Memorandum

To: Chairman and Commissioners **Date:** April 18, 2001

From: Robert I. Remen **File No:** K 20
BOOK ITEM 4.5
INFORMATION

Ref: ANALYSIS OF GARVEE BONDING CAPACITY 2001

Chapter 862 of the Statutes of 1999 (SB 928) authorizes the State Treasurer to issue Federal Highway Grant Anticipation Revenue Vehicles (GARVEE bonds) and authorizes the Commission to select and designate projects to be funded for accelerated construction from bond proceeds. GARVEE bonds are tax-exempt anticipation notes backed by annual federal appropriations for federal aid transportation projects. Federal law was revised to make bond related costs of projects eligible for reimbursement, including principal and interest payments, issuance costs, insurance, and other costs incidental to financing.

The Commission, in cooperation with Caltrans and Regional Transportation Planning Agencies (RTPAs), is required to establish guidelines for project eligibility and the implementation of GARVEE bond financing allocations. The Commission adopted guidelines for eligibility for funding allocations under this program on November 2, 2000. Also, the State Treasurer is required to prepare an annual analysis of the bonding capacity of federal transportation funds deposited in the State Highway Account on or before April 1 of each year to guide the Commission in the administration of the program. On March 21, 2000, the Treasurer submitted his "Analysis of GARVEE Bonding Capacity 2000." Analyses of several scenarios were included in the report to assist the Commission in examining the broad policy issues necessary to fulfill its responsibility for development of program guidelines and related implementation plans.

On March 30, 2001, the Treasurer submitted his second annual report on GARVEE Bonding capacity which is attached. The 2001 analyses include scenarios with five-year maturity GARVEE notes issued in 2002 and maturing in 2007. The analyses show a resulting bonding capacity ranging from a low of $2.13 billion to a high of $2.57 billion under varying market conditions, assuming all federal deposits to the State Highway Account are used in the capacity calculations. These capacity amounts are higher than reported in last year's analysis. In 2000, the comparable bonding capacity ranged from a low of $1.80 billion to a high of $2.38 billion. If the portion of federal deposits "passed through" to local agencies is excluded from the analyses, the bonding capacity is reduced, ranging from a low of $1.62 billion to a high of $1.95 billion. In 2000, the comparable bonding ranged from a low of $1.33 billion to a high of $1.90 billion.

This program allows a region or Caltrans to access future federal funds to finance a transportation project with a cost well beyond funds available in one or two STIP cycles. The intent of the Legislature in authorizing the use of GARVEE financing in California is to accelerate the funding and construction of critical transportation infrastructure projects in order to provide congestion relief benefits to the public significantly sooner than is possible through traditional funding mechanisms. GARVEE financing of a project is appropriate when the additional public benefits resulting from early construction exceed financing costs.

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PHILIP ANGELIDES
Treasurer
State of California

March 30, 2001

Mr. Roger A. Kozberg
Chairman
California Transportation Commission
1120 N Street, Room 2233 (MS-52)
Sacramento, CA 95814

Dear Chairman ~~Kozberg~~: Roger

It is my pleasure to forward for your review and consideration "Analysis of GARVEE Bonding Capacity 2001." This is the second annual capacity analysis prepared in compliance with the provisions of SB 928 (Burton) (Chapter 862 of 1999), which was sponsored by the State Treasurer's Office to ensure California had the necessary state legislative authority to make use of Grant Anticipation Revenue Vehicles, or GARVEE notes, a new financing tool for acceleration high priority transportation projects.

Among other things, the California Transportation Commission is required to prepare, in conjunction with the Treasurer's Office, an annual analysis of California's bonding capacity for issuing GARVEE notes, which are capital market borrowings repaid by federal transportation funds deposited in the State Highway Account.

Please let me know how this office may be of further assistance as you move forward to implement the GARVEE program.

Sincerely,

Philip Angelides
State Treasurer

Enclosure

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Analysis of GARVEE Bonding Capacity 2001

Report to the
California Transportation Commission
March 2001

State Treasurer Philip Angelides

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Executive Summary

This report is provided to the California Transportation Commission to assist its compliance with the provisions of SB 928 (Burton) (Chapter 862 of 1999) requiring the Commission to prepare, in conjunction with the Treasurer's office, an annual analysis of California's bonding capacity for issuing Grant Anticipation Revenue Vehicles, or GARVEE notes, which are capital market borrowings repaid by federal transportation funds deposited in the State Highway Account.

The State's authority for issuance of GARVEE notes derives both from federal legislation and from the passage of SB 928 in 1999. The bill was sponsored by the State Treasurer's Office to ensure California had the necessary state legislative authority to make use of this new financing tool for accelerating high priority transportation projects. The bill became effective January 1, 2000. The first bonding capacity analysis was prepared in March 2000.

The issuance of GARVEE notes is subject to one important condition: the Treasurer may not authorize the issuance of the notes if the annual debt service on all outstanding GARVEE notes would exceed 30 percent of the State's historical annual deposits in the State Highway Account from federal funding.

Thus, the current and any future bonding capacity analyses must take place in the context of this "cap." These historical annual deposits are a known quantity at any given point in time, but clearly are subject to change over time, and must be examined anew at the time of each potential GARVEE note issuance.

Given the early stage of the GARVEE program, additional factors affecting bonding capacity, such as maturity structures and interest rates, also are subject to uncertainty at this time. As a result, this report continues the practice of the 2000 report by providing numerous "sensitivity analyses" under a range of scenarios, with varying assumptions for maturity dates, interest rates, and available revenues. This approach will assist the Commission in examining and responding to future applications in the context of alternative scenarios.

Our analyses include scenarios with five-year maturity GARVEE notes issued in 2002 and maturing in 2007. The analyses show a resulting bonding capacity ranging from a low of $2.13 billion to a high of $2.57 billion under varying market conditions, assuming all federal deposits to the State Highway Account are used in the capacity calculations. These capacity amounts are higher than reported in last year's analysis. In 2000, the comparable bonding capacity ranged from a low of $1.80 billion to a high of $2.38 billion.

If one excludes the portion of these federal deposits characterized as "pass-through" revenues to local agencies, the bonding capacity is reduced, ranging from a low of $1.62 billion to a high of $1.95 billion given the same range of market conditions and a five-year maturity. In 2000, the comparable bonding capacity ranged from a low of $1.33 billion to a high of $1.90 billion. Two factors contributed to the increase in capacity: higher revenues and lower interest rates.

Additional scenarios of GARVEE bonding capacity are provided as "sensitivity analyses" under various revenue and interest rate conditions, with final maturities at ten, fifteen, and twenty years. Additional detail regarding the assumptions used for all the analyses are found in the body of this report and in the various attachments.

This report demonstrates that the capacity existing within the State's GARVEE program can be affected dramatically by a wide range of circumstances, including policy and market factors. Therefore, this report should be used, not as a prescription, but rather as a tool for understanding the implications of alternative applications and the related potential GARVEE bond structures, which the Commission may be asked to consider over the coming year.

Purpose of Analyses

The following analyses are provided to assist the California Transportation Commission in meeting the requirements of SB 928 (Burton) (Chapter 862), sponsored by the State Treasurer's Office to ensure California had the necessary state legislative authority to make use of this new financing tool for accelerating high priority transportation projects. The analyses relate specifically to those requirements found in Section 14553(b) of the Government Code, which states:

> *"Notwithstanding Section 7550.5 of the Government Code, on or before April 1 of each year, the commission, in conjunction with the Treasurer's office, shall prepare an annual analysis of the bonding capacity of federal transportation funds deposited in the State Highway Account in the State Transportation Fund."*

The analyses have been performed consistent with the GARVEE notes bonding capacity guidelines provided in Section 14553.4 of the Government Code, which states:

> *"The Treasurer may not authorize the issuance of notes if the annual repayment obligations of all outstanding notes in any fiscal year would exceed 30 percent of the total amount of federal transportation funds deposited in the State Highway Account in the State Transportation Fund for any consecutive 12-month period within the preceding 24 months."*

Thus, the following analyses are intended to measure the capacity of the State Highway Account to support future issuance of GARVEE bonds, given both the historical record of deposits to the State Highway Account and the "cap" on total outstanding GARVEE notes which would result from the 30 percent limitation referenced above.

Uncertainty Drives Need for Sensitivity Analyses

At this time, the ultimate timing, maturity, interest costs, and level of available revenues related to any future GARVEE notes are uncertain. As a result, no single bonding capacity analysis is sufficient for purposes of guiding the Commission's evaluation and response to future applications for GARVEE funding. Therefore, to facilitate an informed consideration of future applications with structures and terms not yet know to the Commission, we have performed a series of "sensitivity analyses" under alternative scenarios. The factors that have been varied in these different analyses are identified in the following table.

Primary Factors Affecting Bonding Capacity Sensitivity Analyses
Final Maturity
Assumed Interest Rates
Annual Revenues Available
Treatment of Local "Pass-Through" Revenues

Information Sources

In performing the bonding capacity analyses for this report, the State Treasurer's Office (STO) is relying on data obtained from the California Department of Transportation (CalTrans) regarding deposits into the State Highway Account in the State Transportation Fund from federal transportation funds. This information was provided on a monthly basis for the period of January 1999 through December 2000. See **Attachment A** for the complete listing of these monthly deposits and related calculations. In addition, CalTrans provided the STO with information indicating that approximately 24 percent, or $33.8 million average per month, of the federal deposits consist of local "pass-through" revenues, earmarked for local agency projects. Alternative treatments of these local pass-through revenues were taken into account in the analyses, as discussed in more detail below.

Estimates of potential interest costs under various scenarios were developed by the STO based on indices published by such industry-standard sources as Municipal Market Data. The interest rates used in the analyses were developed given expected trading ranges of the State's future GARVEE notes as compared to current interest rates for "AA" rated California general obligation bonds of similar final maturities and weighted average maturities. Alternative market conditions also were taken into account in the analyses, as discussed in more detail below.

Summary of Alternative Assumptions

The two alternative scenarios for market conditions utilized in these analyses are as follows:

I. **Base Case:** Assumes current market conditions for AA-rated bonds

II. **Market Sensitivity Case:** Assumes alternative market conditions for AA-rated bonds

Within each of these alternative scenarios for market conditions, we also varied the revenue assumptions, as follows:

1. **Low Revenue:** Assumes the lowest cumulative 12-month revenues within the last 24 months (ending in December 2000)
2. **Average Revenue:** Assumes the average cumulative 12-month revenues within the last 24 months (ending in December 2000)
3. **High Revenue:** Assumes the highest cumulative 12-month revenues within the last 24 months (ending in December 2000)

Within each of these alternative market and varied revenue analyses, we also considered two different treatments of local pass-through revenues:

A. **Included:** Deposits representing local pass-through revenues are included for purposes of bonding capacity calculations

B. **Excluded:** Deposits representing local pass-through revenues are excluded for purposes of bonding capacity calculations

Finally, for each scenario we varied the maturity of the bonds, as indicated below. The table below summarizes the range of assumptions for the various factors that are adjusted to achieve each sensitivity analysis. The different scenarios for each factor combine for a total of twelve different sensitivity analyses.

Factors	Range of Assumptions
Final Maturity	Four scenarios: varying at 5, 10, 15 & 20 years from date of issuance
Assumed Interest Rates	Two scenarios: one at current market rates and one at approximately 100 basis points above current market rates, adjusted for weighted average maturity and potential shifts in the yield curve
Annual Revenues Available	Three scenarios: one at lowest 12-month cumulative revenues, a second at the average 12-month cumulative revenues, and a third at the highest cumulative 12-month cumulative revenues over the last 24 months
Treatment of Local Pass-Through Revenues	Two scenarios: one including all local pass-through revenues within Annual Revenues for purpose of debt capacity test, and one excluding all local pass-through revenues from the debt capacity test

See **Attachment B** for the detailed assumptions utilized in each sensitivity analysis, as the factors presented previously are varied to achieve the complete set of alternative scenarios.

It also should be noted that the current analyses, by necessity, require significant simplification as compared to the myriad of structuring nuances that would be involved in actual note sales. As a result, certain ambiguities or alternative interpretations could lead to somewhat differing results in practice. One example of a simplification common to all scenarios is the assumption that all GARVEE notes within the capacity of a given scenario would be issued in a single, initial year, not staggered over multiple years as typically would be expected in a bonding program of significant magnitude.

If, instead, such bonds were staggered and the program was assumed to have a fixed "end date" represented by the assumed final maturity used in each scenario, each resulting measure of maximum bonding capacity would have to be adjusted downward. This would be necessary because the GARVEE notes issued in subsequent years would have a shorter period during which to amortize principal before the fixed end date. This would increase the annual debt service necessary for a given par amount of notes, causing a reduction in total bonding capacity, assuming a fixed amount of annual revenues for each scenario.

Alternatively, this simplification would not have this constraint on capacity if the program were assumed to be structured on a "rolling maturity" basis, that is, with each GARVEE note issued in subsequent years within each scenario having exactly the same underlying terms, such as total years to maturity and interest rate, regardless of the timing of its issuance within the life span of the program. This latter simplification also would assume a fixed amount of annual revenues for each scenario.

This discussion is offered as an example, which is by no means exhaustive, of the implications of the necessary simplifications involved in any analysis of bonding capacity given current uncertainty about the "real life" conditions that will exist at the time of any future issuance of GARVEE notes. Therefore, care should be exercised in using these analyses, to avoid erroneous interpretations or conclusions.

Summary of Results

The analyses resulted in a slightly higher bonding capacity than last year's estimates. For example, a 5-year maturity bond issuance under current market conditions corresponds to bonding capacity ranging from $2.13 billion (low revenue) to $2.57 billion (high revenue), or $323 million and $194 million more respectively than in 2000.

The differences are more dramatic the longer the maturity of the bond. For example, a 20-year maturity bond issuance under current market conditions corresponds to bonding capacity ranging from $5.83 billion (low revenue) to $7.47 billion (high revenue), or $1.21 billion and $1.02 billion more respectively than in 2000.

The increase in estimated capacity is due to two factors:

1. Higher federal deposits in the State Highway Account during the analysis period (January 1999 through December 2000) and
2. Lower interest rates

The average monthly deposits into the State Highway Account during the analysis period are higher than one year ago. For example, the average monthly deposit from January 1999 through December 2000 was $140 million, or $2.4 million more than from January 1998 through December 1999. The average 12-month rolling average in the current report is $1.78 billion, or $126 million more than in 2000.

The last 12 months has seen a decrease in municipal market interest rates. The weighted average interest rate used in last year's report for a 5-year bond was 5.11%. The equivalent rate in the current report is 3.77%, or 1.34 percentage points less.

The following table summarizes key results of our analyses. Detailed worksheets supporting the results can be found in **Attachment C** for ease of reference. Additional details are available from the STO upon request.

Summary of Results for GARVEE Bonding Capacity Sensitivity Analyses		
Scenario	**I. Base Case Current Conditions**	**II. Market Sensitivity Case Alternative Conditions**
1-A: Low Revenue, Include Local Pass-Through Revenues		
5 year maturity	$2.19 billion	$2.13 billion
10 year maturity	$3.95 billion	$3.76 billion
15 year maturity	$5.31 billion	$4.96 billion
20 year maturity	$6.35 billion	$5.83 billion
1-B: Low Revenue, Exclude Local Pass-Through Revenues		
5 year maturity	$1.67 billion	$1.62 billion
10 year maturity	$3.00 billion	$2.86 billion
15 year maturity	$4.04 billion	$3.77 billion
20 year maturity	$4.82 billion	$4.43 billion
2-A: Avg. Revenue, Include Local Pass-Through Revenues		
5 year maturity	$2.40 billion	$2.33 billion
10 year maturity	$4.33 billion	$4.13 billion
15 year maturity	$5.83 billion	$5.45 billion
20 year maturity	$6.97 billion	$6.40 billion
2-B: Avg. Revenue, Exclude Local Pass-Through Revenues		
5 year maturity	$1.82 billion	$1.77 billion
10 year maturity	$3.29 billion	$3.14 billion
15 year maturity	$4.43 billion	$4.14 billion
20 year maturity	$5.29 billion	$4.86 billion
3-A: High Revenue, Include Local Pass-Through Revenues		
5 year maturity	$2.57 billion	$2.50 billion
10 year maturity	$4.64 billion	$4.42 billion
15 year maturity	$6.25 billion	$5.84 billion
20 year maturity	$7.47 billion	$6.86 billion
3-B: High Revenue, Exclude Local Pass-Through Revenues		
5 year maturity	$1.95 billion	$1.90 billion
10 year maturity	$3.53 billion	$3.36 billion
15 year maturity	$4.75 billion	$4.44 billion
20 year maturity	$5.68 billion	$5.21 billion

Conclusion

As the above analyses show, the ultimate capacity existing within the State's GARVEE program will depend on a wide range of circumstances over time, including market conditions, maturity structures, available revenues, and other factors that may be considered by the California Transportation Commission over the coming year.

We hope these analyses will prove useful in the consideration of future applications in light of some of the structuring options available under the GARVEE program, in addition to meeting the immediate goal of assisting the Commission in its compliance with the annual reporting requirements under current statute.

ATTACHMENT A

MONTHLY DEPOSITS TO STATE HIGHWAY ACCOUNT FROM FEDERAL FUNDS

Cumulative 12-Month Revenues

3/10/00

Period Covered		12-Mo. Total Revenues Deposited	
Jan-99	Dec-99	$1,736,340,834.92	
Feb-99	Jan-00	$1,749,427,480.91	
Mar-99	Feb-00	$1,773,895,262.70	
Apr-99	Mar-00	$1,848,058,302.71	
May-99	Apr-00	$1,872,830,399.09	
Jun-99	May-00	$1,848,889,472.45	
Jul-99	Jun-00	$1,895,412,916.31	
Aug-99	Jul-00	**$1,913,039,055.30**	**Highest 12-mo. Total**
Sep-99	Aug-00	$1,780,988,017.87	
Oct-99	Sep-00	$1,700,926,324.14	
Nov-99	Oct-00	$1,728,741,969.30	
Dec-99	Nov-00	$1,724,367,056.31	
Jan-00	Dec-00	**$1,625,942,912.07**	**Lowest 12-mo. Total**
		$1,784,527,692.62	**Average 12-mo. Total**

Federal Deposits Data

	Federal Deposits -- By Month		
	1998	1999	2000
Month	Deposit Amount	Deposit Amount	Deposit Amount
January	$ 130,503,564.82	$ 201,606,455.01	$ 214,693,101.00
February	$ 176,435,114.36	$ 70,480,828.62	$ 94,948,610.41
March	$ 109,874,874.71	$ 131,057,017.42	$ 205,220,057.43
April	$ 113,935,963.58	$ 122,732,697.83	$ 147,504,794.21
May	$ 114,713,729.27	$ 132,322,008.15	$ 108,381,081.51
June	$ 70,248,698.68	$ 121,341,118.90	$ 167,864,562.76
July	$ 105,769,641.50	$ 132,756,296.49	$ 150,382,435.48
August	$ 130,875,510.38	$ 249,424,523.43	$ 117,373,486.00
September	$ 144,608,963.35	$ 202,260,569.27	$ 122,198,875.54
October	$ 145,436,805.07	$ 122,918,370.81	$ 150,734,015.97
November	$ 110,849,601.06	$ 109,248,154.57	$ 104,873,241.58
December	$ 215,407,492.93	$ 140,192,794.42	$ 41,768,650.18
TOTAL	$ 1,568,659,959.71	$ 1,736,340,834.92	$ 1,625,942,912.07
Monthly average [1]		$137,708,366.44	$140,095,156.12

[1] For the preceeding 24 months.

ATTACHMENT B

DETAILED ASSUMPTIONS FOR SENSITIVITY ANALYSES

Summary of Assumptions for GARVEE Bonding Capacity Sensitivity Analyses

I. Base Case – Current Market Conditions

Scenarios	Factors	Assumptions	Comments
Scenario 1 (Low Rev) *** including 1-A, 1-B**	Final Maturity	5, 10, 15, 20 years	Analyses run at each final maturity listed at left
	Interest Rates	3.77%, 4.04%, 4.30% and 4.50%	Rates indicated relate to each respective final maturity above; listed rates represent average rate for each est. wt. avg. maturity in current market
	Annual Revenues	$1,625,943,000	Lowest 12 mo. cumulative total of federal funds deposited w/in last 24 mo's.
*	Treatment of Local Pass-Throughs	Scenario 1-A: Included Scenario 1-B: Excluded	Differentiates whether local pass-through revenues are included or excluded in Annual Revenues for purpose of debt service "test"
*	Debt Service "Test"	Scenario 1-A: $487,783,000 Scenario 1-B: $370,715,000	Not to exceed 30% of Annual Revenues; Scenario 1-A w/o adjustment, Scenario 1-B adjusted to net-out local pass-throughs
Scenario 2 (Avg Rev) *** including 2-A, 2-B**	Final Maturity	5, 10, 15, 20 years	Analyses run at each final maturity listed at left
	Interest Rates	3.77%, 4.04%, 4.30% and 4.50%	Rates indicated relate to each respective final maturity above; listed rates represent average rate for each est. wt. avg. maturity in current market
	Annual Revenues	$1,784,528,000	Average 12 mo. cumulative total of federal funds deposited w/in last 24 mo's.
*	Treatment of Local Pass-Throughs	Scenario 2-A: Included Scenario 2-B: Excluded	Differentiates whether local pass-through revenues are included or excluded in Annual Revenues for purpose of debt service "test"
*	Debt Service "Test"	Scenario 2-A: $535,358,000 Scenario 2-B: $406,872,000	Not to exceed 30% of Annual Revenues; Scenario 2-A w/o adjustment, Scenario 2-B adjusted to net-out local pass-throughs

Summary of Assumptions for GARVEE Bonding Capacity Sensitivity Analyses

I. Base Case – Current Market Conditions

Scenarios	Factors	Assumptions	Comments
Scenario 3 (Hi Rev) * including 3-A, 3-B	Final Maturity	5, 10, 15, 20 years	Analyses run at each final maturity listed at left
	Interest Rates	3.77%, 4.04%, 4.30% and 4.50%	Rates indicated relate to each respective final maturity above; listed rates represent average rate for each est. wt. avg. maturity in current market
	Annual Revenues	$1,913,039,000	Average 12 mo. cumulative total of federal funds deposited w/in last 24 mo's.
*	Treatment of Local Pass-Throughs	Scenario 3-A: Included Scenario 3-B: Excluded	Differentiates whether local pass-through revenues are included or excluded in Annual Revenues for purpose of debt service "test"
*	Debt Service "Test"	Scenario 3-A: $573,912,000 Scenario 3-B: $436,173,000	Not to exceed 30% of Annual Revenues; Scenario 3-A w/o adjustment, Scenario 3-B adjusted to net-out local pass-throughs

Summary of Assumptions for GARVEE Bonding Capacity Sensitivity Analyses			
II. Market Sensitivity Case – Alternative Market Conditions			
Scenarios	**Factors**	**Assumptions**	**Comments**
Scenario 1 (Low Rev) *** including 1-A, 1-B**	Final Maturity	5, 10, 15, 20 years	Analyses run at each final maturity listed at left
	Interest Rates	4.77%, 5.04%, 5.30% and 5.50%	Rates indicated relate to each respective final maturity above; listed rates represent average rate for each est. wt. avg. maturity in alternative market
	Annual Revenues	$1,625,943,000	Lowest 12 mo. cumulative total of federal funds deposited w/in last 24 mo's.
*	Treatment of Local Pass-Throughs	Scenario 1-A: Included Scenario 1-B: Excluded	Differentiates whether local pass-through revenues are included or excluded in Annual Revenues for purpose of debt service "test"
*	Debt Service "Test"	Scenario 1-A: $487,783,000 Scenario 1-B: $370,715,000	Not to exceed 30% of Annual Revenues; Scenario 1-A w/o adjustment, Scenario 1-B adjusted to net-out local pass-throughs
Scenario 2 (Avg Rev) *** including 2-A, 2-B**	Final Maturity	5, 10, 15, 20 years	Analyses run at each final maturity listed at left
	Interest Rates	4.77%, 5.04%, 5.30% and 5.50%	Rates indicated relate to each respective final maturity above; listed rates represent average rate for each est. wt. avg. maturity in alternative market
	Annual Revenues	$1,784,528,000	Average 12 mo. cumulative total of federal funds deposited w/in last 24 mo's.
*	Treatment of Local Pass-Throughs	Scenario 2-A: Included Scenario 2-B: Excluded	Differentiates whether local pass-through revenues are included or excluded in Annual Revenues for purpose of debt service "test"
*	Debt Service "Test"	Scenario 2-A: $535,358,000 Scenario 2-B: $406,872,000	Not to exceed 30% of Annual Revenues; Scenario 2-A w/o adjustment, Scenario 2-B adjusted to net-out local pass-throughs

Summary of Assumptions for GARVEE Bonding Capacity Sensitivity Analyses			
II. Market Sensitivity Case – Alternative Market Conditions			
Scenarios	**Factors**	**Assumptions**	**Comments**
Scenario 3 (Hi Rev) *** including 3-A, 3-B**	Final Maturity	5, 10, 15, 20 years	Analyses run at each final maturity listed at left
	Interest Rates	4.77%, 5.04%, 5.30% and 5.50%	Rates indicated relate to each respective final maturity above; listed rates represent average rate for each est. wt. avg. maturity in alternative market
	Annual Revenues	$1,913,039,000	Average 12 mo. cumulative total of federal funds deposited w/in last 24 mo's.
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*	Debt Service "Test"	Scenario 3-A: $573,912,000 Scenario 3-B: $436,173,000	Not to exceed 30% of Annual Revenues; Scenario 3-A w/o adjustment, Scenario 3-B adjusted to net-out local pass-throughs

ATTACHMENT C

DETAILED WORKSHEETS FOR SENSITIVITY ANALYSES

OVERVIEW OF GARVEE BONDING CAPACITY ANALYSES

($ in 000's)

	Low Revenue		Average Revenue		High Revenue	
Base Case	I-1A	I-1B	I-2A	I-2B	I-3A	I-3B
Maximum Par Amount	$2,185,378.83	$1,660,887.90	$2,398,526.15	$1,822,879.52	$2,571,256.88	$1,954,154.69
Interest rate	3.77%	3.77%	3.77%	3.77%	3.77%	3.77%
Annual Debt Service *	(487,782.90)	(370,715.00)	(535,358.00)	(406,872.00)	(573,912.00)	(436,173.00)
Term	5	5	5	5	5	5
Market Sensitivity	II-1A	II-1B	II-2A	II-2B	II-3A	II-3B
Maximum Par Amount	$2,125,103.52	$1,615,078.66	$2,332,371.98	$1,772,602.36	$2,500,338.59	$1,900,256.81
Interest rate	4.77%	4.77%	4.77%	4.77%	4.77%	4.77%
Annual Debt Service *	(487,782.90)	(370,715.00)	(535,358.00)	(406,872.00)	(573,912.00)	(436,173.00)
Term	5	5	5	5	5	5
Base Case	I-1A	I-1B	I-2A	I-2B	I-3A	I-3B
Maximum Par Amount	$3,947,704.54	$3,000,255.42	$4,332,737.39	$3,292,879.77	$4,644,761.04	$3,530,017.42
Interest rate	4.04%	4.04%	4.04%	4.04%	4.04%	4.04%
Annual Debt Service *	(487,782.90)	(370,715.00)	(535,358.00)	(406,872.00)	(573,912.00)	(436,173.00)
Term	10	10	10	10	10	10
Market Sensitivity	II-1A	II-1B	II-2A	II-2B	II-3A	II-3B
Maximum Par Amount	$3,758,495.05	$2,856,456.21	$4,125,073.66	$3,135,055.37	$4,422,142.33	$3,360,827.25
Interest rate	5.04%	5.04%	5.04%	5.04%	5.04%	5.04%
Annual Debt Service *	(487,782.90)	(370,715.00)	(535,358.00)	(406,872.00)	(573,912.00)	(436,173.00)
Term	10	10	10	10	10	10
Base Case	I-1A	I-1B	I-2A	I-2B	I-3A	I-3B
Maximum Par Amount	$5,312,812.57	$4,037,737.51	$5,830,988.97	$4,431,550.75	$6,250,909.75	$4,750,690.10
Interest rate	4.30%	4.30%	4.30%	4.30%	4.30%	4.30%
Annual Debt Service *	(487,782.90)	(370,715.00)	(535,358.00)	(406,872.00)	(573,912.00)	(436,173.00)
Term	15	15	15	15	15	15
Market Sensitivity	II-1A	II-1B	II-2A	II-2B	II-3A	II-3B
Maximum Par Amount	$4,963,223.89	$3,772,050.12	$5,447,303.74	$4,139,950.03	$5,839,593.29	$4,438,089.68
Interest rate	5.30%	5.30%	5.30%	5.30%	5.30%	5.30%
Annual Debt Service *	(487,782.90)	(370,715.00)	(535,358.00)	(406,872.00)	(573,912.00)	(436,173.00)
Term	15	15	15	15	15	15
Base Case	I-1A	I-1B	I-2A	I-2B	I-3A	I-3B
Maximum Par Amount	$6,347,248.76	$4,823,909.01	$6,966,317.19	$5,294,400.02	$7,467,999.04	$5,675,677.71
Interest rate	4.50%	4.50%	4.50%	4.50%	4.50%	4.50%
Annual Debt Service *	(487,782.90)	(370,715.00)	(535,358.00)	(406,872.00)	(573,912.00)	(436,173.00)
Term	20	20	20	20	20	20
Market Sensitivity	II-1A	II-1B	II-2A	II-2B	II-3A	II-3B
Maximum Par Amount	$5,831,127.23	$4,431,656.64	$6,399,856.59	$4,863,890.06	$6,860,744.58	$5,214,164.45
Interest rate	5.50%	5.50%	5.50%	5.50%	5.50%	5.50%
Annual Debt Service *	(487,782.90)	(370,715.00)	(535,358.00)	(406,872.00)	(573,912.00)	(436,173.00)
Term	20	20	20	20	20	20

* Annual Debt Service constrained to equal Available Annual Revenues. Source: California Department of Transportation.

(white / non-shaded)	= Base Case Scenarios
(yellow / shaded)	= Market Sensitivity Case Scenarios

GARVEE BONDING CAPACITY

Base Case, I - 1A (Included)

Low Revenue ($ in 000's)	$1,625,943
Debt Service Test (30% of Low Revenue)	$487,783

(Dollars In Thousands)

	5 Years	10 Years	15 Years	20 Years
Assumed Date of Issuance	2002	2002	2002	2002
Assumed Final Maturity	2007	2012	2017	2022
Assumed Interest Rate[1]	3.77%	4.04%	4.30%	4.50%
Par Capacity	$2,185,379	$3,947,705	$5,312,813	$6,347,249
Annual Debt Service Required	$487,783	$487,783	$487,783	$487,783

Base Case, I - 1B (Excluded)

Low Revenue ($ in 000's)	$1,625,943
State Portion of Revenues (76%)	$1,235,717
Debt Service Test (30% State Portion)	$370,715

(Dollars In Thousands)

	5 Years	10 Years	15 Years	20 Years
Assumed Date of Issuance	2002	2002	2002	2002
Assumed Final Maturity	2007	2012	2017	2022
Assumed Interest Rate[1]	3.77%	4.04%	4.30%	4.50%
Par Amount	$1,660,888	$3,000,255	$4,037,738	$4,823,909
Annual Debt Service Required	$370,715	$370,715	$370,715	$370,715

(1) The assumed interest rate is based on a March 9, 2001, generic AA-rated State of California general obligation bond scale. The rate used is the weighted average for all the maturities in each scenario. It assumes a level principle amortization.

Base Case, I - 2A (Included)

Average Revenue ($ in 000's) $1,784,528
Debt Service Test (30% of Average Revenue) $535,358

(Dollars in Thousands)

	5 Years	10 Years	15 Years	20 Years
Assumed Date of Issuance	2002	2002	2002	2002
Assumed Final Maturity	2007	2012	2017	2022
Assumed Interest Rate[1]	3.77%	4.04%	4.30%	4.50%
Par Amount	$2,398,526	$4,332,737	$5,830,989	$6,966,317
Annual Debt Service Required	$535,358	$535,358	$535,358	$535,358

Base Case, I - 2B (Excluded)

Average Revenue ($ in 000's) $1,784,528
State Portion of Revenues (76%) $1,356,241
Debt Service Test (30% of State Portion) $406,872

(Dollars in Thousands)

	5 Years	10 Years	15 Years	20 Years
Assumed Date of Issuance	2002	2002	2002	2002
Assumed Final Maturity	2007	2012	2017	2022
Assumed Interest Rate[1]	3.77%	4.04%	4.30%	4.50%
Par Amount	$1,822,880	$3,292,880	$4,431,551	$5,294,400
Annual Debt Service Required	$406,872	$406,872	$406,872	$406,872

(1) The assumed interest rate is based on a March 9 2001, generic AA-rated State of California general obligation bond scale. The rate used is the weighted average for all the maturities in each scenario. It assumes a level principle amortization.

Base Case, I - 3A (Included)

High Revenue ($ in 000's)	**$1,913,039**
Debt Service Test (30% of High Revenue)	**$573,912**

(Dollars in Thousands)

	5 Years	10 Years	15 Years	20 Years
Assumed Date of Issuance	2002	2002	2002	2002
Assumed Final Maturity	2007	2012	2017	2022
Assumed Interest Rate[1]	3.77%	4.04%	4.30%	4.50%
Par Amount	**$2,571,257**	**$4,644,761**	**$6,250,910**	**$7,467,999**
Annual Debt Service Required	**$573,912**	**$573,912**	**$573,912**	**$573,912**

Base Case, I - 3B (Excluded)

High Revenue ($ in 000's)	**$1,913,039**
State Portion of Revenues (76%)	**$1,453,910**
Debt Service Test (30% of State Portion)	**$436,173**

(Dollars in Thousands)

	5 Years	10 Years	15 Years	20 Years
Assumed Date of Issuance	2002	2002	2002	2002
Assumed Final Maturity	2007	2012	2017	2022
Assumed Interest Rate[1]	3.77%	4.04%	4.30%	4.50%
Par Amount	**$1,954,155**	**$3,530,017**	**$4,750,690**	**$5,675,678**
Annual Debt Service Required	**$436,173**	**$436,173**	**$436,173**	**$436,173**

(1) The assumed interest rate is based on a March 9, 2001, generic AA-rated State of California general obligation bond scale. The rate used is the weighted average for all the maturities in each scenario. It assumes a level principle amortization.

Market Sensitivity Case, II - 1A (Included)

Low Revenue ($ in 000's)	$1,625,943
Debt Service Test (30% of Low Revenue)	$487,783

(Dollars in Thousands)

	5 Years	10 Years	15 Years	20 Years
Assumed Date of Issuance	2002	2002	2002	2002
Assumed Final Maturity	2007	2012	2017	2022
Assumed Interest Rate (1)	6.11%	4.04%	4.30%	4.50%
Par Amount	$2,125,104	$3,758,495	$4,963,224	$5,831,127
Annual Debt Service Required	$487,783	$487,783	$487,783	$487,783

Market Sensitivity Case, II - 1B (Excluded)

Low Revenue ($ in 000's)	$1,625,943
State Portion of Revenues (76%)	$1,235,717
Debt Service Test (30% of State Portion)	$370,715

(Dollars in Thousands)

	5 Years	10 Years	15 Years	20 Years
Assumed Date of Issuance	2002	2002	2002	2002
Assumed Final Maturity	2007	2012	2017	2022
Assumed Interest Rate (2)	4.77%	5.04%	5.30%	5.50%
Par Amount	$1,615,079	$2,856,456	$3,772,050	$4,431,657
Annual Debt Service Required	$370,715	$370,715	$370,715	$370,715

(1) The assumed interest rates are based on a March 12, 2001, generic AA-rated State of California general obligation bond scale. The rate used is the weighted average for all the maturities in each scenario. It assumes a level principle amortization.

(2) The assumed interest rates were increased by 100 baisis points (1%) for market fluctuations.

Market Sensitivity Case, II - 2A (Included)

Average Revenue ($ in 000's)	$1,784,528
Debt Service Test (30% of Average Revenue)	$535,358

(Dollars in Thousands)

	5 Years	10 Years	15 Years	20 Years
Assumed Date of Issuance	2002	2002	2002	2002
Assumed Final Maturity	2007	2012	2017	2022
Assumed Interest Rate(1)	4.77%	5.04%	5.30%	5.50%
Par Amount	$2,332,372	$4,125,074	$5,447,304	$6,399,857
Annual Debt Service Required	$535,358	$535,358	$535,358	$535,358

Market Sensitivity Case, II - 2B (Excluded)

Average Revenue ($ in 000's)	$1,784,528
State Portion of Revenues (76%)	$1,356,241
Debt Service Test (30% of State Portion)	$406,872

(Dollars in Thousands)

	5 Years	10 Years	15 Years	20 Years
Assumed Date of Issuance	2002	2002	2002	2002
Assumed Final Maturity	2007	2012	2017	2022
Assumed Interest Rate(1)	4.77%	5.04%	5.30%	5.50%
Par Amount	$1,772,602	$3,135,055	$4,139,950	$4,863,890
Annual Debt Service Required	$406,872	$406,872	$406,872	$406,872

(1) The assumed interest rates are based on a March 12, 2001, generic AA-rated State of California general obligation bond scale (increased by 100 basis points (1%) for market fluctuations). The rate used is the weighted average for all the maturities in each scenario. It assumes a level principle amortization.

Market Sensitivity Case, II - 3A (Included)

High Revenue ($ in 000's)	$1,913,039
Annual Debt Service Capacity (30% of High Revenue)	$573,912

(Dollars in Thousands)

	5 Years	10 Years	15 Years	20 Years
Assumed Date of Issuance	2002	2002	2002	2002
Assumed Final Maturity	2007	2012	2017	2022
Assumed Interest Rate[1]	4.77%	5.04%	5.30%	5.50%
Par Amount	$2,500,339	$4,422,142	$5,839,593	$6,860,745
Annual Debt Service Required	$573,912	$573,912	$573,912	$573,912

Market Sensitivity Case, II - 3B (Excluded)

High Revenue ($ in 000's)	$1,913,039
State Portion of Revenues (76%)	$1,453,910
Debt Service Test (30% of State Portion)	$436,173

(Dollars in Thousands)

	5 Years	10 Years	15 Years	20 Years
Assumed Date of Issuance	2002	2002	2002	2002
Assumed Final Maturity	2007	2012	2017	2022
Assumed Interest Rate[1]	4.77%	5.04%	5.30%	5.50%
Par Amount	$1,900,257	$3,360,827	$4,438,090	$5,214,164
Annual Debt Service Required	$436,173	$436,173	$436,173	$436,173

(1) The assumed interest rates are based on a March 9, 2001, generic AA-rated State of California general obligation bond scale (increased by 100 basis points (1%) for market fluctuations). The rate used is the weighted average for all the maturities in each scenario. It assumes a level principle amortization.