ISSUE BRIEF

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The Fundamentals of Interest Rate Swaps

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Introduction

Interest rate swaps have emerged from the domain of giant global organizations to become an integral part of the larger world of governmental and corporate finance.

The first interest rate swap was a 1982 agreement in which the Student Loan Marketing Association (Sallie Mae) swapped the interest payments on an issue of intermediate term, fixed rate debt for floating rate interest payments indexed to the three month U.S. Treasury bill. The interest rate swap market has grown rapidly since then.

Figure 1 – Global Interest Rate Swap Market

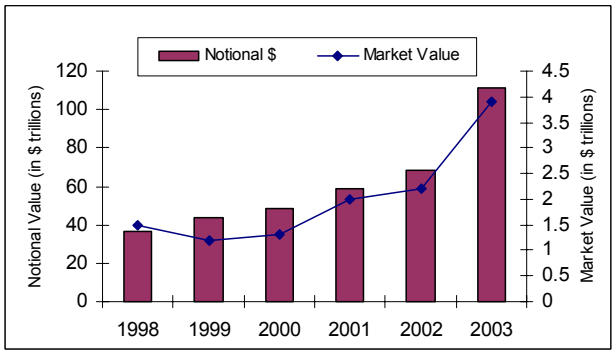


Figure 1 displays the market value and "notional" value of interest rate swaps outstanding from 1998 to the end of 2003. The notional value of $111 trillion is huge, but somewhat misleading because in an interest rate swap, the notional value is merely a specified dollar amount on which the exchanged interest payments are based, and it never actually changes hands.

The actual market value (i.e. the value of transactions based on current interest rates) however is also a significant amount, at approximately $4 trillion dollars.

This *Issue Brief* attempts to provide basic information regarding the use of interest rate swaps in municipal finance. It reviews data a financial manager would need to know when considering the use of interest rate swaps in the organization's borrowing program. They include:

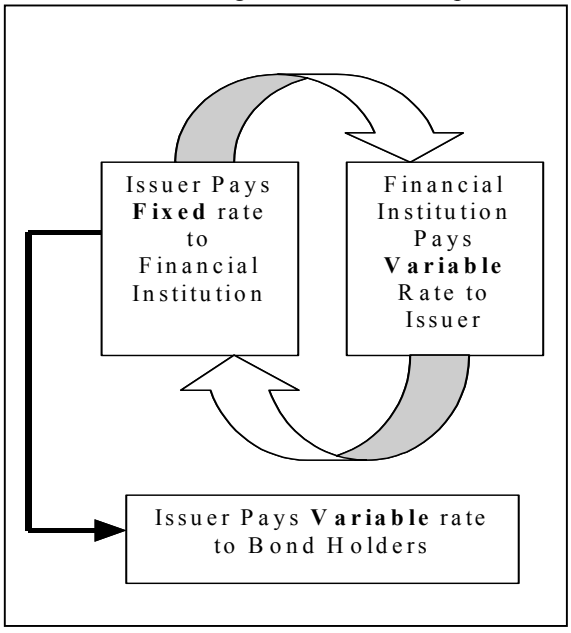
- Characteristics of an interest rate swap
- Pricing, costs, and the mechanics of terminating an interest rate swap
- Participants in an interest rate swap
- Typical uses of an interest rate swap
- Documentation, risks, and disclosure associated with an interest rate swap
- Effects on credit ratings
- Creating a swap management policy

What are Interest Rate Swaps?

An interest rate swap is a contractual arrangement between two parties, often referred to as "counterparties" (see Figure 2). The counterparties agree to exchange payments based on a defined principal amount, for a fixed period of time. In an interest rate swap, the principal amount is not actually exchanged between the counterparties and therefore is referred to as the "notional amount" or "notional principal".

Interest rate swaps do not generate new sources of funding themselves; rather, they convert one interest rate basis to a different rate basis (e.g., from a floating or variable interest rate basis to a fixed interest rate basis, or vice versa).

Figure 2 – Swap Process
A Floating-to-Fixed Rate Swap



A floating to fixed rate swap allows an Issuer with variable rate debt to hedge the interest rate exposure by receiving a variable rate in exchange for paying a fixed rate, thus decreasing the uncertainty of an Issuer's future net debt service payments, after consideration of the swap and bond interest payments in aggregate.

A fixed to floating rate swap allows an Issuer with fixed rate debt to take advantage of variable interest rates. The Issuer's net debt service costs will be lower if the floating swap rate paid by Issuer to the Counterparty remains below the fixed swap rate received by the Issuer.

Either of the two structures noted above can be used in conjunction with existing debt or can be combined with newly issued debt. In addition, there is an increasing use of the interest rate swap as a tool for asset and liability matching.

Basics of an Interest Rate Swap

The payments on an interest rate swap are a function of the (1) notional principal amount, (2) interest rates, and (3) the time elapsed between payments. The counterparties to the swap agree to exchange payments on specific dates, according to a predetermined formula. Exchanges typically cover periods ending on the payment date and reflect differences between the fixed rate and the floating rate during the specific period. If the floating rate exceeds the fixed swap rate, the floating ratepayer pays the differential to the fixed ratepayer. On the other hand, if the floating rate index is less than the fixed swap rate, the fixed ratepayer pays the interest rate differential to the floating ratepayer.

Fixed and floating payments are netted against each other with a transfer of cash made by the owing party on the specified scheduled payment dates. Typically payments are determined on a monthly, semiannual, or annual basis.

As noted earlier, a swap does not involve an actual exchange of principal. In addition, the swap does not alter the Issuer's obligations, including debt servicing, to existing bondholders.

Examples of Generic Interest Rate Swaps

Example 1: Floating to Fixed Rate Swap
The Issuer issues $10,000,000 of variable rate bonds. The variable rate bonds initially bear interest at 1.5 percent, but the rate can change weekly. The Issuer then enters into a swap contract with a financial institution (the "Counterparty"). Under the swap contract, the Issuer agrees to pay the Counterparty a fixed interest rate of 4.0 percent, and the Counterparty agrees to pay the Issuer a variable rate based on an index, which approximates the variable rate on the Issuer's

bonds. Both payment streams assume a notional amount of $10,000,000. The net effect is that the Issuer has synthetically converted a variable rate obligation (the bonds) to a fixed rate obligation (the swap).

Example 2: Fixed to Floating Rate Swap
The Issuer issues $10,000,000 of 4 percent fixed rate bonds. The Issuer then enters into a swap contract with the Counterparty. Under the swap contract, the Issuer agrees to pay the Counterparty a variable rate based on an index, and the Counterparty agrees to pay the Issuer the fixed rate on the Issuer's bonds. Both payment streams assume a notional amount of $10,000,000. The net effect is that the Issuer has synthetically converted a fixed rate obligation (the bonds) to a variable rate obligation (the swap).

Pricing

Pricing of an interest rate swap is often complex but can be broken down into two basic components:

- The "break even" rate, which represents the rate at which the swap dealer can create the swap itself, and
- The "markup" or profit added to the break-even rate by the swap dealer.

The individual swap dealer determines the break-even rate for any swap, using actively traded, liquid financial instruments, widely accepted modeling techniques, and dealer-to-dealer hedging. As a result, the break-even swap rate for any particular swap is basically the same for all swap dealers.

Subjectivity enters swap pricing when the swap dealer then adds their "markup" to the break-even rate. The markup represents the profit charged by the swap dealer for providing the swap. The amount of profit or markup charged is not standardized among the swap dealers, and as a result, varies greatly. As with the pricing of bonds and other financial instruments, the pricing of swaps is a mix of objective financial analysis subjective economic considerations and degree of competitive forces. As a result, it is generally advisable for the Issuer to seek pricing from multiple swap dealers and to enlist the help of specialized advisory firms in evaluating swap transactions to ensure reasonable markups.

Costs

The cost of executing an interest rate swap includes the markup charged by the Counterparty as noted above. However, obtaining the swap through a competitive bid can minimize this component of the swap price. In addition, the Issuer may hire a swap advisor to assist in securing the best terms and pricing for the swap either through competitive bid or a supervised negotiation. Swap advisory fees typically range from 1–5 basis points per year based on transaction size and complexity. Swap advisory fees can be paid by the swap Counterparty via an adjustment to the fixed swap coupon or directly by the Issuer. Legal fees typically include a one time flat fee to draft/review swap documentation. All fees should be fully disclosed in the swap documentation.

Terminating the Swap

The market or replacement value of a swap fluctuates over time as interest rates change. Gains or losses based on changes in interest rates may become realized if an interest rate swap is terminated in advance of its contractual maturity date. The termination amount depends on interest rates in the prevailing market at the time of termination compared to those used in the swap contract. Early termination of a swap may occur based on a series of business, credit, legal and financial events negotiated between the parties.

An interest rate swap can be terminated at any time by giving notice to the Counterparty and agreeing to terminate the transaction on a market or replacement value basis. The termination amount (i.e., market value) will depend on the relationship between the fixed rate on the swap and current market rates for swaps having similar terms.

In general, if an Issuer is paying the fixed rate on a swap and interest rates decline, the Issuer will be required to pay a termination payment to terminate the swap. This compensates the Counterparty for the opportunity cost of losing the fixed rate payment at a rate that cannot be obtained in the current market. Conversely, if interest rates rise, the Issuer receives the market value of the remaining swap upon termination, reflecting the fact that it will be foregoing variable rate payments. A discussion of *termination risk* is provided on page 7 of this *Issue Brief*.

In addition, it should be noted that it is common practice for swap counterparties to add markup to the price quoted to the Issuer to terminate the swap transaction. This markup will increase the fee required by the Issuer to terminate the swap or decrease the fee the swap Counterparty is willing to pay to the Issuer to terminate the swap.

In practice, early termination fees can be significant and may eliminate any savings gained from terminating the swap. As a result, it is generally advisable for an Issuer to enlist the help of a specialized advisory firm in evaluating swap transaction terminations to ensure reasonable termination payments.

Participants

Early interest rate swaps were brokered transactions where financial intermediaries would seek counterparties to the transaction among their customers. The intermediary collected a brokerage fee as compensation, but did not maintain a continuing role once the transaction was completed. The contract was between the two ultimate swap users, who exchanged payments directly.

Swap Provider (Counterparty)

Today the swap market has evolved into one that is dominated by large financial institutions acting as "swap providers" or "swap dealers". Swap dealers or providers act as "market makers" or intermediaries that stand ready to become Counterparty to swap transactions at any time (subject to certain credit, underwriting, and risk acceptance associated with a particular swap transaction). Because the swap dealer is the actual Counterparty to the Issuer, the Issuer needs to be comfortable with the financial condition of the swap dealer both initially and on an ongoing basis.

In the current market, major municipal swap providers or counterparties include the following four broad categories of financial institutions:

- Domestic Commercial Banks,
- Foreign Commercial Banks,
- Investment Banks, and
- Insurance Companies.

Counterparty selection criteria and methodologies can include:

Competitive Bid. The best price for any particular transaction is often obtained through the competitive bid process. Acceptable counterparties are identified, a credit package and draft document is developed and distributed, a solicitation form is created outlining the terms of the deal, an auction or bid is conducted, and the best price wins the deal.

Negotiated. The transaction is negotiated with a single party or parties. This will often be completed in conjunction with independent price verification by the

swap advisor to confirm to the Issuer that the price obtained is a reasonable price. This approach often makes sense when 1) conducting a competitive bid may create a disruption in the market, 2) the terms and conditions on a specific transaction are unique and not suited to a competitive bid, or 3) a particular firm has provided significant value to developing strategies that the Issuer believes are unique and beneficial.

Competitive Bid with Some Negotiated Aspects. The transaction is obtained through a competitive bid but a specific provider(s) is given an opportunity to match the best bid or provide some other concession to the bid process. This approach combines aspects of both the competitive and negotiated processes outlined above. As with the negotiated transaction, this often will be completed in conjunction with a price verification to confirm that the price obtained is reasonable.

Choosing a swap provider will depend on numerous factors including:

- Credit rating - typically AA or better;
- Price - a key component;
- Documentation provisions, including optional termination, transfer, collateralization; and
- Prior experience with similar transactions, level of experience, and past relationships with the Issuer.

Other Participants

In addition to the Issuer and the swap provider, participants in the swap process are similar to those involved in the issuance of a debt financing. They include:

Financial Advisor. Provides a review and analysis of financing alternatives being considered. Coordinates the efforts of team members and the delivery of pricing analysis.

Swap Advisor. Provides a review and analysis of swap alternatives and can assist in the procurement of the swap, including conducting a competitive bid. Provides ongoing monitoring of swap market conditions, advises on rates and structure, and participates in reviewing the closing documentation. The swap advisor also can assist in the development of a Swap Policy and ongoing monitoring and swap valuation. Issuers should consider the need to obtain a "fair market certificate" from their swap advisor in regard to pricing, and fully discuss how such certification will be defined.

Swap/Bond Counsel. Ensures compliance with current bond resolutions and legal statutes along with preparation and review of closing documentation.

Swap Insurer. Insures scheduled payments from the Issuer to the swap Counterparty.

Documentation

The International Swaps and Derivatives Association, Inc. (ISDA) is the global trade association for the derivatives industry. The ISDA Master Agreement is the standard governing document used throughout the industry that serves as a framework for all derivative transactions between counterparties, including interest rate swaps. Swap documentation can be negotiated for individual swap transactions or can be negotiated once, prior to the first transaction, and used for multiple transactions.

Standard ISDA documentation for swaps usually consists of: (1) a master agreement, which is a preprinted and standardized form; (2) a schedule, which supplements and consists of negotiated amendments to the terms of the master agreement; (3) a credit

support annex (CSA), which addresses the complexities of the pledge and transfer of collateral or some other form of credit support; and (4) one or more transaction confirmations, which set forth the economic and legal essentials of particular transactions or "trades," drawing from standard sets of defined terms. Swap providers often require legal opinions or other certifications stating that an Issuer has the legal authority to enter into a swap.

Legal counsel and/or the swap advisor should review all swap documentation to confirm compliance with local and state law and to ensure that terms and conditions are commercially acceptable and represent the best terms and conditions available to the Issuer at the time. Failure to properly negotiate the documentation in a manner that is the most favorably available to the Issuer may lead to significant difficulties and costs to the Issuer during the life of the transaction.

Advantages to Using Swaps

Benefits of using interest rate swaps may include:

- Lowering the cost of funding;
- Hedging interest rate exposure or increasing the certainty of future funding costs;
- Synchronizing cash flows to reflect asset/liability mix; and
- Broadening the Issuer's investor base.

Lowering Debt Service Costs. The Issuer may be able to lower debt service in periods of declining short-term interest rates by swapping fixed rate payment obligations for variable rate payments.

In exchange for assuming certain risks associated with a swap, it may be possible to achieve a lower fixed rate by issuing variable rate bonds and entering into a fixed rate swap agreement than could be achieved by merely issuing fixed rate bonds directly. Conversely, in certain interest rate or credit enhancement environments, it may be more cost effective to issue fixed rate bonds and swap to variable rate payments than to issue variable rate bonds directly.

Hedging Against Variable Interest Rates. The Issuer may want to change the ratio of fixed rate to variable rate debt in its portfolio. Employing an interest rate swap, either fixed to variable in a decreasing rate market or variable to fixed in an increasing rate market, might be an appropriate method of changing the risk/return profile associated with its current and future debt needs.

Synchronizing Cash Flows to Reflect Asset/Liability Mix. Interest rate swaps also allow Issuers to structure their asset/liability mix to better reflect the timing of capital projects and investments. As cash flow needs change, interest rate swaps allow the Issuer to adjust the timing and level of net payments associated with existing bonds without going through the time, expense and approval hurdles necessary in issuing new or refunding existing debt.

Broadening the Issuer's Investor Base. The interest rate swap allows the Issuer to effectively convert the type of interest rate mode associated with a borrowing from one type to another. This may allow the Issuer to sell bonds in one market, for example in the variable rate market, even though the Issuer desires to pay a fixed rate. By adding the interest rate swap, the Issuer can convert it's payments associated with the bonds to a fixed rate but utilize the variable rate market for the issue. This may allow the Issuer to access an investor base not previously used.

Risks Associated with Interest Rate Swaps

The following risks are inherent in the typical swap contract:

Counterparty Risk is the risk that the Counterparty will not honor its payment obligations under the swap contract because the Counterparty has defaulted. If that happens, the Issuer no longer receives payments from the Counterparty. This risk can be addressed through the establishment of guidelines for exposure levels, ratings thresholds and, particularly, establishing collateralization requirements. Many entities attempt to mitigate this risk by swapping only with counterparties with ratings of AA or higher.

Basis Risk occurs in situations when the variable rate paid by the Issuer on its bonds is different than the floating interest rate received under the swap. Swaps commonly use an index such as the London InterBank Offer Rate (LIBOR) or the Bond Market Association (BMA) Index. Historically, 67 percent of LIBOR or 100 percent of the BMA index approximates an Issuer's cost of variable rate borrowing, but at certain times, the discrepancies between the actual cost of the Issuer's variable rate and the index rate it receives can be significant. In the event that an unfavorable significant difference occurs, the Issuer, which expected to pay a fixed rate on the swap, also must cover the "spread" or difference between the variable rate it pays and the variable rate it receives.

Termination Risk is the risk that a swap may terminate or be terminated prior to its planned expiration. This risk can be managed by assessing possible events that could trigger the early termination of a swap. If a swap is terminated earlier than expected due to the default of the Counterparty, the Issuer still may be required to make a termination payment. The termination payment is the economic value of the difference between current rates and the contracted swap rate for the remaining life of the swap.

Rollover Risk occurs when the term of the bond or asset being hedged does not coincide with the term of the swap. Rollover risk refers to the possibility that the Issuer is unable to enter into a satisfactory new contract when the original one expires. For example, the Issuer may enter into a five-year swap contract after issuing bonds, but the bonds may have been issued for a 20-year period. Thus, after five years, a new swap would have to be initiated at prevailing rates for the remaining 15 years.

Amortization Risk is defined as the mismatch of the expiration of the underlying obligation and its hedge, the swap agreement. Amortization risk is the possibility that, as a result of an early redemption of the underlying bonds, the repayment schedule of the bonds differs from the underlying notional amount of the swap agreement. This risk will only arise if the Issuer wants to redeem the bonds ahead of schedule.

Tax Risk is the risk associated with changes to the marginal tax rate. Interest rates on tax-exempt municipal bonds are, in part, a function of the marginal income tax rate for current and potential bondholders. For example, as the marginal tax rate increases, municipal bonds become more attractive, and conversely, as tax rates fall, tax-exempt bonds become less attractive.

Disclosure

Disclosure associated with municipal swap reporting has not been uniform in the past. However, an Issuer should carefully review disclosure requirements prior to entering into a swap. Currently, municipal Issuers reporting their financial results under the Financial Accounting Standards Board (FASB) guidelines are required to follow accounting and reporting standards of FASB Statement No. 133 (FAS 133) – *Accounting for Derivative Instruments and Hedging Activities.*

The larger share of the municipal market reports under the Government Accounting Standards Board (GASB). GASB has made

an effort to focus on this segment of the market though *Technical Bulletin No. 2003-1 Disclosure Requirements for Derivatives Not Reported at Fair Value on the Statement of Net Assets*. This bulletin became effective for fiscal years ending on or after June 15, 2003.

The GASB is currently undertaking a broader project on standards for reporting swaps, which is currently expected to result in a recommendation during 2005. A description of Technical Bulletin No. 2003 1 is available at the GASB website at www.gasb.org.

In February 2004, the National Federation of Municipal Analysts (NFMA) released a "white paper" on issues related to swaps disclosure. It provides a comprehensive guide to appropriate practices for disclosure and provides details regarding swap disclosure.

NFMA considers the following disclosure items important in providing a comprehensive view of the Issuer's financial profile:

Risk Management Plan

- The overall risk management plan;
- How swapping helps accomplish risk management objectives;
- The process of monitoring and evaluation of swaps; and
- Discussion of specific risks associated with the transaction (see above discussion on risk types).

Debt Profile

- The current and future mix of fixed and variable rate debt;
- Derivatives usage and liquidity; and
- Priority of the swap periodic payments and termination payments relative to debt service obligations.

Swaps Summary

- Description of swap objectives (e.g., hedging tool for investments or debt);
- Listing of all individual swaps; and
- Transaction summary listing notional amounts, Counterparty, termination dates, and bonds, if any, linked to the swap.

Significant Terms

- Underlying indexes or interest rates, including terms such as caps and collars;
- Notional, face, or contract amount dollar amount;
- Net cash flow should be disclosed in addition to the debt service payments of the associated debt;
- Effective start and termination dates;
- The amount of cash paid or received when the swap was initiated; and
- The fair market value of the swap at the reporting date, and if that fair market value is based on other than quoted market prices, the method and significant assumptions to estimate.

The administrative workload for monitoring swaps and preparing disclosure should not be taken lightly.

Credit Rating Impact

The major credit rating agencies consider interest rate swaps when making credit rating decisions. The implementation of an interest rate swap, in isolation, does not necessarily have an impact on ratings, either positive or negative. The rating agencies are most concerned with the Issuer's understanding of how interest rate swaps fit within the overall risk management program.

Rating agencies expect Issuer officials to be able to:

- Present their overall asset liability management/policies;
- Explain the reason for entering into the swap agreement;
- Explain the risks and benefits in simple terms, including: providing interest expense and cost exposure figures under

various interest rate scenarios, identifying the source of payment under adverse circumstances, and knowing the costs, benefits, and risks of alternative interest rate scenarios;
- Understand obligations under the swap;
- Comprehend the Master Trust Indenture implications; and
- Prepare and provide ongoing disclosure information to bondholders and the rating agencies.

Swap Policy

The purpose of the swap policy is to establish guidelines for the execution and management of the swap program. The swap policy confirms the commitment of management, staff, advisors, and other decision makers to adhere to sound financial and risk management practices, including achieving the lowest possible cost of capital within prudent risk parameters. Issuers should review, analyze, and modify swap policies to include the following:

Overall Strategy. Describe how and why swaps will complement the overall debt management plan. A key ingredient to the overall strategy is to prohibit swaps to be used for speculative purposes.

Authorization. Provide information on the types of swaps allowed and who has the authority to approve their use.

Risk Analysis. Requires a comprehensive risk analysis of individual swaps and their impact on the total debt portfolio. This would include a detailed analysis of Counterparty, basis, termination, amortization, and tax risks described earlier in this issue brief.

Third Party Relationships/Bid Process. Dealings with banking partners should be structured and executed in a manner consistent with standing practices for procuring investment banking and other similar services, so as to achieve the highest level of service at the best available terms.

Monitoring, Reporting and Disclosure. Documents should follow ISDA guidelines and be prepared and updated to provide accurate and appropriate information to credit rating agencies, bondholders, and the Issuer's governing body.

The Government Finance Officers Association (GFOA) issued a recommended practices document titled *Use of Debt Related Derivatives Product and the Development of a Derivatives Policy* in 2003 that outlines many of these elements.

Issuers should assess the monitoring and disclosure workload and system requirements as part of developing a swap policy.

Conclusion

Entering into an interest rate swap may be appropriate for an Issuer in certain situations; however, the Issuer should carefully consider the risks and rewards of such an agreement.

Below are some basic tenets to assist Issuers in determining if interest rate swap agreements are appropriate for their situation.

1) Swaps are complicated and involve risks. Know what you are buying.

If the Issuer does not fully understand the workings of a particular interest rate swap or its effect on the Issuer's debt portfolio in different interest rate environments and market conditions, the swap contract should not be undertaken. While interest rate swaps may be legally authorized or permitted by statute, they are not appropriate for all situations. Issuers should make independent, informed decisions about the suitability or appropriateness of the product for any specific purpose. They should not rely solely on the swap provider to make this determination. The goals of the swap

provider and the Issuer can be very different. Skilled swap advisors are available to help the Issuer through the process.

Issuers should understand the risks associated with swaps before implementing them, and should evaluate whether the risks are consistent with their mandate to manage public funds prudently and preserve capital.

2) Recruit and work with experienced professionals. Experience Counts.

The complexity and potential financial exposure, along with the myriad of risks associated with interest rate swaps, necessitate strong consideration of the team working with the Issuer. Interest rate swaps carry a high level of risk associated with the benefits provided.

It is very important that the Issuer not only understands the risks, but also takes every step necessary to mitigate these risks, while being compensated accordingly. This requires an experienced and seasoned team of professionals that are versed in current market practices and that can be relied upon for sound advise and counsel.

3) Adopt a written Swap Policy.

Issuers should develop and adopt a Swap Policy that details and clarifies objectives and the procedures and constraints necessary to reach those objectives. A swap policy set forth in adequate detail, combined with appropriate controls, can guide the activity of treasury officials, financial advisors, credit rating agencies and bondholders. All swap policies should include guidelines on procurement, adequate controls, monitoring procedures, limits on overall swap levels, and reporting requirements to the governing body or officials ultimately responsible for performance.

4) Develop comprehensive controls and oversight and implement them.

Issuers should implement adequate controls and oversight to ensure that financing decisions are made within the parameters of the established swap policy. Issuers also should establish a reporting and review process. Financing decisions should be closely reviewed by financial management and effectively communicated to the appropriate government body. The Issuer should monitor under the strictest accounting controls and best practices.

New and complex financial strategies are constantly being created to meet Issuers' needs. Treasury officials should incorporate new products into their debt strategy only if they have the time and commitment to adequately understand and monitor the product. They must have the staff to monitor the debt instruments and related risks and be able to respond to changing financial conditions.

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The following provides information on the California Code Sections that addresses the authority to enter into interest rate swaps and an abbreviated glossary of swap related terms.

Authority to Issue Interest Rate Swaps (California Government Code Section 53534)

"Any provision of law to the contrary notwithstanding, a city, county, or city and county may enter into contracts commonly known as "interest rate swap agreements" or "forward payment conversion agreements" with any person providing for the exchange of payments between the person and the city, county, or city and county, including, without limitation, contracts providing for the exchange of fixed interest payments for floating

payments or floating interest payments for fixed payments, or a combination thereof. The contracts may be made upon the terms and conditions established by the legislative body of the city, county, or city and county. The authority conferred by this section includes the authority to enter into any and all contracts incident to the exercise of the authority conferred by this section including, without limitation, contracts to obtain credit enhancement devices and contracts for the performance of professional services. However, these contracts may be made only if all securities or bonds included in the contracts are rated in one of the three highest rating categories by two nationally recognized rating agencies selected by the legislative body of the city, county, or city and county, and if there has been receipt, from any rating agency rating the bonds, of written evidence that the contract will not adversely affect the rating".

Additional Government Code Sections References include 5900 – 5909, 5920 – 5924 53530 – 53534, 63021 – 63028, and Public Utilities Code Section 12871 – 12875.

Selected Glossary of Terms

BMA Index – The Bond Market Association (BMA) Municipal Swap Index is the principal benchmark for the floating rate payments for tax-exempt Issuers. The BMA Index is a national rate based on a market basket of approximately 200 high grade, seven-day tax-exempt variable rate issues of $10 million or more.

Counterparty – A party in a derivative transaction.

Hedge – A method of reducing risk by making arrangements (swap) designed to offset the risks of existing contracts (bonds).

London Inter Bank Offered Rate (LIBOR) – The primary fixed income index reference rate used in the European financial markets. Most taxable floating rates are quoted as LIBOR plus or minus a spread.

Net Present Value (NPV)– The expected value of a future cash flow or stream of cash flows discounted to the present at an appropriate interest (i.e., discount) rate. Due to the "time value of money" one dollar in the future is not worth one dollar today. The NPV describes how much one dollar in the future is worth when discounted to today's dollars.

Notional Principal – The nominal value used to calculate swap payments and on which many other risk management contract payments are based. In an interest rate swap agreement, each period's rates will be multiplied by the notional principal amount to determine the value of each Counterparty payment.

Plain Vanilla – A reference to a standard financial instrument with few or no unusual or unique features. The unusual or unique features usually are added to financial contracts to allow the contract to appeal to the interests or needs of a specific Issuer or investor. Plain vanilla is designed to allow for a much broader appeal.

Swap Rate – The market interest rate on the fixed rate side of a swap. At the time the swap is initiated, the swap rate will typically be the same as the fixed rate payment (adjusted for any negotiated premium or discount).

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