsets to the operating results.

## **Synthetic Fixed Rate Swaps -- \$3.8 Billion**

Since 2008, the State has terminated \$3.8 billion in synthetic fixed rate swaps, including \$188.3 million during FY 2012, and financed the costs over multiyear periods. The overall net cost to the State for all terminations is \$55 million in net present value (\$270 million in mark-to-market value). This includes the automatic termination of approximately \$565 million of swaps and a \$12.1 million payment due to the bankruptcy of Lehman Brothers Holdings, Inc. The explanation that follows discusses the approach used by the State to record the net present value costs for terminating its synthetic fixed rate swaps.

## **Mark-to-Market Discussion**

The State’s swap agreements were terminated at their mark-to-market values, which is a defined calculation prescribed in related swap documents. Based on this calculation, the State paid \$270 million to its counterparties (investment banks) to terminate \$3.8 billion of synthetic fixed rate swaps. In the performance analysis, however, the termination costs were normalized using a present value approach, which was recommended by the State’s financial advisor, Public Resources Advisory Group (PRAG). The recommended approach analyzes the present value benefit/costs of swap terminations, assuming the swaps remained in place through their original term. Conceptually, the analysis measures the cost of using non-callable fixed rate bonds initially as compared to the actual cost of the alternative used, i.e., a synthetic product.

Several factors contribute to the present value cost of the swap terminations (\$55 million) being less than the cash payment made to terminate the swaps (\$270 million), including:

**Initial Favorable Swap Performance.** For the swaps terminated, the State experienced favorable performance (i.e., savings) for approximately six years prior to termination. The actual debt service costs for the synthetic fixed rate alternative was substantially less than a comparable fixed rate issue. As a result, the State accrued savings from the swap execution date, generally 2002 and 2003, through early 2008 and 2009 (approximately) when the credit markets changed. The initial benefits from the swaps offset a portion of the termination costs.

**Decline in Fixed Interest Rates.** Fixed interest rates have declined over the period between when the State entered into its swaps and when the State re-entered the fixed rate credit markets, in connection with swap terminations. At the same time, the average term for the financings has declined, allowing the State to use shorter-term, lower-cost financing. In refinancing bonds underlying the State's synthetic fixed rate swaps, the State has been able to lock in fixed interest rates lower than the rates it would have paid if fixed rate bonds were used originally. This rate differential produces a benefit to the State, which offsets a portion of the termination costs.

## Measuring Performance of Terminated Swaps

To analyze the performance of the terminated swaps, a present value calculation was used to compare the debt service costs of: (1) **a hypothetical non-callable fixed rate bond issue**, to (2) **the actual debt service cost of the associated terminated swap**. Using this analysis, the State concluded that the “all in” present value cost of terminating its \$3.8 billion in swaps was **\$55 million**.

The following table outlines the results of the performance analysis for the \$3.8 billion of the State's terminated swaps. Based on the methodology used, the State's present value cost of entering into swaps, and later terminating the swaps and issuing fixed rate bonds, versus issuing fixed rate bonds initially, was approximately \$55 million. As shown below, the State paid costs because the actual all-in borrowing rate was higher than the hypothetical non-callable fixed rate for nine swaps (e.g., DASNY Mental Health of \$32.4 million). In the case of the opposite relationship, the State actually received savings from the remaining eight swaps (e.g., DASNY CUNY 2003S of \$1.4 million).

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**Table 10 – Present Value Benefit of Terminated Swaps  
As of March 31, 2012**

	Issuer	Series	Notional Amount	Swap Termination Payment Date	Non-Callable Fixed Rate	Actual Borrowing Rate	PV Debt Service Savings	PV Debt Services Savings (% of Par)
<b>FY 2009</b> <i>Refunded with Fixed Rate</i>	DASNY Mental Health	2003 F-2	\$358,350,000 \$119,450,000	9/30/2008 3/26/2009	4.02%	4.82%	(\$32,391,985)	-6.78%
	DASNY Mental Health	2003C,D	\$149,700,000	12/12/2008	4.25%	6.10%	(\$33,627,928)	-22.46%
	ESDC	2002B	\$455,000,000 \$125,000,000	7/1/2008 9/9/2009	4.80%	4.84%	(\$2,728,753)	-0.47%
	DASNY UCC	2005C	\$54,080,000	9/30/2008	4.42%	5.79%	(\$9,076,276)	-16.78%
	DASNY PIT	2005C	\$58,880,000	9/30/2008	4.18%	5.30%	(\$9,266,613)	-15.74%
	DASNY CUNY	2003S	\$292,025,000 \$100,000,000	8/27/2008 9/30/2008	4.69%	4.66%	\$1,368,135	0.35%
<i>Unhedged Variable Rate</i>	Thruway CHIPs <sup>2</sup>	2003C	\$53,074,000	9/30/2008	4.39%	4.41%	(\$110,481)	-0.21%
	ESDC PIT	2004A3C	\$74,615,000	9/30/2008	4.78%	4.07%	\$8,109,915	10.87%
	DASNY CUNY	2003S	\$24,421,879	9/30/2008	4.69%	3.80%	\$3,035,577	12.43%
<b>FY 2009 Sub-Total:</b>			<b>\$1,864,595,879</b>				<b>(\$74,688,411)</b>	
<b>FY 2010</b> <i>Refunded with Fixed Rate</i>	LGAC	2003A 5/6	\$191,665,000	6/3/2009	4.50%	4.11%	\$8,300,646	4.33%
	LGAC	2008B C/D	\$105,225,000	6/3/2009	4.05%	4.15%	(\$1,460,612)	-1.39%
	DASNY MH	2003D2, B, G	\$208,900,000	6/24/2009	4.25%	4.37%	(\$2,912,647)	-1.39%
	Thruway CHIPs <sup>2</sup>	2003C	\$477,701,000	10/1/2009	4.39%	4.41%	(\$994,325)	-0.21%
	DASNY MH	2003D2 A,I	\$260,775,000	3/4/2010	4.25%	4.05%	\$6,388,674	2.43%
	DASNY MH	2003C2	\$72,500,000	3/4/2010	4.25%	3.65%	\$4,506,345	6.22%
<b>FY 2010 Sub-Total:</b>			<b>\$1,316,766,000</b>				<b>\$13,828,082</b>	
<b>FY 2011</b> <i>Refunded with Fixed Rate</i>	ESDC	2008A	\$220,000,000	5/26/2010	4.80%	4.79%	\$160,762	0.07%
	HFA	2003A,B,C,D	\$192,800,000	5/26/2010	4.50%	4.34%	\$3,428,176	1.78%
<b>FY 2011 Sub-Total:</b>			<b>\$412,800,000</b>				<b>\$3,588,938</b>	
<b>FY 2012</b> <i>Refunded with Fixed</i>	LGAC	2008B BV2	\$188,320,000	8/31/2011	4.50%	4.41%	\$2,200,746	1.17%
	<b>FY 2012 Sub-Total:</b>			<b>\$188,320,000</b>				<b>\$2,200,746</b>
<b>Total<sup>1</sup>:</b>			<b>\$3,782,481,879</b>				<b>(\$55,070,644)</b>	

1. Total does not include the \$5.1 million notional amount for terminated current synthetic variable rate swaps, the \$75.1 million in forward starting synthetic variable rate swaps due to the bankruptcy of Lehman Brothers and the \$101 million in swaps defeased with cash.

2. The Thruway CHIPs 2003C swap was refunded with fixed rate bonds as of 10/1/2009.

## Calculating the Present Value

The methodology for analyzing the termination costs was developed in consultation with the State's financial advisor, Public Resources Advisory Group (PRAG). To accurately calculate the present value of the debt service costs of the hypothetical fixed rate bond issue and the actual costs from the swap, numerous factors and assumptions were considered.

### Refunded with Fixed Rate Bonds:

- **Non-Callable Fixed Rate:** The debt service payments were based on the following assumptions.
  - Non-callable bond rate. In order to accurately compare a traditional fixed bond rate to the actual borrowing rate, it is important to use a non-callable fixed rate bond, rather than a typical fixed rate bond with optional redemption provisions. The reason is that the State may terminate a swap early, but only at the market value (i.e., mark-to-market), not at the par value. Since no opportunity exists to terminate the swap for economic reasons, it is reasonable to assume the swap will remain outstanding through maturity, unless other factors dictate termination.
  - Principal amortization identical to the notional amount of the corresponding swap agreement.
  - Use interest rates from transactions priced at the time of the original bond issuance.
- **Actual Borrowing Rate:** The debt service payments for each bond series depend on whether the associated variable rate bonds were refunded with fixed-rate bonds, and the timing of any such refunding, as defined below.
  - **Fixed-rate refunding at the time swaps were terminated:** For these bonds, the cash flows include all variable rate debt service payments and support costs paid while the bonds were outstanding, as well as all fixed rate swap payments made and floating swap receipts through the swap termination date. The swap termination payment, if paid with cash, is counted as debt service on the date the payment is made. The fixed rate refunding debt service, less any costs of issuance not associated with the refunded bonds, is then used from the date of the refunding through the final maturity date.
  - **Fixed-rate refunding after swaps were terminated:** In cases where variable rate bonds were refunded with fixed rate bonds after the swap termination date, the actual variable rate bond debt service is included until the bonds are called and the fixed rate debt service takes its place.

## Unhedged Variable Rate

In cases where variable rate bonds are not refunded, but are left outstanding, a rate of 4.0 percent, including support costs, is assumed through the remaining life of the bonds.

## Other Considerations

The present value of the cash flow for the debt service is calculated to the original delivery date of the variable rate bonds. In addition, a separate discount rate is used for each series. This was determined by discounting the bond series cash flows back to the delivery date of the variable rate bonds, and produced a value equal to the original variable rate notional amount.

## III. General Swap Information

### What is a Swap?

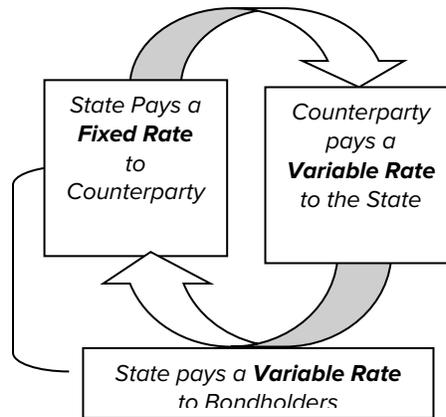
Interest rate exchange agreements have been part of the municipal finance market for two decades. State governments, large cities and counties participate in the swap market to lower borrowing costs and diversify their portfolios. In addition to New York State, other large governments in the swap market include California, Texas, New Jersey, Los Angeles and New York City.

A swap is a type of derivative, a contractual agreement between two parties linked to an underlying security. The two parties are referred to as “counterparties” (usually the State and an investment bank). The two parties agree to exchange payments for a fixed period of time. For New York State swaps, the maximum term of the swap can be no greater than the life of the underlying bonds (30 years).

Swap payments are based on an agreed-upon amount, called the “notional amount,” because no principal is actually exchanged between the two parties. Swap agreements are generally for the life of the bond, but can be negotiated for a shorter term. Swaps are generally based on a standard floating rate index and a market-based fixed payment rate. The two most commonly used variable rate indices are the London Interbank Offered Rate (LIBOR) and the Securities Industry and Financial Markets Association (SIFMA) Municipal Swap Index.

A *synthetic fixed rate swap*, depicted in Figure 3, can provide the State a less costly means to enter the fixed rate debt market, by taking advantage of the expected difference between short-term and long-term interest rates, and the expected relationships between taxable and tax-exempt benchmarks. In exchange, the issuer takes on certain risks that are not part of traditional fixed rate financings. These include hedging on the yield curve, the relative stability of taxable and tax-exempt markets, and counterparties’ ability to continually make payments. In these transactions, the State issues variable rate bonds and effectively converts them to fixed rate debt using a swap. A *synthetic variable rate swap* enabled the State to access a lower cost of variable rate debt by receiving a fixed rate payment in exchange for paying a variable rate. Either of the two structures can be used in conjunction with existing debt or combined with the issuance of new debt.

**Figure 3 – A Synthetic Fixed Rate Swap**



## IV. New York State Swap Fundamentals

New York State began its swap program in 2002. Since that time, the State has used swaps to diversify its debt portfolio and lower borrowing costs. Generally, the State incorporated swaps into a bond issuance if a significantly lower cost of borrowing could be achieved versus a traditional fixed rate bond issuance. The State does not have any plans to enter into any new swap agreements in the near term.

### Statute

Article 5-D of the State Finance Law authorizes the use of interest rate exchange agreements. The statute was implemented as a debt management tool to minimize debt service costs and to diversify the State's debt portfolio. Authorized issuers of State-supported bonds may enter into interest rate exchange agreements in a total notional amount that does not exceed 15 percent of State-supported debt. The statutory provisions include criteria and limitations to ensure swaps are prudently managed and continue to reduce the cost of State-supported debt. These criteria include:

- The adoption of uniform interest rate exchange guidelines;
- Minimum counterparty ratings of AA, and collateral requirements should their ratings decrease;
- A finding by an independent financial advisor that the terms and conditions of all swaps reflect a fair market value;
- The use of standardized interest rate exchange agreements; and
- A monthly reporting requirement by the State's authorized issuers and oversight by DOB to monitor and assess overall swap performance.

# Annual Performance Report - Interest Rate Exchange and Similar Agreements

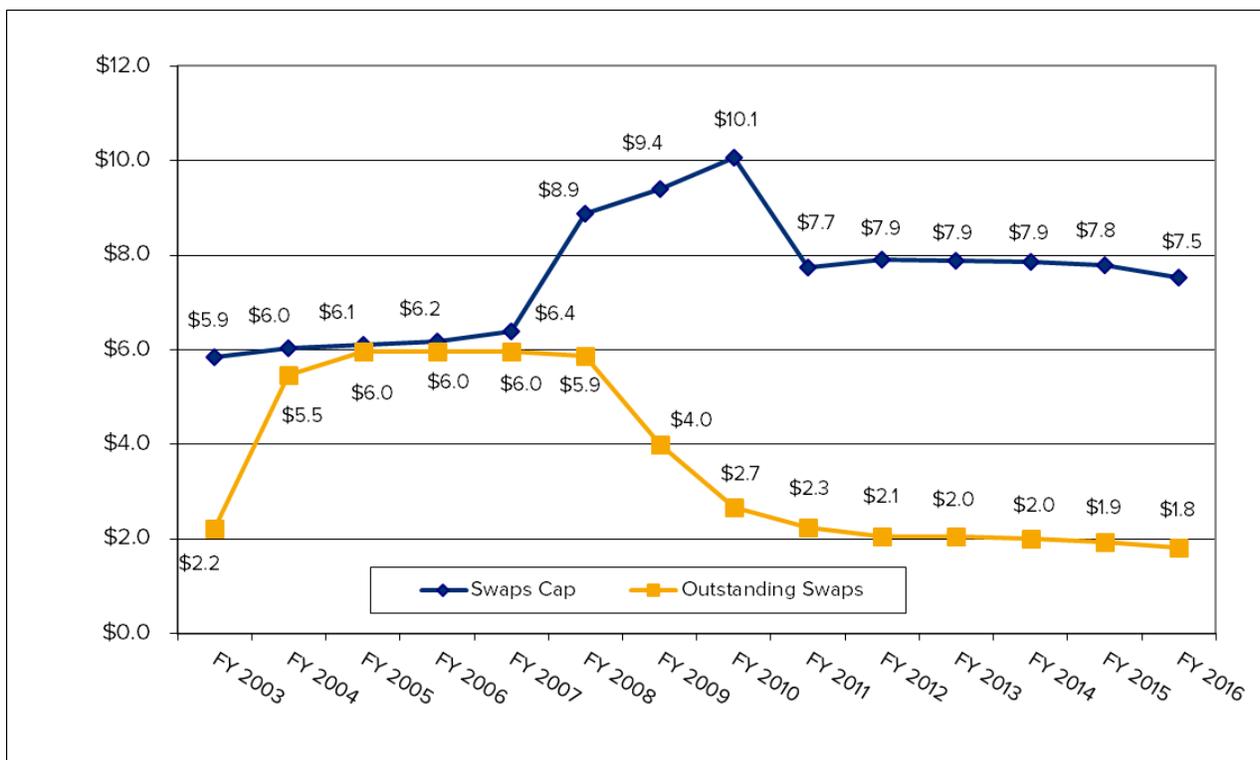


The use of swaps is governed by explicit statutory and policy guidelines intended to reduce the State’s risk exposure and prohibit speculative transactions. See Appendix D, *The Dormitory Authority of the State of New York Guidelines for Interest Rate Exchange Agreements* and Appendix F, *New York State Variable Rate and Swaps Statutory Framework*.

## Capacity and Usage

As stated above, the authorized issuers of State-supported bonds may enter into interest rate exchange agreements in a total notional amount that does not exceed 15 percent of State-supported debt. After the swap statute was enacted in 2002, the State took advantage of substantial savings in the swap market, using nearly all available swaps capacity. However, the changes in the credit market prompted the State to adjust its swap portfolio, including terminations of over \$4.6 billion of swaps. At present, the capacity for “new” swaps is \$5.7 billion. However, due to current financial conditions and continued uncertainty concerning the regulation and oversight of derivative products in the variable rate market, the State does not plan to enter into any new swaps.

**Graph 3 – Synthetic Fixed Rate Swap Capacity**  
(in billions)



## Low Risk Profile

In September 2004, Standard and Poors' (S&P) developed a Debt Derivate Profile (DDP) scoring methodology to improve the analysis and transparency of swaps, and their impact on overall credit quality. DDP scores ranged from 1.0 to 4.0, with 1.0 indicating the lowest credit risk. DDP scores were created principally to show an issuer's potential financial loss from derivatives, due to collateralization of a transaction or early termination. The DDP score was a weighted average of four factors: (1) issuer collateral posting and termination risk, (2) counterparty termination risk, (3) economic viability of the swap structure, and (4) the quality of the swap and an issuer's debt management policies and procedures.

While S&P discontinued publishing DDP scores in FY 2012, up until that point New York State received a score of 1.5. The 1.5 score reflected S&P's view that the State's swap portfolio posed a very low risk to the State's credit quality. Key determinants behind the State's score included the swaps' low counterparty risk and low termination risk. The State also had average basis risk, since all of the floating-to-fixed swaps are set to 65 percent of LIBOR. Other scoring factors included the State's recent reduction in its variable rate and swap exposure.

The State's swap policies and management plan were also rated very strong. Both the statutory provisions and DOB's swap policies are institutionally established. The swaps are monitored and reported via a monthly mark-to-market report. This report, as well as the swap guidelines, is posted on DOB's website, thereby improving overall transparency, and all swap documentation is standardized.

In addition to DOB's swap guidelines, the State has a requirement that all counterparties must have a rating of 'AA' or higher, with collateralization required in the event of a downgrade. Plus, the State must hire an independent financial advisor to determine whether the terms and conditions of a swap reflect fair market value. Finally, all swap payments and interest rate exposure are covered in the State's debt service appropriation bill, thereby ensuring payments to counterparties.

## V. Authorized Issuers and Counterparties

### Issuers

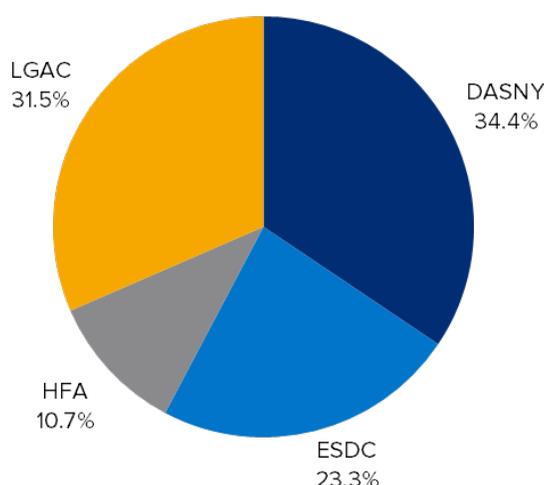
The authorized issuers that enter into interest rate exchange agreements must use the International Swap and Derivatives Association (ISDA) Master Agreement in connection with State-supported debt obligations. An issuer cannot enter into a swap agreement unless the agreement reasonably meets either or both of the following objectives: (1) results in lower net cost of borrowing with respect to State-supported debt and/or (2) provides benefits and flexibility to the State with respect to financial exposure.

Prior to entering into a swap agreement, each authority must work in conjunction with DOB to evaluate potential risks, including counterparty, termination, rollover, basis, tax and amortization risks. In addition, the issuer and DOB must consider longer-term issues, such as the costs of borrowing, historical trends in the market, the market capacity for variable rate bonds, credit enhancements and the potential impact on the future ability to call bonds. All agreements,

including provisions regarding extensions, reversals, options and terminations, require the written approval of the Director of DOB.

In addition, each swap agreement is subject to a written independent finding that the terms and conditions reflect a fair market value of such agreement, as of the date of its execution, regardless of whether the agreement is competitive or negotiated. The term of any agreement cannot exceed the final maturity of the bonds issued in conjunction with the agreement. Below is a breakdown of the swap portfolio by the State’s authorized issuers.

**Chart 2 – New York State Swap Authorized Issuers**



**Table 11 - New York State Swap Authorized Issuers’ Swap Portfolio Breakdown**

Issuer	Synthetic Fixed Notional Amount	% of Total
DA	\$625,873,121	34.4%
ESDC	\$423,935,000	23.3%
HFA	\$195,350,000	10.7%
LGAC	\$573,240,000	31.5%
	<b>\$1,818,398,121</b>	<b>100.0%</b>

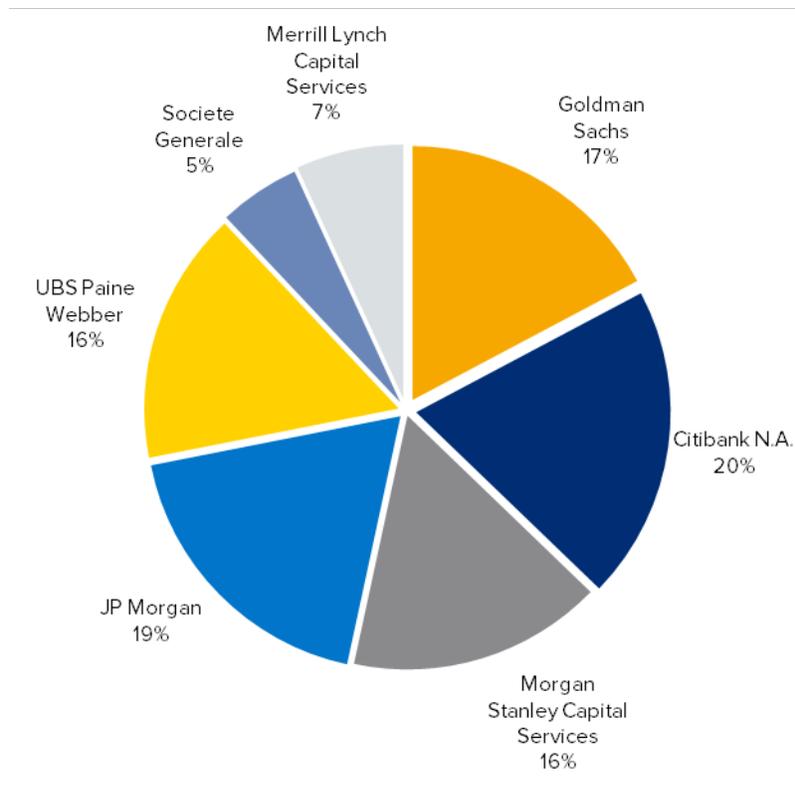
## Counterparties

Each authorized issuer maintained a list of approved counterparties. Counterparties are evaluated based on the requirements of Article 5-D of the State Finance Law, their experience and presence in the municipal swap market, the maintenance of a two-way book that will assist the hedging of exposure, and other factors deemed necessary by the issuer. The issuers also procure credit enhancement and liquidity facilities, as well as establish reserves in connection with all swap agreements, if needed.

The State's swap portfolio is diversified across seven counterparties. Citibank has the highest exposure at 20 percent. Counterparty risk is also managed through the State's swap policy. The policy dictates that counterparties must have a credit rating that is within the two highest investment grade categories from at least one nationally recognized statistical rating organization (e.g., Standard and Poor's), have significant experience and presence in the municipal swap market, and maintain a two-way book. The State's counterparties have good credit ratings, with collateral required to be posted for any counterparty that is downgraded below the statutory minimum of AA-. Chart 3 depicts all counterparties for the State as of March 31, 2016.

Since 2007, certain counterparties have been downgraded below the statutory minimum of AA-. In the event of a downgrade and a mark-to-market valuation in the State's favor, a counterparty is required to post collateral to comply with the collateralization provisions in Article 5-D of the State Finance Law. In addition, all State swap agreements contain, by law, an early termination clause that allows for optional termination at the State's request.

**Chart 3 – New York State Swap Agreement Counterparties**



# Annual Performance Report - Interest Rate Exchange and Similar Agreements



**Table 12- New York State Swap Agreement Counterparties Swap Portfolio Breakdown**

Counterparty	Synthetic Fixed Notional Amount	% of Total
Goldman Sachs	\$313,341,229	17.2%
Citibank N.A.	363,426,689	20.0%
Morgan Stanley Capital Services	293,818,771	16.2%
JP Morgan	336,655,000	18.5%
UBS Paine Webber	292,885,716	16.1%
Societe Generale	94,140,000	5.2%
Merrill Lynch Capital Services	<u>124,130,716</u>	<u>6.8%</u>
<b>Total:</b>	<b>\$1,818,398,121</b>	<b>100.0%</b>

Table 13 depicts the credit ratings of all New York State swap counterparties as of March 31, 2016.

**Table 13 – Counterparty Credit Ratings**

Credit Rating Counterparty	Moody's		Standard & Poor's		Fitch	
	Sen. Unsec. Debt	Outlook	LT Issuer Credit	Outlook	Sen. Unsec. Debt	Outlook
Citibank NA	A1	Stable	A	Positive	A <sup>1</sup>	Stable
Goldman Sachs & Mitsui Marine Products	Aa2 <sup>2</sup>	Stable	AA+	Stable	NR	NR
JPMorgan Chase Bank <sup>3</sup>	Aa3	Stable	A+	Stable	AA-	Stable
Merrill Lynch and Co. <sup>4</sup>	Baa1	Stable	BBB+	Stable	A	Stable
Morgan Stanley	A3	Stable	BBB+	Stable	A	Stable
Societe Generale	A2	Stable	A	Stable	A	Stable
UBS AG	A1	Stable	A	Positive	A	Positive

<sup>1</sup>Senior Unsecured Debt rating not available, Long Term Issuer Default rating used instead.

<sup>2</sup>Senior Unsecured Debt rating not available, Long Term Counterparty rating used instead.

<sup>3</sup>Bear Stearns Financial Products has ceased operations, is now part of JPMorgan Chase Bank.

<sup>4</sup>Merrill Lynch and Co. is now a wholly owned subsidiary of Bank of America, NA. BofA ratings apply.

## VI. Monitoring Swap Performance

Before entering into a swap agreement, DOB and its authorized issuers must evaluate all associated risks. The risks must be identified, mitigation strategies agreed upon and performance measures defined. Below are risks associated with swap transactions and specific strategies employed by the State to mitigate such risks.

**Basis Risk** is the risk that floating rate payments received by the State in a fixed rate swap will be different from the floating rate bondholder payments they were designed to match. This can occur because the variable rate payments received by the State from the counterparty and the variable rate payments owed are based on different indices and the ratios between those indices change over time. To mitigate this, DOB routinely monitors the State's basis spreads and makes adjustments as necessary.

**Tax Risk** may cause the State's costs to rise if Federal income tax rates fall or if the tax exemption for municipal debt is modified or eliminated. If this occurs, the State's variable rate costs to bondholders would exceed payments from the counterparty. To address this issue, and since this risk is the same as the State faces when it issues variable rate bonds, the State employs a policy which counts the difference between the percent of LIBOR received on a synthetic fixed rate swap and 100 percent of LIBOR as additional variable rate debt under the State's separate variable rate debt cap.

**Counterparty Risk** is the risk that the counterparty will no longer perform its obligations under the contract, or that the counterparty's credit rating will decline to a point where there is uncertainty about its ability to perform. To mitigate this risk, the State sets minimum credit rating thresholds, employs standard documentation (ISDA), adopts interest rate exchange guidelines with all authorized issuers, evaluates the experience of a counterparty, ensures the counterparty employs a two-way book, and establishes a collateralization requirement of 102 percent of the swap value if their credit rating is downgraded to a predetermined level.

**Termination Risk** is the risk that an authorized issuer will be required to make a payment based on the market value of a swap in connection with an unforeseen termination of a swap. This occurred in the Lehman bankruptcy in 2008. As a precaution, the State's policy requires an appropriation equivalent to 35 percent of the notional amount of the swap as a reserve for potential termination payments.

**Amortization Risk** is the risk that the notional amount of the swap and the outstanding amount of the debt intended to be hedged will no longer be equal. To avoid this issue, State law restricts the maturity and amortization of the swap to that of the bonds.

**Liquidity Risk** is the inability to continue or renew a liquidity facility supporting State variable rate debt. The State routinely monitors the availability of liquidity support and market trends, but has limited options in a tightening credit market. Furthermore, the State maintains and reports on existing liquidity and letter of credit facilities to manage renewals on the most favorable terms possible, given market conditions.

## Glossary of Terms

**Auction Rate Securities (ARS)** – debt securities with a long-term nominal maturity with interest rates that reset through a modified Dutch auction, at pre-determined short-term intervals, usually 7, 28 or 35 days.

**Authorized Issuers** - the Dormitory Authority of the State of New York (DASNY), the New York State Environmental Facilities Corporation (EFC), the Housing Finance Agency (HFA), the New York State Thruway Authority (NYSTA) and the Urban Development Corporation (UDC d/b/a ESDC), (collectively, the “Authorized Issuers”).

**Counterparty** - is usually the entity with whom one negotiates on a given agreement, and the term can refer to either party or both, depending on context and can also refer to brokers, investment banks, and other securities dealers that serve as the contracting party when completing "over the counter" securities transactions

**Credit Rating Downgrade** – a negative change in credit ratings from a nationally recognized statistical rating organization.

**Dealers** – a firm acting as Principal in a securities transaction. Principals trade for their own account and risk.

**Hedge** – a position taken in order to offset the risk associated with some other position. Most often, the initial position is a cash position and the hedge position involved a risk-management instrument such as a swap.

**Letter of Credit (LOC)** - Additional source of security for issues of notes, commercial paper or bonds, with a bank issuing the letter of credit committing to pay principal of and interest on the securities in the event that the issuer is unable to do so. A letter of credit may also be used to provide liquidity for commercial paper, variable rate demand obligations and other types of securities

**LIBOR** - London Interbank Offered Rate is a daily reference rate based on the interest rates at which banks borrow unsecured funds from other banks in the London wholesale money market (or interbank market).

**Liquidity Facility** – an agreement with a third party, typically a bank, in which the third party agrees to purchase tendered variable rate demand obligations in the event that they cannot be remarketed.

**Notional Amount** – the pre-determined principal on which the exchange interest payments are based.

**SIFMA** - Securities Industry and Financial Markets Association is the leading securities industry trade group representing securities firms, banks, and asset management companies in the U.S.



# Annual Performance Report - Interest Rate Exchange and Similar Agreements

and Asia. SIFMA was formed on November 1, 2006, from the merger of the Bond Market Association and the Securities Industry Association.

**Swap Termination Payment** – A payment made by a counterparty that is required to terminate the swap. The payment is commonly based on market value of the swap, which is computed based on the rate on the initial swap and the rate on a replacement swap.

**Variable Rate Demand Bonds (VRDBs)** – are debt securities for which the interest rate is reset periodically, typically through a remarketing process.

## List of Appendices

### Appendix

- A. Synthetic Fixed Rate Cost Analysis Reports
- B. Synthetic Variable Rate Cost Analysis Reports
- C. FY 2016 State Annual Mark-to-Market Report
- D. The Dormitory Authority of the State of New York Guidelines for Interest Rate Exchange Agreements
- E. Standard & Poor's New York State Derivative Debt Profile Reports (2007-2011)
- F. New York State Variable Rate and Swaps Statutory Framework



# Appendix A



Synthetic Fixed Rate Cost Analysis  
Total Savings over Fixed Rate Non-Callable Bonds (Appendix A1)

Experience to 03/31/2016

Issuer	Swap Series	Notional Amount as of			VR Type	Origination Date
		09/31/2014	09/31/2015	09/31/2016		
DA	CUNY 2003	\$0	\$0	\$0	7.35 Day - Auction	04/10/2003
DA	CUNY 2005B	\$0	\$0	\$0	7 Day - Auction	02/24/2005
DA	CUNY 2008CD	\$462,073,121	\$462,073,121	\$462,073,121	7 Day - VRDB	12/11/2008
DA	MH 2003D-2A to 2H	\$179,100,000	\$171,000,000	\$163,800,000	7 Day - VRDB	07/15/2003
ESDC	2008A	\$200,000,000	\$200,000,000	\$200,000,000	7 Day - VRDB	06/24/2008
ESDC	CORR 2002B	\$0	\$0	\$0	7.28 Day - Auction	11/26/2002
ESDC	PIT 2004 A3	\$223,935,000	\$223,935,000	\$223,935,000	7 Day - VRDB	12/22/2004
HFA	PIT 2005C	\$80,000,000	\$80,000,000	\$80,000,000	7 Day - VRDB	03/10/2005
HFA	SCOR-2003LM	\$147,800,000	\$137,150,000	\$115,350,000	7.35 Day - VRDB	08/28/2003
LGAC	2003A	\$248,825,000	\$179,750,000	\$104,225,000	7 Day - Auction	02/20/2003
LGAC	2003A	\$366,665,000	\$366,665,000	\$366,665,000	7 Day - VRDB	02/20/2003
LGAC	2004A	\$0	\$0	\$0	7 Day - Auction	02/26/2004
LGAC	2004A	\$105,225,000	\$105,225,000	\$102,350,000	7 Day - VRDB	02/26/2004
		\$2,013,623,121	\$1,925,798,121	\$1,818,998,121		

Fixed Non-Callable Rate	Synthetic Fixed Rate	Support Costs	Basis Leakage	All In Synthetic Fixed Rate	Swap Rate Advantage		Swap Average Life
					%	bps	
4.690%	3.360%	0.257%	0.459%	4.076%	0.614%	61.4	18.8
3.970%	3.168%	0.267%	0.026%	3.408%	0.562%	56.2	19.6
4.690%	3.362%	0.762%	0.002%	4.122%	0.568%	56.8	13.8
4.250%	3.044%	0.594%	0.093%	3.731%	0.519%	51.9	17.3
4.800%	3.579%	0.668%	0.024%	4.272%	0.528%	52.8	14.1
4.800%	3.579%	0.255%	0.319%	4.153%	0.647%	64.7	19.6
4.780%	3.490%	0.416%	0.371%	4.277%	0.503%	50.3	24.5
4.682%	3.336%	0.488%	0.327%	4.151%	0.531%	53.1	23.4
4.720%	3.658%	0.559%	0.283%	4.499%	0.221%	22.1	14.0
4.500%	3.151%	0.251%	0.086%	3.489%	1.011%	101.1	15.8
4.500%	3.208%	0.732%	0.178%	4.117%	0.383%	38.3	15.8
4.050%	3.194%	0.251%	0.170%	3.615%	0.435%	43.5	15.1
4.050%	3.194%	0.691%	0.001%	3.886%	0.164%	16.4	15.1
4.591%	3.339%	0.512%	0.197%	4.049%	0.543%	54.3	

Savings to Date
\$18,219,414
\$363,455
\$19,073,866
\$12,746,832
\$8,133,183
\$14,962,301
\$12,585,563
\$4,776,252
\$4,500,320
\$30,770,514
\$18,364,991
\$1,971,437
\$1,259,238
\$147,727,366

Fiscal Year	Annual Savings
FY 2003	\$1,519,763
FY 2004	\$14,063,726
FY 2005	\$15,897,578
FY 2006	\$19,491,101
FY 2007	\$23,701,214
FY 2008	\$10,721,650
FY 2009	(\$14,550,150)
FY 2010	\$6,737,626
FY 2011	\$8,283,381
FY 2012	\$10,878,643
FY 2013	\$11,880,328
FY 2014	\$12,186,033
FY 2015	\$13,165,524
FY 2016	\$14,450,950
Total Savings	\$147,727,366

Synthetic Fixed Rate Cost Analysis  
 Total Savings By Fiscal Year (Appendix A2)  
 Experience to 03/31/2016

Issuer	Swap Series	03/31/2014	National Amount as of 03/31/2015	03/31/2016	VR Type	FY 2009 Savings	FY 2010 Savings	FY 2011 Savings	FY 2012 Savings	FY 2013 Savings	FY 2014 Savings	FY 2015 Savings	FY 2016 Savings	FY 2009 Savings	
						bps	\$	bps	\$	bps	\$	bps	\$	bps	\$
DA	CUNY 2003	\$0	\$0	\$0	7.35 Day Auction	92.8	\$4,879,185	94.6	\$5,079,697	109.2	\$5,933,963	127.7	\$6,921,366	220.5	\$17,278,857
DA	CUNY 2003B	\$0	\$0	\$0	7 Day Auction	61.8	\$12,137	61.8	\$12,137	66.6	\$140,094	19.7	\$38,977	50.6	\$438,369
DA	CUNY 2008C	\$462,073,127	\$462,073,127	\$462,073,127	7 Day VRDB	55.5	\$58,345	55.5	\$58,345	55.5	\$58,345	76.1	\$79,795,295	67.7	\$3,353,665
DA	MH 2003B-2A to 2H	\$79,700,000	\$79,700,000	\$79,700,000	7 Day VRDB	70.7	\$1,025,135	73.8	\$1,070,800	80.9	\$1,108,465	106.5	\$1,420,404	0.1	\$20,287
ESDC	2006A	\$200,000,000	\$200,000,000	\$200,000,000	7 Day VRDB	78.9	\$3,283,306	88.2	\$548,055	80.9	\$1,805,694	48.1	\$1,069,653	0.5	\$1,735,634
ESDC	CORR 2002B	\$0	\$0	\$0	7.28 Day Auction	78.9	\$3,283,306	88.2	\$548,055	80.9	\$1,805,694	48.1	\$1,069,653	0.5	\$1,735,634
ESDC	PIT 2004 A3	\$223,935,000	\$223,935,000	\$223,935,000	7 Day VRDB	78.9	\$3,283,306	88.2	\$548,055	80.9	\$1,805,694	48.1	\$1,069,653	0.5	\$1,735,634
HFA	PIT 2005C	\$80,000,000	\$80,000,000	\$80,000,000	7 Day VRDB	78.9	\$3,283,306	88.2	\$548,055	80.9	\$1,805,694	48.1	\$1,069,653	0.5	\$1,735,634
HFA	SCOR 2003IM	\$167,800,000	\$167,800,000	\$167,800,000	7.85 Day VRDB	60.2	\$44,547	60.2	\$44,547	60.2	\$44,547	84.7	\$823,326	109.7	\$864,764
LGAC	2003A	\$248,825,000	\$248,825,000	\$248,825,000	7.85 Day Auction	95.3	\$2,377,444	99.3	\$2,470,646	103.6	\$2,713,240	120.4	\$2,821,628	130.6	\$2,386,329
LGAC	2003A	\$366,665,000	\$366,665,000	\$366,665,000	7 Day VRDB	57.0	\$2,076,815	57.0	\$2,076,815	56.9	\$2,153,885	39.2	\$2,671,372	143.9	\$1,588,863
LGAC	2004A	\$0	\$0	\$0	7 Day Auction	48.8	\$45,585	50.9	\$54,958	56.7	\$59,645	26.0	\$248,651	16.8	\$37,080
LGAC	2004A	\$95,225,000	\$95,225,000	\$95,225,000	7 Day VRDB	77.6	\$14,063,726	75.0	\$15,897,578	82.1	\$19,491,101	46.1	\$10,721,650	16.8	\$109,928
LGAC	2004A	\$2,013,625,121	\$1,925,798,121	\$1,818,396,121		71.4	\$15,197,653	75.0	\$15,897,578	82.1	\$19,491,101	46.1	\$10,721,650	16.8	\$109,928

Issuer	Swap Series	03/31/2014	National Amount as of 03/31/2015	03/31/2016	VR Type	FY 2010 Savings	FY 2011 Savings	FY 2012 Savings	FY 2013 Savings	FY 2014 Savings	FY 2015 Savings	FY 2016 Savings	Total Savings		
						bps	\$	bps	\$	bps	\$	bps	\$		
DA	CUNY 2003	\$0	\$0	\$0	7.35 Day Auction	43.5	\$1,978,016	39.7	\$1,774,314	55.4	\$2,537,065	69.4	\$3,176,907	61.4	\$18,219,414
DA	CUNY 2003B	\$0	\$0	\$0	7 Day Auction	15.2	\$304,171	9.3	\$85,856	31.5	\$638,425	72.1	\$1,284,917	56.7	\$363,455
DA	CUNY 2008C	\$462,073,127	\$462,073,127	\$462,073,127	7 Day VRDB	36.4	\$303,570	36.4	\$303,570	36.4	\$303,570	46.6	\$459,329	56.8	\$9,013,866
DA	MH 2003B-2A to 2H	\$79,700,000	\$79,700,000	\$79,700,000	7 Day VRDB	51.4	\$1,016,246	45.9	\$906,142	48.9	\$964,627	72.9	\$1,447,833	51.9	\$2,746,832
ESDC	2006A	\$200,000,000	\$200,000,000	\$200,000,000	7 Day VRDB	29.6	\$650,584	68.3	\$1,516,113	72.9	\$1,616,800	84.8	\$1,884,339	52.8	\$8,133,883
ESDC	CORR 2002B	\$0	\$0	\$0	7.28 Day Auction	29.6	\$650,584	68.3	\$1,516,113	72.9	\$1,616,800	84.8	\$1,884,339	64.7	\$4,962,201
ESDC	PIT 2004 A3	\$223,935,000	\$223,935,000	\$223,935,000	7 Day VRDB	39.3	\$31,331	69.7	\$553,973	71.3	\$666,733	86.1	\$684,893	50.3	\$12,585,565
ESDC	SCOR 2003IM	\$167,800,000	\$167,800,000	\$167,800,000	7.85 Day VRDB	9.7	\$156,973	7.4	\$116,468	26.2	\$453,023	71.3	\$666,733	53.1	\$4,776,252
HFA	PIT 2005C	\$80,000,000	\$80,000,000	\$80,000,000	7 Day VRDB	106.3	\$2,686,020	100.3	\$2,526,277	110.3	\$2,789,850	108.4	\$1,945,527	22.1	\$4,500,320
HFA	SCOR 2003IM	\$167,800,000	\$167,800,000	\$167,800,000	7.85 Day VRDB	6.9	\$252,627	19.3	\$700,185	39.3	\$1,449,142	51.7	\$1,995,877	101.1	\$30,770,544
LGAC	2003A	\$248,825,000	\$248,825,000	\$248,825,000	7 Day Auction	9.4	\$197,685	11.5	\$4,188	16.5	\$64,665	29.2	\$299,685	38.3	\$18,364,991
LGAC	2003A	\$366,665,000	\$366,665,000	\$366,665,000	7 Day VRDB	35.0	\$673,628	40.3	\$8,283,281	54.7	\$11,860,528	68.4	\$13,655,524	60.4	\$14,450,954
LGAC	2004A	\$0	\$0	\$0	7 Day Auction	9.4	\$197,685	11.5	\$4,188	16.5	\$64,665	29.2	\$299,685	31.4	\$1,259,238
LGAC	2004A	\$95,225,000	\$95,225,000	\$95,225,000	7 Day VRDB	35.0	\$673,628	40.3	\$8,283,281	54.7	\$11,860,528	68.4	\$13,655,524	54.3	\$14,727,869





# Appendix B



**NYS Division of The Budget**  
**Synthetic Variable Rate Cost Analysis**  
**Total Savings of Current Synthetic Variable Rate Swaps Over Natural Variable Rate Bonds**  
**Experience to 3/31/2011**

Issuer	Series	SWAP Original Notional Amount	Synthetic VR Index	SWAP Original Origination Date	Synthetic VR Rate			Natural Variable Rate			Performance			
					Variable Rate Index	Fixed Benefit	"All-in" Synthetic Variable Rate	Natural Variable Rate	Support Costs	"All-in" Natural Rate	SWAP Rate Advantage (%)	SWAP Rate Advantage (bps)	Average Life (years)	Savings To Date
					A	B	C=(A-B)	D	E	F=(D+E)	(F-C)			
DA	PIT 2005A_SF	\$ 9,905,000	SIFMA	3/24/2005	3.233%	0.107%	3.126%	3.160%	0.260%	3.420%	0.294%	29	2.0	\$55,523
DA	PIT 2005D_ED	\$ 65,725,000	SIFMA	3/24/2005	2.350%	0.100%	2.250%	2.760%	0.260%	3.020%	0.770%	77	3.2	\$1,020,465
ESDC	PIT 2004A_4	\$ 50,880,000	SIFMA	12/22/2004	2.343%	0.085%	2.258%	2.700%	0.260%	2.960%	0.702%	70	2.5	\$378,764
ESDC	PIT 2004B_2	\$ 30,520,000	SIFMA	12/22/2004	2.156%	0.100%	2.056%	2.600%	0.260%	2.860%	0.804%	80	3.8	\$468,158
HFA*	PIT 2003B	\$ 83,740,000	LIBOR	4/19/2005	2.971%	0.600%	2.371%	3.096%	0.260%	3.356%	0.985%	99	4.3	\$2,968,727
HFA*	PIT 2004B	\$ 51,715,000	LIBOR	4/19/2005	2.971%	0.427%	2.544%	3.096%	0.260%	3.356%	0.812%	81	5.2	\$1,637,672
HFA*	PIT 2005B	\$ 34,985,000	LIBOR	4/19/2005	2.971%	0.025%	2.946%	3.096%	0.260%	3.356%	0.410%	41	5.8	\$553,470

\*Taxable

	2.37%	0.10%	2.27%	2.73%	0.26%	2.99%	0.72%	72
	2.97%	0.43%	2.54%	3.10%	0.26%	3.36%	0.81%	81

	Weighted Average of Tax Exempt Series:
	Weighted Average of HFA Taxable Series:

Total Original SWAP	\$ 327,470,000
Amortization:	\$ (250,783,750)
Terminated (9/22/10)	\$ 76,686,250
<b>Current Balance</b>	<b>\$0</b>

Savings	
SFY 04-05	\$59,118
SFY 05-06	\$1,186,763
SFY 06-07	\$1,136,734
SFY 07-08	\$1,371,687
SFY 08-09	\$2,162,197
SFY 09-10	\$889,874
SFY 10-11	\$276,405
<b>Sub-total:</b>	<b>\$7,082,779</b>
Lehman Automatic Termination Payment <sup>1</sup> :	\$2,746,746
Termination Payment <sup>2</sup> (9/22/10):	\$5,610,200
Total Savings:	<b>\$15,439,725</b>

1. Represents the amount of payment received from Lehman Brothers due to bankruptcy for automatic termination of a swap agreement.



# Appendix C



Counterparty Exposure - Article 5-D Interest Rate Exchange Agreements - Fixed Rate Swaps  
(as of March 31, 2016)

Issuer	Counterparty	Swaps Outstanding*	Term of Swap	Swap Rate	Mark-to-Market (1)
Dormitory Authority of the State of New York	New York City University System Consolidated Revenue Bonds	\$213,811,689	7/1/31	3.3600	38,064,497
Dormitory Authority of the State of New York	New York City University System Consolidated Revenue Bonds	\$124,130,716	7/1/31	3.3600	22,099,156
Dormitory Authority of the State of New York	New York City University System Consolidated Revenue Bonds	\$124,130,716	7/1/31	3.3600	22,099,156
Dormitory Authority of the State of New York	Mental Health Services Revenue Bonds (2003D-2)	\$136,286,229	2/15/31	3.0440	18,604,157
Dormitory Authority of the State of New York	Mental Health Services Revenue Bonds (2003D-2)	\$27,513,771	2/15/31	3.0440	3,763,092
Total		\$625,873,121			104,630,058
Empire State Development Corporation	Correctional Facilities Service Contract Bonds	\$75,000,000	1/1/30	3.5780	12,651,387
Empire State Development Corporation	Correctional Facilities Service Contract Bonds	\$125,000,000	1/1/30	3.5780	21,085,645
Empire State Development Corporation	Personal Income Tax Revenue Bonds	\$74,705,000	3/15/33	3.4900	21,151,361
Empire State Development Corporation	Personal Income Tax Revenue Bonds	\$74,615,000	3/15/33	3.4900	21,120,493
Empire State Development Corporation	Personal Income Tax Revenue Bonds	\$74,615,000	3/17/33	3.4900	21,120,493
Total		\$423,935,000			97,129,379
Housing Finance Agency	Personal Income Tax Revenue Bonds	\$80,000,000	3/15/33	3.3355	20,277,631
Housing Finance Agency	Housing SCR Bonds	\$57,675,000	9/15/21	3.6600	4,768,413
Housing Finance Agency	Housing SCR Bonds	\$57,675,000	9/15/21	3.6555	4,762,266
Total		\$195,350,000			29,808,310
Local Government Assistance Corporation	LGAC Bonds	\$141,305,000	4/1/22	3.1489	12,236,087
Local Government Assistance Corporation	LGAC Bonds	\$141,305,000	4/1/22	3.1538	12,259,226
Local Government Assistance Corporation	LGAC Bonds	\$94,140,000	4/1/24	3.2629	15,037,885
Local Government Assistance Corporation	LGAC Bonds	\$94,140,000	4/1/24	3.2597	15,018,953
Local Government Assistance Corporation	LGAC Bonds (2004 Swap)	\$102,350,000	4/1/21	3.1940	9,767,417
Total		\$573,240,000			64,319,567
<b>Total</b>		<b>\$1,818,398,121</b>			<b>\$295,887,314</b>
Article 5-D Swaps Cap*		<b>\$7,534,383,120</b>			
Excess Article 5-D Swaps Cap		<b>\$5,715,984,999</b>			

(1) Negative numbers represent payments due the State to cancel the swap contract. Positive numbers represent payments the State would need to make.

(2) JP Morgan acquired Bear Stearns Financial Products, an AAA subsidiary, on June 1, 2008 and now guaranty these swaps.

\* Based on actual debt outstanding as of March 31, 2015, (less economically defeased bonds) and a Swap Capacity rate of 15% as of April 1, 2011.

\*\*UBS no longer provides monthly values. The values listed are an average of the other Mark-to-Market values for that series.

† Notional amount was \$188,300,000 prior to August 31, 2011.



# Appendix D



## **GUIDELINES FOR INTEREST RATE EXCHANGE AGREEMENTS**

### **Authorization**

Subject to the provisions of Article 5-D of the State Finance Law (“Article 5-D”), the Dormitory Authority of the State of New York (the “Authority/Corporation/Agency”) and certain other public authorities (collectively, the “Authorized Issuers”) are authorized to enter into interest rate exchange and similar agreements (commonly referred to as “swaps”) in connection with State-supported debt. Subject to certain requirements and procedures, the maximum total notional amount of interest rate exchange and similar agreements (other than Excluded Agreements, as defined in Article 5-D) that can be entered into by all of the Authorized Issuers under Article 5-D shall not exceed twenty percent of total outstanding State-supported debt. In addition, the maximum total amount of Variable Rate Debt Instruments, also as defined in Article 5-D, which includes interest rate exchange and similar agreements which result in an Authorized Issuer effectively paying interest at a rate or rates which varies from time to time, are further limited by Article 5-D to an amount that shall not exceed twenty percent of total outstanding State-supported debt. These policy, procedures, reporting and control guidelines (the “Guidelines”) establish the requirements to be met and the process to be used by the Authority when entering into interest rate exchange agreements in connection with State-supported debt.

### **Purpose of Agreement**

The Authority may enter into an interest rate exchange or similar agreement(s), based on the International Swap and Derivatives Association (“ISDA”) Master Agreement as further described in the section “**Form of Agreements**”, in connection with State-supported debt obligations (the “Agreement”) if the Agreement is reasonably expected to:

- A. reduce or hedge an exposure to changes in interest rates;
- B. result in a lower net cost of borrowing with respect to the State-supported debt obligations; or
- C. provide benefits and/or flexibility to the State or the Authority with respect to financial exposure or financial position.

The Authority shall not enter into an Agreement unless the Agreement is reasonably expected to achieve one or more of the objectives listed above. In addition, before entering into an Agreement, the Authority, in consultation with the Division of the Budget (the "Division") shall consider the Agreement's impact on other swap agreements entered into in connection with other State-supported debt, and periodically evaluate such Agreements entered into by the Authority for risks and exposures including, but not limited to, the following categories:

- counterparty risk;
- termination risk;
- rollover risk;
- basis risk;
- tax event risk; and
- amortization risk.

The Authority, in consultation with the Division, shall also consider the long-term implications associated with entering into such agreements including, but not limited to, the following:

- costs of borrowing;
- historical trends;
- use of capacity for variable rate bonds and related credit enhancements; and
- any potential impact on the future ability to call bonds, including opportunities to refund related debt obligations.

Under an Agreement, the Authority may be either the floating rate or fixed rate payor. The Agreement may also provide for the establishment of maximum or minimum interest rates (or both), payable thereunder and contain any other protections designed to limit exposure to changes in interest rates.

The Authority shall not enter into any Agreement for the purpose of speculation.

### **Excluded Agreements**

An Excluded Agreement may be executed by the Authority for the purpose of reducing or eliminating a situation of imminent risk under an existing Agreement, including but not limited to a counterparty downgrade, default, or other actual or imminent economic loss.

### **Term of the Agreement**

The term of any Agreement shall not exceed the final maturity of the bonds, notes or other obligations of the Authority issued or outstanding in connection with such agreement.

## **Selection of Counterparties and Other Procurements**

The Authority shall select counterparties through an evaluation of qualifications based upon a Request for Qualifications solicited from interested providers. The evaluation of prospective counterparties shall include consideration of the following criteria:

- A. the requirements of Article 5-D;
- B. substantial and significant experience and presence in the municipal swap market;
- C. maintenance of a two-way swap book which facilitates hedging of exposure;
- D. demonstrated capability to develop creative and innovative ideas;
- E. relationship with and understanding of the needs of the Authority and the State; and
- F. other factors deemed appropriate by the Authority.

Upon the completion of the evaluations, a list of approved counterparties shall be prepared. Such list may include senior and other counterparty designations. Such Request for Qualifications may establish maximum limits to any one approved counterparty, such as a maximum notional amount per firm. The Authority shall consult with the Division on the notional amount limit for each counterparty. In no event shall the aggregate notional amount of outstanding interest rate exchange agreements with the approved counterparties (other than Excluded Agreements, as defined by Article 5-D) exceed the maximum notional amount permitted under Article 5-D.

The counterparty for a particular transaction will be selected from the approved list in accordance with the procedures provided in this section and in accordance with a competitive process based on the lowest overall net cost of the transaction, and such additional factors as the Authority deems pertinent. Alternatively, the Authority shall have the option to negotiate agreements or use a bidding process involving a combination of competitive bids and negotiations with counterparties to effectuate other sound business purposes.

The Authority shall also procure credit enhancement, liquidity facilities, and establish reserves in connection with such agreements, if necessary or advisable, with the same standards and using the same methods as it employs for the selection of credit enhancement, liquidity facilities, and the determination for the establishment of reserves for its bonds, notes, or other obligations.

## **Credit Ratings of Counterparties**

As required by Article 5-D, a counterparty shall have credit ratings from at least one nationally recognized statistical rating agency that is within the two highest investment grade categories and ratings which are obtained from any other nationally recognized statistical rating agencies for such counterparty shall also be within the three highest investment grade categories, or the payment obligations of the counterparty shall be unconditionally guaranteed by an entity with such credit ratings.

In the event a counterparty is downgraded or the Authority is notified of the termination of an Agreement by the counterparty, the Authority will promptly provide the Director of the Division of the Budget (the "Director") with notification of such downgrade or termination in writing and, if applicable, comply with the collateralization provisions in Article 5-D.

## **Collateralization**

Pursuant to the provisions of Article 5-D, in the event that the rating of any counterparty, or of the entity unconditionally guaranteeing its payment obligations, is downgraded so that the counterparty, or such guarantor if applicable, does not have credit ratings meeting the criteria contained in the section "**Credit Ratings of Counterparties**" above, the Authority shall require the counterparty to deposit collateral with the Authority or a custodian acting on its behalf pursuant to a written collateral agreement. Such collateral shall consist of direct obligations of, or obligations the principal and interest on which are guaranteed by, the United States of America (including cash) with a net market value of at least one hundred two percent of the net market value of the contract to the Authority ("collateral requirement"). Any collateral agreement shall require that the net market value of the contract and the collateral be marked-to-market periodically, but not less than once each month. If the market value of the collateral shall be found to be less than one hundred two percent of the net market value of the contract to the Authority, than the counterparty shall be required to post additional collateral to meet such requirement.

## **Form of Agreements and Approvals**

The Authority shall enter into written Agreements based on the ISDA Master Agreement and Schedule to the Master Agreement (the "Master Agreement") with each approved counterparty. Each Agreement, including the modification or termination thereof, shall be subject to the approval of the Authority's governing board. This may include the approval as to form of such Master Agreement, and delegations to staff of such matters as deemed necessary or desirable to effectuate the purposes of Article 5-D, these Guidelines, and a particular swap transaction, provided that they do not alter or amend the requirements of these Guidelines. Transactions entered into under the Master Agreement shall be evidenced by written Confirmations.

## Monitoring and Reporting Requirements

Pursuant to the provisions of Article 5-D, the Authority shall monitor its interest rate exchange program and all transactions made thereunder with respect to the items listed below. On or before the 15<sup>th</sup> of each month, the Authority will report to the Director, the chairs of the Senate Finance Committee and the Assembly Ways and Means Committee, and the State Comptroller, with respect to:

- A. the value of the Securities Industry and Financial Markets Association ("SIFMA") index and/or such other indices applicable to the Authority's Agreements;
- B. payments required to be paid and received, and payments actually paid and received under each agreement;
- C. the status of individual Agreements in effect, including a summary of the terms and conditions thereto, such as notional amounts, rates, terms, bases or indices employed, a description of each counterparty thereto and their respective credit ratings, and the method of their procurement;
- D. the status of any credit enhancement, liquidity facility or reserves associated with the Agreement including an accounting of all costs and expenses incurred, whether or not incurred in conjunction with the procurement of such credit enhancement or liquidity facilities;
- E. the mark-to-market valuations of each Agreement, and an assessment of counterparty risk, termination risk, and other associated risks, and the amount of collateral which has been required to be posted, if any, and the amount which has been actually posted;
- F. identification of each transaction placed in the preceding month, including a summary of the terms and conditions thereof; and

A copy of these Guidelines shall also be included with the monthly report submitted following their adoption and/or any subsequent modification thereto.

Based on information provided by the Authority and other Authorized Issuers, the Division will provide the Authority with a monthly report of the total outstanding swap agreements and the current value of the swap cap as set forth in Article 5-D.

The Authority's annual financial statements and annual report shall include a discussion and accounting of each existing Agreement in accordance with generally accepted accounting principles. If not otherwise required, the Authority shall also include a brief general description of each such Agreement, including their terms and conditions, in such reports.

## **Execution**

To assist the State in monitoring the impact, including the costs and risks, of Agreements entered into by the Authority and other Authorized Issuers on the overall portfolio of State-supported debt, each such Agreement, including provisions and actions regarding extensions, reversals, options and terminations of such Agreement, shall be entered into in consultation with the Division and shall be subject to the written approval of the Director.

Each Agreement shall also be subject to a written independent finding that the terms and conditions reflect a fair market value of such Agreement as of the date of its execution, regardless of whether such Agreement was solicited on a competitive or negotiated basis.

# Appendix E



## ***Extract from Standard & Poor's New York State Review (March 2011)\****

### ***Debt Derivative Profile: '1.5, Very Low Risk'***

New York State's overall debt management strategy includes the use of variable-rate debt, as well as interest rate swaps. We have assigned the state an overall Debt Derivative Profile (DDP) score of '1.5' on a four-point scale where '1' represents the lowest risk and '4' the highest. The '1.5' DDP score reflects our view that the swap portfolio poses a very low risk to the state's credit quality. Key determinants behind the DDP score include the swaps' low counterparty risk and low termination risk but average basis risk; all of the floating-to-fixed-rate swaps are set to 65% of LIBOR.

New York State continued to reduce its swap exposure in the past year. As of Sept. 30, 2010, the state had a \$2.3 billion notional amount of floating-to-fixed-rate interest rate swaps outstanding, down from \$3 billion as of Nov. 30, 2009. The swaps synthetically fix interest rates on the same notional amount of variable-rate debt. Following earlier swap terminations with Lehman Brothers and the assumption of Bear Stearns swaps by JP Morgan, as of September 2010 the state had 18 floating-to-fixed-rate swap agreements with seven counterparties: Goldman Sachs Mitsui Marine Derivative Products L.P. (15.3%), Citibank N.A. (16.1%), Morgan Stanley Capital Services Inc. (16.6%), JPMorgan Chase Bank (21.1%), UBS Paine Webber (17.1%), Societe Generale (8.3%), and Merrill Lynch Capital Services (5.5%). As of Sept. 30, 2010, the market value of the cost to the state of terminating the swaps would have been \$353.5 million. Most of the swaps have coterminous maturities with the related debt, and thus extend as long as 2033 for some swaps. The state has swaps against service contract debt, New York State Local Government Assistance Corp. debt, New York Housing Finance Agency debt, Empire State Development Corp. debt, and PIT debt. Swaps are typically written to the conduit borrower and the state's obligations are covered within the service contract documents. Swap payments and interest rate exposure are covered within the state's debt service bill.

The state's policies and management are very strong, in our view. Both statutory and policy limitations and controls are in place, including a limitation on total notional and variable-rate debt amounts to 20% of state debt. Swaps are monitored and marked to market monthly. Swap payments and interest rate exposure are covered within New York State's debt service bill, and the state has used swaps primarily to synthetically refund debt for savings.

Key components of New York State's swap management plan include:

- The adoption of interest-rate exchange guidelines;
- The requirement of minimum counterparty ratings of 'AA', with collateralization required in the event of a downgrade;
- The finding by an independent financial advisor that the terms and conditions of the swap reflect a fair market value;
- The use of standardized documentation; and
- Monthly reports that monitor and assess swap performance.

On a four-point scale where '1' is the strongest, Standard & Poor's assigned a '2.7' to New York State's debt and liability profile

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*Note: This was the last New York State Derivative Debt Profile report published by Standard and Poor's.*

## ***Extract from Standard & Poor's New York State Review (March 17, 2010)\****

### ***Debt Derivative Profile: '1.5', Very Low Risk***

New York State's overall debt management strategy includes the use of variable-rate debt, as well as interest rate swaps. We assigned an overall Debt Derivative Profile (DDP) score of '1.5', on a scale of '1' to '4', where '1' represents the lowest risk and '4' the highest. The '1.5' DDP score reflects Standard & Poor's view that the swap portfolio poses a very low risk to the state's credit quality. Key determinants behind the DDP score include the swaps' low counterparty risk and low termination risk, but average basis risk; all of the floating-to-fixed swaps are set to 65% of LIBOR.

New York State has continued to reduce its swap exposure in the past year. As of Nov. 30, 2009, the state had \$3.0 billion notional amount of floating-to-fixed rate, interest rate swaps outstanding, synthetically fixing interest rates on the same amount of variable-rate debt. Following earlier swap terminations with Lehman Brothers and the assumption of Bear Stearns swaps by JP Morgan, as of Nov. 30, 2009, the state had 24 floating-to-fixed swap agreements with seven counterparties: Goldman Sachs Mitsui Marine Derivative Products LP (8.6%); Citibank N.A. (17.9%); Morgan Stanley Capital Services Inc. (17.4%); JPMorgan Chase Bank (24.7%); UBS AG (9.7%); Societe Generale (4.7%); and Merrill Lynch Capital Services (3.1%). As of Nov. 30, 2009, the market value of the cost to the state of terminating the swaps would have been \$304.7 million. Most of the swaps have coterminous maturities with the related debt, and thus extend as long as 2033 for some swaps. The state has swaps against service contract debt, New York State Local Government Assistance Corp. debt, New York Housing Finance Agency debt, Empire State Development Corp. debt, and PIT debt. Swaps are typically written to the conduit borrower and the state's obligations are covered within the service contract documents. Swap payments and interest rate exposure are covered within the state's debt service bill.

As of Nov. 30, 2009, there was also a \$737.5 million notional amount of fixed-to-floating-rate swaps. The average life of the swaps varies from two to six years. These agreements reduce peak counterparty exposure under the floating-to-fixed swap agreements. They are not included in New York State's calculations of swap limitations. The swaps primarily used the Securities Industry and Financial Market Association Index, although a few were based on a percent of LIBOR. The state entered into these agreements to reduce peak counterparty exposure under the existing swap agreements.

The state's policies and management are very strong, in our view. There are both statutory and policy limitations and controls in place, including a limitation on total notional and variable-rate debt amounts to 20% of state debt. Swaps are monitored and marked to market monthly. Swap payments and interest rate exposure are covered within New York State's debt service bill, and it has used swaps primarily to synthetically refund debt for savings.

Key components of New York State's swap management plan include:

- The adoption of interest-rate exchange guidelines;
- The requirement of minimum counterparty ratings of 'AA', with collateralization required in the event of a downgrade;
- The finding by an independent financial advisor that the terms and conditions of the swap reflect a fair market value;
- The use of standardized documentation; and
- Monthly reporting requirements that monitor and assess swap performance.

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## ***Extract from Standard & Poor's New York State Review (February 19, 2009)\****

### ***Debt Derivative Profile: '1.5', Very Low Risk***

New York State's overall debt management strategy includes the use of variable-rate debt, as well as interest rate swaps. We assigned an overall Debt Derivative Profile (DDP) score of '1.5', on a scale of '1' to '4', where '1' represents the lowest risk and '4' the highest. The '1.5' DDP score reflects Standard & Poor's view that the swap portfolio poses a very low risk to the state's credit quality. Key determinants behind the DDP score include the swaps' low counterparty risk and low termination risk, but average basis risk; all of the floating-to-fixed swaps are set to 65% of LIBOR. The state does not have any plans to enter into any more swap agreements.

The state is continuing to adjust its debt management plan and, as a result, has reduced its variable-rate debt exposure in calendar year 2008, which entailed the termination of \$1.5 billion in interest rate exchange agreements. New York State terminated \$973 million in swaps at a mark-to-market cost of \$44.6 million as of Sept. 30, 2008. Also, the state was forced to terminate \$565 million in swaps with Lehman Brothers Derivative Products as its bankruptcy filing triggered an automatic termination. The mark to market was \$12.1 million. As of Sept. 30, 2008, New York State has \$618 million synthetic variable-rate (forward-starting) swaps, \$163 million synthetic variable-rate (current) swaps, and \$4.5 billion in synthetic fixed-rate swaps. Also as of Sept. 30, no counterparty has more than 23.2% of the overall state portfolio. The counterparties include: Bear Stearns Financial Products Inc. (8%); Goldman Sachs Mitsui Marine Derivative Products LP (13%); Citibank NA (16.8%); Morgan Stanley Capital Services Inc. and Calyon (15.3%); JPMorgan Chase Bank (23%); UBS AG (14.6%); Societe Generale (3.6%); and Merrill Lynch Capital Services (5.6%).

New York State now has a \$4.5 billion notional amount of floating-to-fixed-rate swaps; most of the swaps are coterminous with the life of the related bonds, and are therefore long. The state has swaps against service contract debt, New York State Local Government Assistance Corp. debt, New York State Urban Development Corp. debt, and personal income tax debt. Swaps are typically written to the conduit borrower and the state's obligations are covered within the service contract documents. Swap payments and interest rate exposure are covered within the state's debt service bill.

There is also a \$781 million notional amount of fixed-to-floating-rate swaps that are considered excluded obligations by the state. The average life of the swaps varies from two to six years. These agreements reduce peak counterparty exposure under the floating-to-fixed swap agreements. They are not included in New York State's calculations of swap limitations. The swaps primarily used the Securities Industry and Financial Market Association Index, although a few were based on a percent of LIBOR. The state entered into these agreements to reduce peak counterparty exposure under the existing swap agreements.

The state's policies and management, in our view, are very strong. There are both statutory and policy limitations and controls in place, including a limitation on total notional and variable-rate debt amounts to 20% of state debt. Swaps are monitored and marked to market monthly. Swap payments and interest rate exposure are covered within New York State's debt service bill, and it has used swaps primarily to

synthetically refund debt for savings. Key components of New York State's swap management plan include:

- The adoption of interest rate exchange guidelines;
- The requirement of minimum counterparty ratings of 'AA', with collateralization required in the event of a downgrade;
- The finding by an independent financial advisor that the terms and conditions of the swap reflect a fair market value;
- The use of standardized documentation; and
- Monthly reporting requirements that monitor and assess swap performance.

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## ***Extract from Standard & Poor's New York State Review (February 6, 2008)\****

### ***Debt Derivative Profile: '1.5', Very Low Risk***

New York State's overall debt management strategy includes the use of variable-rate debt, as well as interest rate swaps. The overall Debt Derivative Profile (DDP) score of '1.5' reflects Standard & Poor's view that the swap portfolio poses a very low risk to the state's credit quality. Key determinants behind the DDP score include the swaps' low counterparty risk and low termination risk, but average basis risk; all of the floating to fixed swaps are set to 65% of LIBOR. The state currently does not have any plans to enter into any more swap agreements. The state has a total of 106 floating- to fixed-rate swaps, with good diversification of nine different counterparties; most of the swaps are coterminous with the life of the related bonds, and are therefore long. The state has swaps against service contract debt, New York State Local Government Assistance Corp. debt, New York State Urban Development Corp. debt, and personal income tax debt. Swaps are typically written to the conduit borrower and the state's obligations are covered within the service contract documents. Swap payments and interest rate exposure are covered within the state's debt service bill.

There are also 21 fixed- to floating-rate swaps that are considered excluded obligations by the state; the swaps are with six counterparties and three authorized issuers. The average life of the swaps varies from two to six years. These agreements reduce peak counterparty exposure under the floating-to-fixed swap agreements. They are not included in the state's calculations of swap limitations. The swaps primarily used the Securities Industry and Financial Market Association (SIFMA) index, although a few were based on a percent of LIBOR. The state entered into these agreements to reduce peak counterparty exposure under the existing swap agreements.

The state's policies and management are very strong. There are both statutory and policy limitations and controls in place, including a limitation on total notional and variable-rate debt amounts to 20% of state debt. Swaps are monitored and marked to market monthly. Swap payments and interest rate exposure are covered within the state's debt service bill. The state has used swaps primarily to synthetically refund debt for savings. Key components of the state's swap management plan include:

- The adoption of interest rate exchange guidelines;
- The requirement of minimum counterparty ratings of 'AA', with collateralization required in the event of a downgrade;
- The finding by an independent financial advisor that the terms and conditions of the swap reflect a fair market value;
- The use of standardized documentation; and
- Monthly reporting requirements that monitor and assess swap performance.

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## ***Extract from Standard & Poor's New York State Review (February 14, 2007)\****

### ***Debt Derivative Profile: '1.5', Very Low Risk***

New York State's overall debt management strategy includes the use of variable-rate debt as well as interest-rate swaps. Although the state has not unwound or added any additional swaps over the past year, Standard & Poor's changed its Debt Derivative Profile (DDP) score on the state to '1.5' on a scale of '1' to '4', with '1' representing the lowest risk and '4' the highest. The previous DDP score was '1' on a scale of '1' to '5'. The new score reflects a revision of criteria in how derivative profiles are weighed and scored (see "**Public Finance Criteria: Debt Derivative Profile Scores**"). The overall score of '1.5' is based on Standard & Poor's view that the swap portfolio poses a very low risk to the state's credit quality. Key determinants behind the DDP score include the swaps' low counterparty risk and low termination risk, coupled with average basis risk; all of the floating to fixed swaps are set to 65% of LIBOR. The state has a total of 45 swaps, with good diversification of nine different counterparties; most of the swaps are coterminous with the life of the related bonds, and are therefore long. The state has swaps against service contract debt, New York State Local Government Assistance Corp. debt, **New York State Urban Development Corp.** debt, and personal income tax debt. Swaps are typically written to the conduit borrower, and the state's obligations are covered within the service contract documents. The state's policies and management are very strong. Both statutory and policy limitations and controls are in place--including limiting total notional and variable-rate debt amounts to 15% of state debt. The state is approaching this limitation. Gov. Spitzer's fiscal 2007-2008 budget recommendation, however, includes language to raise that cap to 20%. Swaps are monitored and marked to market monthly. Swap payments and interest-rate exposure are covered within the state's debt service bill.

There are also 21 fixed to floating swaps that are considered excluded obligations by the state. As a result, these agreements reduce peak counterparty exposure under the floating to fixed swap agreements. They are not included in the state's calculations of swap limitations. The BMA index was used on these swaps. The state entered into these agreements to reduce peak counterparty exposure under the existing swap agreements.

Swaps have been used primarily to synthetically refund debt for savings. Key components of the state's swap management plan include:

- The adoption of interest-rate exchange guidelines;
- The requirement of a minimum counterparty rating of 'AA', with collateralization required in the event of a downgrade;
- The finding by an independent financial advisor that the terms and conditions of the swap reflect a fair market value;
- The use of standardized documentation; and
- Required monthly reporting on the monitoring and assessing of swap performance.

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## ***Extract from Standard & Poor's New York State Review (March 1, 2006)\****

### ***Debt Derivative Profile: '1.5', Very Low Risk***

New York State has been assigned a Standard & Poor's Debt Derivative Profile (DDP) overall score of '1', on a scale of '1' to '5', with '1' representing the lowest risk and '5' the highest. The overall score of '1' primarily reflects the swaps' low counterparty risk and low termination risk, but average basis risk; all of the floating to fixed swaps are set to 65% of LIBOR. The state has a total of 45 swaps, with good diversification of nine different counterparties; most of the swaps are coterminous with the life of the related bonds, and are therefore long. The state has swaps against service contract debt, New York State Local Government Assistance Corp. debt, New York State Urban Development Corp. debt, and personal income tax debt. Swaps are typically written to the conduit borrower, and the state's obligations are covered within the service contract documents. The state's policies and management are very strong. There are both statutory and policy limitations and controls in place--including limiting total notional and variable-rate debt amounts to 15% of state debt. The state is approaching this limitation. Swaps are monitored and marked to market monthly. Swap payments and interest rate exposure are covered within the state's debt service bill.

There are also 21 fixed to floating swaps that are considered excluded obligations by the state. As a result, these agreements reduce peak counterparty exposure under the floating to fixed swap agreements. They are not included in the state's calculations of swap limitations. The BMA index was used on these swaps. The state entered into these agreements to reduce peak counterparty exposure under the existing swap agreements.

The state's policies and management are very strong. There are both statutory and policy limitations and controls in place--including limiting total notional and variable-rate debt amounts to 15% of state debt. The state is approaching this limitation. Swaps are monitored and marked to market monthly. Swap payments and interest rate exposure are covered within the state's debt service bill. Swaps have been used primarily to synthetically refund debt for savings. Key components of the state's swap management plan include:

- The adoption of interest rate exchange guidelines;
- The requirement of minimum counterparty ratings of 'AA', with collateralization required in the event of a downgrade;
- The finding by an independent financial advisor that the terms and conditions of the swap reflect a fair market value;
- The use of standardized documentation; and
- Monthly reporting requirements that monitor and assess swap performance.

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***Extract from Standard & Poor's New York State Review  
(February 15, 2005)\****

***Debt Derivative Profile: '1.5', Very Low Risk***

New York State has been assigned a Standard & Poor's Debt Derivative Profile (DDP) overall score of '2', on a scale of '1' to '5', with '1' representing the lowest risk and '5' the highest. The overall score of '2' primarily reflects the state's swaps having low counterparty risk and low termination risk, but moderate basis risk; all floating to fixed swaps are set to 65% of LIBOR. The state has made some use of what is known as excluded agreements, which are essentially fixed to floating swaps designed to hedge the LIBOR exposure. The state has more than 50 swaps, with good diversification of counterparties; most of the swaps are coterminous with the life of the related bonds, and are therefore long. The state has swaps against service contract debt, New York State Local Government Assistance Corp. debt, and personal income tax debt. Swaps are typically written to the conduit borrower, and the state's obligations are covered within the service contract documents. The state's policies and management are very strong. There are both statutory and policy limitations and controls in place--including limiting total notional and variable-rate debt amounts to 15% of outstanding state debt. The state is approaching this limitation. Swaps are monitored and marked to market monthly. Swap payments and interest rate exposure are covered within the state's debt service bill. Swaps have been used primarily to synthetically refund debt for savings.

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# Appendix F



## ARTICLE 5-D VARIABLE RATE DEBT INSTRUMENTS

- Section: 69-a. Definitions.  
69-b. Limitation on amount of variable rate debt instruments.  
69-c. Variable rate bonds.  
69-d. Interest rate exchange or similar agreements.  
69-e. Applicability.

§ 69-a. Definitions. As used throughout this article, the following terms shall have the following meanings:

1. "Variable rate bonds" shall mean any State-supported debt which bears interest at a rate or rates which varies from time to time.
2. "Interest rate exchange or similar agreement" shall mean a written contract entered into in connection with the issuance of State-supported debt, or in connection with such State-supported debt already outstanding, with a counterparty to provide for an exchange of payments based upon fixed and/or variable interest rates, and shall be for exchanges in currency of the United States of America only.
3. "State-supported debt" shall mean all debt included in subdivision one of section sixty-seven-a of this chapter.
4. "Authorized issuer" shall mean the state or any state public corporation which is authorized to issue State-supported debt.
5. "Governing board" shall mean, for each state public corporation which is authorized to issue State-supported debt, its board of directors or, in the absence of a board of directors, its other appropriate supervising body and, in relation to state general obligation debt, the state comptroller.
6. "Variable rate debt instruments" shall mean, for any calculation purpose, (i) variable rate bonds or (ii) any state-supported debt and related interest rate exchange or similar agreements which, when considered together, result in an authorized issuer effectively paying interest at a rate or rates which varies from time to time, but shall not include any variable rate bonds, or any state-supported debt considered together with related interest rate exchange or similar agreements issued on or before July first, two thousand five, during any period that such instrument or instruments provide for payment by the authorized issuer of a fixed rate throughout the then current fiscal year of the state.
7. "Excluded agreements" shall mean the total notional amount of interest rate exchange or similar agreements entered into for the purpose of reducing or eliminating a situation of risk or exposure under an existing interest rate exchange or similar agreement, including, but not limited to a counterparty downgrade, default, or other actual or potential economic loss; provided, however, that for agreements entered into on and after April first, two thousand seven "excluded agreements" shall mean the total notional amount of interest rate exchange or similar agreements entered into for the purpose of reducing or eliminating a situation of imminent risk under an existing interest rate exchange or similar agreement, including, but not limited to a counterparty downgrade, default, or other actual or imminent economic loss.

§ 69-b. Limitation on amount of variable rate debt instruments. As of the initial date of each issuance of variable rate bonds or the date of entering into any other variable rate debt instruments, or for debt issued on or before July first, two thousand five upon conversion of any state-supported debt to variable rate debt instruments, the total of the principal and notional amounts of such variable rate debt instruments outstanding and in effect shall not exceed an amount equal to fifteen percent of the total principal amount of state-supported debt outstanding.

§ 69-c. Variable rate bonds. Notwithstanding any other provision of law to the contrary, any State-supported debt may be issued as variable rate bonds. Notwithstanding any other provision of law to the contrary, for purposes of calculating the present value of debt service and calculating savings in connection with the issuance of refunding indebtedness, (i) the effective interest rate and debt service payable on variable rate bonds in connection with which, and to the extent that, an authorized issuer has entered into an interest rate exchange or similar agreement pursuant to which the authorized issuer makes payments based on a fixed rate and receives payments based on a variable rate that is reasonably expected by such authorized issuer to be equivalent over time to the variable rate paid on the related variable rate bonds, shall be calculated assuming that the rate of interest on such variable rate bonds is the fixed rate payable by the authorized issuer on such interest rate exchange or similar agreement for the scheduled term of such agreement; (ii) the effective interest rate and debt service on variable rate bonds in connection with which, and to the extent that, an authorized issuer has not entered into such an interest rate exchange or similar agreement shall be calculated assuming that interest on such variable interest rate bonds is payable at a rate or rates reasonably assumed by the authorized issuer; (iii) the effective interest rate and debt service on any bonds subject to optional or mandatory tender shall be a rate or rates reasonably assumed by the authorized issuer; (iv) any variable rate bonds that are converted or refunded to a fixed rate, whether or not financed on an interim basis with bond anticipation notes, shall be assumed to generate a present value savings; and (v) otherwise, the effective interest rate and debt service on any bonds shall be calculated at a rate or rates reasonably assumed by the authorized issuer. Notwithstanding any other provision of law to the contrary, for calculating the present value of debt service and calculating savings in connection with the issuance of refunding indebtedness, the refunding of variable rate debt instruments with new variable rate debt instruments shall be excluded from any such requirements, if effectuated for sound business purposes.

§ 69-d. Interest rate exchange or similar agreements.

1. Authorized issuer; powers. In connection with the issuance of State-supported debt, or in connection with such State-supported debt already outstanding, an authorized issuer shall have the power to:
  - a. enter into interest rate exchange or similar agreements with any person under such terms and conditions as the authorized issuer may determine, including provisions as to default or early termination and indemnification by the authorized issuer or any other party thereto for loss of benefits as a result thereof;
  - b. procure insurance, letters of credit or other credit enhancement with respect to agreements described in paragraph (a) of this subdivision;

- c. provide security for the payment or performance of its obligations with respect to agreements described in paragraph (a) of this subdivision from such sources and with the same effect as is authorized by applicable law with respect to security for its bonds, notes or other obligations, provided, however, that any payment or performance of obligations with respect to agreements described in paragraph (a) of this subdivision in connection with debt obligations which carry the full faith and credit of the state shall be subject to appropriation;
  - d. the state, acting through the director of the budget or other state officials who are so authorized by applicable law with respect to such bonds, notes or other obligations, shall also be authorized to enter into or amend agreements related to such State-supported debt to provide for payment, subject to appropriation, to such authorized issuer of any amounts required to be paid by such authorized issuer under any such interest rate exchange or similar agreement;
  - e. if such funds are available, provide collateral for its own obligations under any such interest rate exchange or similar agreement; and
  - f. modify, amend, or replace, such agreements.
2. Interest rate exchange; limitations. Any interest rate exchange or similar agreements entered into pursuant to subdivision one of this section shall be subject to the following limitations:
- a. the counterparty thereto shall have credit ratings from at least one nationally recognized statistical rating agency that is within the two highest investment grade categories and ratings which are obtained from any other nationally recognized statistical rating agencies shall also be within the three highest investment grade categories, or the payment obligations of the counterparty shall be unconditionally guaranteed by an entity with such credit ratings;
  - b. the written contract shall require that should the rating: (i) of the counterparty, if its payment obligations are not unconditionally guaranteed by another entity, or (ii) of the entity unconditionally guaranteeing its payment obligations, if so secured, fall below the rating required by paragraph (a) of this subdivision, that the obligations of such counterparty shall be fully and continuously collateralized by direct obligations of, or obligations the principal and interest on which are guaranteed by, the United States of America, with a net market value of at least one hundred two percent of the net market value of the contract to the authorized issuer and such collateral shall be deposited with the authorized issuer or an agent thereof;
  - c. the total notional amount of all interest rate exchange or similar agreements for all authorized issuers to be in effect shall not exceed an amount equal to fifteen percent of the total amount of state-supported debt outstanding as of the initial date of entering into each new agreement; provided, however, that such total notional amount shall not include any excluded agreements.

- d. no interest rate exchange or similar agreement shall have a maturity exceeding the maturity of the related State-supported debt;
  - e. each interest rate exchange or similar agreement shall be subject to an independent finding that its terms and conditions reflect a fair market value of such agreement as of the date of its execution, regardless of whether such agreement was solicited on a competitive or negotiated basis; and
  - f. each interest rate exchange or similar agreement, including the modification or termination thereof, shall be subject to the approval of the director of the budget, the governing board of such authorized issuer, and shall not be considered a project for the purposes of article one-A of the public authorities law.
3. Guidelines and reports.
- a. Prior to authorizing the approval of any contract for interest rate exchange or similar agreement pursuant to subdivision one of this section, the authorized issuer's governing board shall adopt guidelines for the use of interest rate exchange or similar agreements which shall include, but not be limited to the following:
    - i. the conditions under which such contracts can be entered into;
    - ii. the methods by which such contracts are to be solicited and procured;
    - iii. the form and content such contracts shall take;
    - iv. the aspects of risk exposure associated with such contracts;
    - v. standards and procedures for counterparty selection;
    - vi. standards for the procurement of credit enhancement, liquidity facilities, or the setting aside of reserves in connection with such contracts;
    - vii. provisions for collateralization or other requirements for securing the financial interest in such contracts;
    - viii. the long-term implications associated with entering into such agreements, such as costs of borrowing, historical trends, use of capacity for variable rate bonds and related credit enhancements, and any potential impact on the future ability to call bonds, including opportunities to refund related debt obligations, and similar considerations;
    - ix. the methods to be used to reflect such contracts in the authorized issuer's financial statements; financial monitoring and periodic assessment of such contracts by the authorized issuer; and
    - x. such other matters relating thereto as the governing board shall deem necessary and proper.
  - b. The guidelines to be adopted pursuant to paragraph (a) of this subdivision shall be developed in consultation with and subject to the approval of the director of the budget.
  - c. The authorized issuer shall issue a monthly report to the director of the budget, the chairs of the senate finance committee and the assembly ways and means committee, and the state comptroller, on or before the fifteenth day of each month in any state fiscal year in which it enters into or continues to be a party to a contract for interest

rate exchange or similar agreement, which shall list all such contracts entered into pursuant to this section, and shall include, but not be limited to, the following information for each such contract, as applicable:

- i. a description of the contract, including a summary of the terms and conditions, rates, maturity, the estimated market value of each agreement, and other provisions thereof and the method of procurement;
  - ii. any amounts which were required to be paid and received, and any amounts which actually were paid and received thereunder;
  - iii. any credit enhancement, liquidity facility or reserves associated therewith including an accounting of all costs and expenses incurred, whether or not in conjunction with the procurement of credit enhancement or liquidity facilities;
  - iv. a description of each counterparty;
  - v. an assessment of the counterparty risk, termination risk, and other risks associated therewith; and
  - vi. such report shall include a copy of the guidelines required by paragraph (a) of this subdivision in the month after they are adopted or subsequently modified.
- d. In addition, the director of the budget shall issue and make public on or before October thirtieth of each year an annual performance report for the prior state fiscal year on interest rate exchange and similar agreements to the chairs of the senate finance committee and the assembly ways and means committee, which shall list all such interest rate exchange or similar agreements entered into pursuant to this section and in effect, and shall include, but not be limited to their annual and cumulative performance, including the net impact of the related variable rate debt instruments, support and related costs, and, for any excluded agreement entered into during such state fiscal year, an independent finding on how it reduced or eliminated a situation of risk or exposure under an existing interest rate exchange or similar agreement. The authorized issuers shall be required to provide such information in a timely manner on their respective interest rate exchange and similar agreements as the director of the budget determines necessary for the purpose of producing such annual performance report.

§ 69-e. Applicability. Nothing in this article shall be construed as to apply to or limit any debt obligation or related instrument of the state, state public corporations, or any other issuers except those obligations or instruments which are or relate to State-supported debt.