

**GARVEE Bonds: An Overview and Review of
Their Feasibility for Vermont**

State Treasurer's Office

March 2004

Vermont's Highway Infrastructure is in Need of Capital Inflow

- **Sustained financial commitment is necessary to provide for the long-term care of Vermont's highways.**
 - **Pavement Resurfacing**
 - **Replacement or rehabilitation of older bridges**
 - **Expansion of highway capacity to relieve congestion**
 - **Roadway improvements**
- **Vermont's transportation needs clearly exceed the ability of the state's traditional pay-as-you-go funding methods to support highway projects.**

Alternative Pavement Investment Scenarios

Investment Scenario	Network Level	Funding (Per Year)	Percent Length in "Very Poor" Condition	
			Baseline	Projected 2011
High (\$109 million/year)	Interstate	\$14 million	1%	0%
	Non-Interstate Primary	\$35 million	7%	5%
	Off-Primary	\$60 million	23%	21%
Medium (\$93 million/year)	Interstate	\$13 million	1%	3%
	Non-Interstate Primary	\$30 million	7%	7%
	Off-Primary	\$50 million	23%	30%
Low (\$63 million)	Interstate	\$13 million	1%	3%
	Non-Interstate Primary	\$20 million	7%	12%
	Off-Primary	\$30 million	23%	55%
Current (\$40 million)	Interstate	\$10 million	1%	10%
	Non-Interstate Primary	\$15 million	7%	25%
	Off-Primary	\$15 million	23%	76%

Source: State of Vermont, VTrans, "Investment Analysis of Vermont's Highway System," February 17, 2004

Alternative Bridge Investment Scenarios

Investment Scenario	Network Level	Funding (Per Year)	Average Health Index	Number Structurally Deficient	Percentage Structurally Deficient
High (\$70 million/year)	Interstate	\$40 million	90	8	3%
	Non-Interstate Primary	\$10 million	89	11	6%
	Off-Primary	\$20 million	89	77	14%
Medium (\$59 million/year)	Interstate	\$40 million	90	8	3%
	Non-Interstate Primary	\$7 million	88	27	14%
	Off-Primary	\$12 million	84	116	22%
Low(\$37 million)	Interstate	\$20 million	88	16	5%
	Non-Interstate Primary	\$5 million	87	24	13%
	Off-Primary	\$12 million	84	116	22%
Current (\$18 million)	Interstate	\$6 million	85	27	9%
	Non-Interstate Primary	\$6 million	87	22	12%
	Off-Primary	\$60 million	83	150	28%

Source: State of Vermont, VTrans, "Investment Analysis of Vermont's Highway System," February 17, 2004

**Amount needed to maintain current conditions
for bridges and paving by FY 2011:**

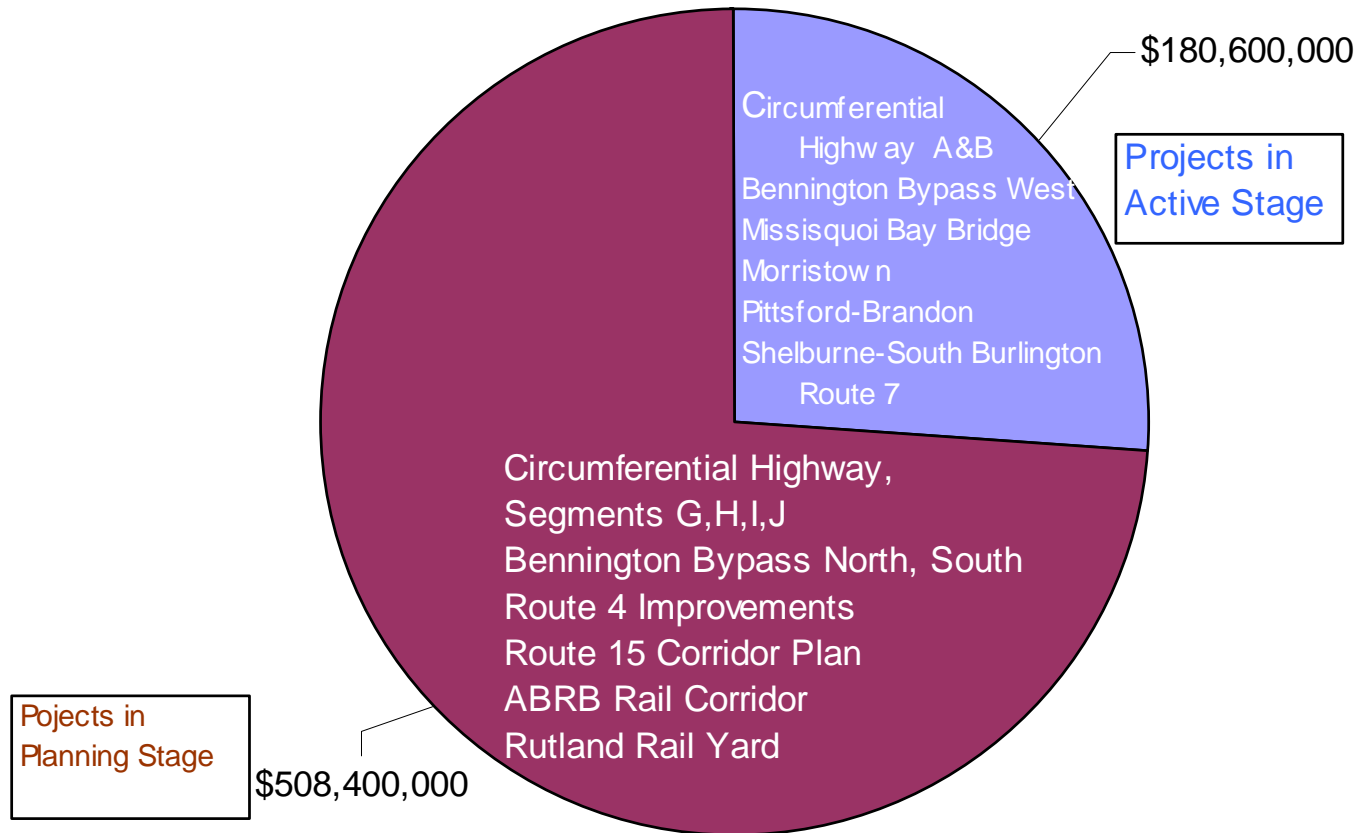
\$152 Million Per Year

Current level of funding:

\$58 million

**At the same time, these critical needs are being
“squeezed” by large capital projects
(equally important to Vermont’s economic future).**

Largest Vermont Transportation Projects, Projected Remaining Costs as of July 1, 2004



Note: \$689 million remaining in costs for large dollar projects in planning or active stage in FY04
 Source: JFO, updated data March 2004

What Are GARVEEs?

- For many years, states, municipalities, and authorities have raised funds by issuing grant anticipation notes (GANs), which allow governmental entities to fund projects based on anticipated future revenues. GARVEEs (Grant Anticipation Revenue Vehicles) employ federal highway funds in the same way -- to repay the debt for road and transit projects.
- A GARVEE is a debt-financing instrument that permits the pledge of future federal highway funds to repay investors. A state may use future obligations of federal-aid funds to reimburse the retirement of principal and payment of interest, issuance, insurance, and associated other costs for the sale of an eligible debt-financing instrument.

What Are GARVEEs?

- GARVEE bonds are loans pledged with a portion of future federal funds, sometimes backed by dedication of a portion of state fuel taxes.
- Their value is in greatly speeding up major projects. New Hampshire, Rhode Island, Mexico, Ohio, Massachusetts, Virginia, and many other states are actively using this option.

How Are GARVEEs Regarded in the Bond Community?

- The Federal Highway Administration views GARVEE bonds as a safe approach for states, since federal funding for roads and bridges traditionally increases year to year.
- Investors see GARVEE bonds the same way, resulting in lower interest rates.

Types of GARVEEs

Naked GARVEE - stands alone entirely on the future federal-aid reimbursement, not on the state's or any other entity's revenues or credit

Insured GARVEE - bond insurance has been purchased as a credit enhancement to make the bonds more marketable

Backstopped GARVEE - pledges another revenue source, such as the state's motor fuel tax, to enhance creditworthiness

Can be Direct or Indirect

GARVEE Bonds

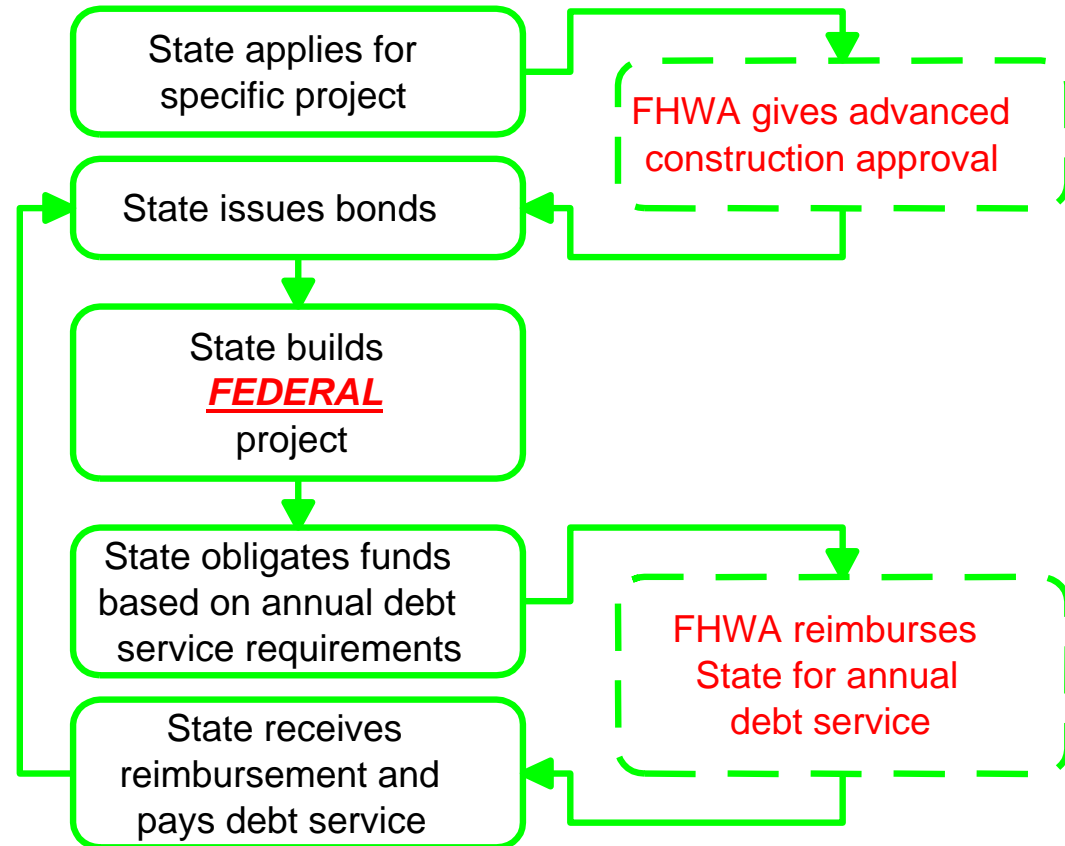
Can Be Issued One of Two Ways:

- **Direct GARVEE** bonds, in which Federal assistance directly reimburses debt service paid to investors.
- **Indirect GARVEE**, in which Federal funds reimburse expenditures on other Federal-aid projects and the State subsequently uses a portion of those funds to pay debt service on the debt-financed project. The debt-financed project does not need to be a Federal-aid project.

Direct GARVEEs

- Used to finance a specific project or projects
- State submits the debt service schedule for approval (this is called “programming”)
- All proceeds need to be spent on the specific project or projects that were approved, leaving no spending discretion or flexibility
- State submits for reimbursement before each principal/interest payment, and State receives a reimbursement (three days) before the payment is actually made

DIRECT GARVEEs



GARVEE Debt Issuance Process:

- Identify federal-aid eligible project(s) on the State Transportation Improvement Program (STIP) to be financed.
 - A GARVEE project is authorized in the same manner as any federal-aid project, except the state elects to seek payments for bond issuance costs (principal, interest, and related items) rather than construction invoice costs.
- Get approval for advance construction from FHWA division office, preserving the project's eligibility for future federal-aid assistance.
- Select method of matching – either up-front match based on state share of project cost, or match of each debt service payment over time. For the state portion, states also may choose to issue separate bonds, repaid solely with state funds.
- Issue debt and begin construction, following all relevant federal-aid requirements.
- Apply for partial conversion of advance construction as debt service comes due.
- FHWA division obligates funds for debt service and funds are wired directly to designated trustee.

How Does the State Back the GARVEE?

- When the GARVEE is issued, the main form of security backing this debt-financing instrument is the state's obligation of future federal-aid apportionments. The state would designate an Advance Construction (AC) amount up-front, and subsequently obligate funds in each succeeding year in order to partially convert the designated AC amount. Each year, the issuer (state, state infrastructure bank, or other agency) would pay periodic debt service by receiving payments from FHWA for the Federal share of the expenditure.
- States may elect to pledge other sources of revenue in the event that future federal-aid highway funds are not available. This is called a “backstop” for the bonds.

How is a Project Designated for GARVEE Financing?

- Once a project is selected for GARVEE financing and its costs are estimated, the project must be approved as an Advance Construction (AC) project by the FHWA.
- The AC designation preserves the project's future eligibility for Federal assistance. The amount of the AC designation should coincide with the Federal share (typically 80 percent) of the debt-related costs anticipated to be reimbursed during the life of the bonds. An up-front match, based on the State's share (typically 20 percent), is required.

GARVEE Bonds vs. “Pay-as-You-Go”

- Until the late 1990s, most FHWA state aid took the form of reimbursing states on a "pay-as-you-go" basis for the federal share (generally 80 percent) of construction costs.
 - State draws down obligated federal funds as monthly contractor invoice payments were presented during the construction period.
 - State meets the typical 20 percent matching requirement from their state highway fund.
 - As project sizes have grown, states have found it increasingly difficult to fund major capital investments using this method without displacing their smaller, ongoing improvement projects.
- Using bonds rather than a pay-as-you-go method, the interstate system will be under construction during a shorter period of time. Vermonters would be able to derive benefit from tax dollars sooner.
- Debt service on the bonds would not outlive the improvements.
- The bonds would be completely paid off long before the state would have to reconstruct those roads.
- Cash flow for state share would be tied to bond repayment, effectively increasing time frame and easing cash needs in the short-term.

Advantages of GARVEEs

- **Accelerated project delivery** - GARVEE funding allows states to accumulate capital funding for a construction project in a lump sum rather than having to build up funding obligation over a great many years.
- **Better funds management** - There is the ability to “bundle” projects rather than funding individual construction projects and therefore stringing them out over many years.
- **Reduced inflation of construction costs** - *Depending on the interest and economic climate*, project acceleration can yield net savings, even after interest and other financing costs.
- **Reallocating costs** now will prevent further degradation of infrastructure.
- **Economic development benefits** - There may be economic, safety, and environmental benefits resulting from expedited completion of infrastructure projects.
- **Reduced Use of GO Bonds** - A state may be unwilling or unable to support a particular issue with its full faith and credit, as required with highly rated General Obligation (GO) bonds.

GARVEE Issues to be Considered

- Are there specific projects that would benefit from the use of GARVEEs?
- How will GARVEE issuance affect Vermont's current highly favorable bond rating?
- Will rating agencies include GARVEE debt in their calculation of net tax-supported debt? How will this impact the State's long-term debt strategy.
- Are GARVEEs cost-effective for the projects in the current economic climate?

Considerations for GARVEES

Are there specific projects that would benefit from the use of GARVEEs?

- Preliminary review suggest several large projects that could be eligible, freeing up funds for maintenance. Additional review of specific projects, time lines, and underlying cash flows is needed.

All figures current \$ millions Project	Remaining Cost*	
	Active Projects	Planning stage
Circumferential Highway		
Segments A&B	46.8	
Segments GH		41.5
Segments I,J		23.1
Total		64.6
Bennington Bypass		
North		99.4
South		45.7
West	7.6	
Total		145.1
Shelburne-South Burlington Route 7	26.8	
Missisquoi Bay Bridge	22.5	
Morristown	13.3	
Pittsford-Brandon	51.1	
Cabot-Danville	10.9	
Champlain Parkway	19.6	
Route 4 Improvements		94.6
Route 15 Corridor Plan		22.0
ABRB Rail Corridor		49.0
Burlington Rail Yard		74.0
Rutland Rail Yard		59.0
Total	198.6	508.4

*Remaining cost = total estimated cost to complete minus total budgeted expenditures through June 2004 minus the unexpended balance of as of June 2004 of any existing federal earmarks.

Considerations for GARVEES

How will GARVEE issuance affect Vermont's current highly favorable bond rating?

- Preliminary indications are that, in absence of other negative factors (budgetary, revenue, pension funding, etc.), GARVEE issuance is unlikely to result in a rating reduction.

Considerations for GARVEES

Will rating agencies include GARVEE debt in their calculation of net tax-supported debt? How will this impact the State's long-term debt strategy?

- Preliminary indications are that this will be added to the State's debt calculations in two of the three major credit rating agencies. A third agency will generally exclude GARVEE issuance from net tax-supported debt calculations if the GARVEE is not backed by state resources. In such cases, the issuance of GARVEE bonds would, however, be disclosed in rating summaries provided by the rating agency.

Considerations for GARVEES

Are GARVEEs cost-effective for the projects in the current economic climate?

The analyses included in this presentation are hypothetical models for illustrative purposes.

- Prior to any final analysis of projected cost/savings additional, research will be required.
- Factors affecting analyses include:
 - Length of time it would take to complete projects without acceleration of funding through GARVEES;
 - Interest rate on re-invested bond proceeds;
 - Actual interest rate on bonds;
 - Rate of inflation for construction costs.

Assumptions Used in Hypothetical Models

- Interest Rate for Reinvested Bond Proceeds:
 - 1.67%
 - Source: average two-year treasury rate as of end of February 2004.
- Inflation Rate:
 - 3%
 - Source: McGraw-Hill Index, Heavy Construction Inflation Rate
- Bond Maturities: Both 8 and 12-year maturities for bonds are simulated. Bonds are presumed issued in \$50 million increments in 2005 and 2008.
- Various models herein assume 8 and 10-year cycles to complete projects in the absence of GARVEE bonds.

Scenarios Tested

- **Scenario 1**: No Debt Issued. Assumes normal distribution of funds, incremental increase in second round of six-year funding. THIS IS THE BENCHMARK FOR COMPARATIVE PURPOSES.
- **Scenario 2**: Issue GARVEE bonds in two issues of \$50 million each, 12-year maturities.
 - 2A: assumes it would take eight years to complete project in absence of GARVEES
 - 2B: assumes it would take ten years to complete project in absence of GARVEES
- **Scenario 3**: Issue GARVEE bonds in two issues of \$50 million, 8-year maturities (less debt service costs).
 - 3A: assumes it would take eight years to complete project in absence of GARVEES
 - 3B: assumes it would take ten years to complete project in absence of GARVEES

Assumed Interest Rates on GARVEE Bonds

- 12-Year Bonds: Assumes true interest cost (TIC) of 3.028% and 3.247% for bonds (based on market conditions as of 2/25/04).
- 8-Year Bonds: Assumes true interest cost (TIC) of 2.452% and 2.649% for bonds (based on market conditions as of 2/25/04).

The Benchmark:

Scenario 1 - No Debt Issued

Year	Federal Funds
2004	\$101,000,000
2005	101,000,000
2006	101,000,000
2007	101,000,000
2008	101,000,000
2009	101,000,000
2010	101,000,000
2011	106,000,000
2012	106,000,000
2013	106,000,000
2014	106,000,000
2015	106,000,000
2016	106,000,000
2017	106,000,000
2018	106,000,000
2019	106,000,000
2020	106,000,000
Total	\$1,767,000,000

This is a hypothetical benchmark and there is no assumption made as to Vermont's federal transportation aid reimbursement

Summary of Test Models:

		Total Funds Net For Cash Flow			
Year	Federal Funds (Scenario 1 Benchmark)	Scenario 2A	Scenario 2B	Scenario 3A	Scenario 3B
2004	\$101,000,000	\$101,000,000	\$101,000,000	\$101,000,000	\$101,000,000
2005	101,000,000	151,000,000	151,000,000	151,000,000	151,000,000
2006	101,000,000	96,769,204	96,743,141	94,819,019	94,792,957
2007	101,000,000	96,842,513	96,748,323	94,887,189	94,792,998
2008	101,000,000	146,900,071	146,739,693	144,950,075	144,789,696
2009	101,000,000	93,720,911	93,496,186	91,199,941	90,975,216
2010	101,000,000	93,760,864	93,473,798	91,245,703	90,958,637
2011	106,000,000	98,791,489	98,443,897	96,277,070	95,929,479
2012	106,000,000	98,922,933	98,516,540	96,403,771	95,997,378
2013	106,000,000	99,213,078	98,749,518	96,695,012	96,231,453
2014	106,000,000	97,476,127	98,978,233	94,960,057	96,462,163
2015	106,000,000	96,838,668	99,201,124	94,321,716	96,684,172
2016	106,000,000	96,840,967	97,465,422	94,320,416	94,944,871
2017	106,000,000	96,840,025	96,840,025	106,000,000	106,000,000
2018	106,000,000	96,839,879	96,839,879	106,000,000	106,000,000
2019	106,000,000	96,841,204	96,841,204	106,000,000	106,000,000
2020	106,000,000	96,839,872	96,839,872	106,000,000	106,000,000
Total	\$1,767,000,000	\$1,755,437,804	\$1,757,916,854	\$1,766,079,969	\$1,768,559,019
Variance		\$11,562,196	\$9,083,146	\$920,031	-\$1,559,019

Depending on scenario utilized, use of GARVEES could cost (after factoring in debt service, inflation, and investment of bond proceeds) \$11,562,196 over a 16-year period, or save \$1,599,019 with a range of potential scenarios close to zero fiscal impact. Economic gains from improved highways are not included in the analysis.

Scenario 2: \$100 Million in Debt Over 12 Years

- Assumes two issues of \$50 million each
 - In 2005 and 2008
- Assumes true interest cost (TIC) of 3.028% and 3.247% for bonds (based on current market conditions as of 2/25/04)
- Assumes proceeds reinvested at 1.67% (current two-year treasury rate)
- Assumes that inflation for construction costs is 3% (the current McGraw-Hill Inflation Index, Heavy Construction)

Scenario 2A: Two GARVEE Bond Issues (2005, 2008), 12-Year Maturities
vs. Project Completion Over an 8-Year Period

Year	Federal Funds (Scenario 1 Benchmark)	Total Funds Net Debt Service	Add Back Investment Proceeds	Present Value Savings	Total Funds Net for Cash Flow
2004	\$101,000,000	\$101,000,000			\$101,000,000
2005	101,000,000	151,000,000			\$151,000,000
2006	101,000,000	95,905,007	730,625	133,572	\$96,769,204
2007	101,000,000	95,907,495	452,292	482,727	\$96,842,513
2008	101,000,000	145,904,175	173,958	821,938	\$146,900,071
2009	101,000,000	91,838,574	730,625	1,151,712	\$93,720,911
2010	101,000,000	91,837,360	452,292	1,471,212	\$93,760,864
2011	106,000,000	96,836,124	173,958	1,781,406	\$98,791,489
2012	106,000,000	96,840,167		2,082,767	\$98,922,933
2013	106,000,000	96,837,335		2,375,743	\$99,213,078
2014	106,000,000	96,837,586		638,541	\$97,476,127
2015	106,000,000	96,838,668			\$96,838,668
2016	106,000,000	96,840,967			\$96,840,967
2017	106,000,000	96,840,025			\$96,840,025
2018	106,000,000	96,839,879			\$96,839,879
2019	106,000,000	96,841,204			\$96,841,204
2020	106,000,000	96,839,872			\$96,839,872
Total	\$1,767,000,000	\$1,741,784,436	\$2,713,750	\$10,939,619	\$1,755,437,804
Variance		\$25,215,565			\$11,562,196

Scenario 2B: Two GARVEE Bond Issues (2005, 2008), 12-Year Maturities
vs. Project Completion Over a 10-Year Period

Year	Federal Funds (Scenario 1 Benchmark)	Total Funds Net Debt Service	Add Back Investment Proceeds	Present Value Savings	Total Funds Net for Cash Flow
2004	\$101,000,000	\$101,000,000			\$101,000,000
2005	101,000,000	151,000,000			\$151,000,000
2006	101,000,000	95,905,007	730,625	107,510	\$96,743,141
2007	101,000,000	95,907,495	452,292	388,536	\$96,748,323
2008	101,000,000	145,904,175	173,958	661,560	\$146,739,693
2009	101,000,000	91,838,574	730,625	926,988	\$93,496,186
2010	101,000,000	91,837,360	452,292	1,184,146	\$93,473,798
2011	106,000,000	96,836,124	173,958	1,433,815	\$98,443,897
2012	106,000,000	96,840,167		1,676,373	\$98,516,540
2013	106,000,000	96,837,335		1,912,183	\$98,749,518
2014	106,000,000	96,837,586		2,140,647	\$98,978,233
2015	106,000,000	96,838,668		2,362,456	\$99,201,124
2016	106,000,000	96,840,967		624,455	\$97,465,422
2017	106,000,000	96,840,025			\$96,840,025
2018	106,000,000	96,839,879			\$96,839,879
2019	106,000,000	96,841,204			\$96,841,204
2020	106,000,000	96,839,872			\$96,839,872
Total	\$1,767,000,000	\$1,741,784,436	\$2,713,750	\$13,418,669	\$1,757,916,854
Variance		\$25,215,565			\$9,083,146

Scenario 3: \$100 Million in Debt Over 8 Years

- Assumes two issues of \$50 million each
 - In 2005 and 2008
- Assumes true interest cost (TIC) of 2.452% and 2.649% for bonds (based on current market conditions as of 2/25/04)
- Assumes proceeds reinvested at 1.67% (current two-year treasury rate)
- Assumes that inflation for construction costs is 3% (the current McGraw-Hill Inflation Index, Heavy Construction)

Scenario 3A: Two GARVEE Bond Issues (2005, 2008), 8-Year Maturities
vs. Project Completion Over an 8-Year Period

Year	Federal Funds (Scenario 1 Benchmark)	Total Funds Net Debt Service	Add Back Investment Proceeds	Present Value Savings	Total Funds Net for Cash Flow
2004	\$101,000,000	\$101,000,000			\$101,000,000
2005	101,000,000	\$151,000,000			\$151,000,000
2006	101,000,000	\$93,954,822	730,625	133,572	\$94,819,019
2007	101,000,000	\$93,952,170	452,292	482,727	\$94,887,189
2008	101,000,000	\$143,954,178	173,958	821,938	\$144,950,075
2009	101,000,000	\$89,317,604	730,625	1,151,712	\$91,199,941
2010	101,000,000	\$89,322,200	452,292	1,471,212	\$91,245,703
2011	106,000,000	\$94,321,706	173,958	1,781,406	\$96,277,070
2012	106,000,000	\$94,321,005		2,082,767	\$96,403,771
2013	106,000,000	\$94,319,270		2,375,743	\$96,695,012
2014	106,000,000	\$94,321,516		638,541	\$94,960,057
2015	106,000,000	\$94,321,716			\$94,321,716
2016	106,000,000	\$94,320,416			\$94,320,416
2017	106,000,000	\$106,000,000			\$106,000,000
2018	106,000,000	\$106,000,000			\$106,000,000
2019	106,000,000	\$106,000,000			\$106,000,000
2020	106,000,000	\$106,000,000			\$106,000,000
Total	\$1,767,000,000	\$1,752,426,601	\$2,713,750	\$10,939,619	\$1,766,079,969
Variance		\$14,573,400			\$920,031

Scenario 3B: Two GARVEE Bond Issues (2005, 2008), 8-Year maturities
vs. Project Completion Over a 10-Year Period

Year	Federal Funds (Scenario 1 Benchmark)	Total Funds Net Debt Service	Add Back Investment Proceeds	Present Value Savings	Total Funds Net for Cash Flow
2004	\$101,000,000	\$101,000,000			\$101,000,000
2005	101,000,000	\$151,000,000			\$151,000,000
2006	101,000,000	\$93,954,822	730,625	107,510	\$94,792,957
2007	101,000,000	\$93,952,170	452,292	388,536	\$94,792,998
2008	101,000,000	\$143,954,178	173,958	661,560	\$144,789,696
2009	101,000,000	\$89,317,604	730,625	926,988	\$90,975,216
2010	101,000,000	\$89,322,200	452,292	1,184,146	\$90,958,637
2011	106,000,000	\$94,321,706	173,958	1,433,815	\$95,929,479
2012	106,000,000	\$94,321,005		1,676,373	\$95,997,378
2013	106,000,000	\$94,319,270		1,912,183	\$96,231,453
2014	106,000,000	\$94,321,516		2,140,647	\$96,462,163
2015	106,000,000	\$94,321,716		2,362,456	\$96,684,172
2016	106,000,000	\$94,320,416		624,455	\$94,944,871
2017	106,000,000	\$106,000,000			\$106,000,000
2018	106,000,000	\$106,000,000			\$106,000,000
2019	106,000,000	\$106,000,000			\$106,000,000
2020	106,000,000	\$106,000,000			\$106,000,000
Total	\$1,767,000,000	\$1,752,426,601	\$2,713,750	\$13,418,669	\$1,768,559,019
Variance		\$14,573,400			-\$1,559,019

Summary

- **Any final analysis of cost/benefits of GARVEEs will require additional modeling based on actual projects and timelines.**
- **GARVEE bonds can, however, be structured in a way that reduces the cost of debt service, minimizing costs.**
- **The cost of debt service can, depending on economic conditions, be more than offset by the re-investment of bond proceeds and inflationary savings.**
- **Economic benefits from improved highways will likely accrue earlier because of faster completion of projects.**

Considerations on Limits to GARVEE Issuance

- Long-term commitments for repayment can lessen a transportation department's ability to meet a state's changing transportation needs.
- Dependability of future federal appropriations.
- Some states limit level of use:
 - Example: California -- 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.
- Alternative: Limit GARVEE issuance to incremental increase in federal aid above a base year (2004).
 - Does not impact current plans to use existing aid.

Treasurer's Recommendation

- **Develop a carefully crafted and conservative GARVEE bonding program to fund a number of major outstanding projects.**
- **Assemble a Working Group to develop the program, including:**
 - **Secretary of Administration**
 - **Secretary of Transportation**
 - **State Treasurer**
 - **Chairs of the Transportation Committees**
 - **Governor's designee to the Capital Debt Affordability Advisory Committee**
- **Treasurer to conduct an RFP to select an investment banker/underwriter who, along with the current Financial Advisor, will assist in development of the proposal and, contingent upon approval, executing the proposal in the market.**
- **Prepare proposal and necessary authorizing language for presentation to the General Assembly.**

Supporting Schedules

Debt Service Schedules and Related
Analysis Detail for Various Scenarios

SOURCES AND USES OF FUNDS

Scenario 2 - 12-Year Maturities
2005 Issuance
Vermont Department of Transportation
FOR ILLUSTRATIVE PURPOSES ONLY

Sources:	
<hr/>	
Bond Proceeds:	
Par Amount	50,630,000.00
	<hr/>
	50,630,000.00
	<hr/>
Uses:	
<hr/>	
Delivery Date Expenses:	
Cost of Issuance	506,300.00
Bond Insurance	122,286.20
	<hr/>
	628,586.20
Other Uses of Funds:	
Project Fund	50,000,000.00
Additional Proceeds	1,413.80
	<hr/>
	50,001,413.80
	<hr/>
	50,630,000.00
	<hr/>

True Interest Cost (TIC) 3.028873%

BOND DEBT SERVICE

Scenario 2 - 12-Year Maturities
2005 Issuance
Vermont Department of Transportation
FOR ILLUSTRATIVE PURPOSES ONLY

Period Ending	Principal	Coupon	Interest	Debt Service
08/01/2006	3,760,000	1.130%	1,334,993.50	5,094,993.50
08/01/2007	3,800,000	1.360%	1,292,505.50	5,092,505.50
08/01/2008	3,855,000	1.670%	1,240,825.50	5,095,825.50
08/01/2009	3,920,000	2.030%	1,176,447.00	5,096,447.00
08/01/2010	4,000,000	2.330%	1,096,871.00	5,096,871.00
08/01/2011	4,090,000	2.560%	1,003,671.00	5,093,671.00
08/01/2012	4,195,000	2.800%	898,967.00	5,093,967.00
08/01/2013	4,315,000	3.040%	781,507.00	5,096,507.00
08/01/2014	4,445,000	3.240%	650,331.00	5,095,331.00
08/01/2015	4,590,000	3.410%	506,313.00	5,096,313.00
08/01/2016	4,745,000	3.560%	349,794.00	5,094,794.00
08/01/2017	4,915,000	3.680%	180,872.00	5,095,872.00
	<hr/>		<hr/>	<hr/>
	50,630,000		10,513,097.50	61,143,097.50
	<hr/>		<hr/>	<hr/>

SOURCES AND USES OF FUNDS

Scenario 2 - 12-Year Maturities
2008 Issuance
Vermont Department of Transportation
FOR ILLUSTRATIVE PURPOSES ONLY

Sources:	
<hr/>	
Bond Proceeds:	
Par Amount	50,635,000.00
	<hr/>
	50,635,000.00
	<hr/> <hr/>
Uses:	
<hr/>	
Delivery Date Expenses:	
Cost of Issuance	506,350.00
Bond Insurance	<u>128,144.93</u>
	634,494.93
Other Uses of Funds:	
Project Fund	50,000,000.00
Additional Proceeds	<u>505.07</u>
	50,000,505.07
	<hr/>
	50,635,000.00
	<hr/> <hr/>

True Interest Cost (TIC) 3.247849%

BOND DEBT SERVICE

Scenario 2 - 12-Year Maturities
2008 Issuance
Vermont Department of Transportation
FOR ILLUSTRATIVE PURPOSES ONLY

Period Ending	Principal	Coupon	Interest	Debt Service
<hr/>				
08/01/2009	2,585,000	1.130%	1,479,979.50	4,064,979.50
08/01/2010	2,615,000	1.360%	1,450,769.00	4,065,769.00
08/01/2011	2,655,000	1.670%	1,415,205.00	4,070,205.00
08/01/2012	2,695,000	2.030%	1,370,866.50	4,065,866.50
08/01/2013	2,750,000	2.330%	1,316,158.00	4,066,158.00
08/01/2014	2,815,000	2.560%	1,252,083.00	4,067,083.00
08/01/2015	2,885,000	2.800%	1,180,019.00	4,065,019.00
08/01/2016	2,965,000	3.040%	1,099,239.00	4,064,239.00
08/01/2017	3,055,000	3.240%	1,009,103.00	4,064,103.00
08/01/2018	8,250,000	3.410%	910,121.00	9,160,121.00
08/01/2019	8,530,000	3.560%	628,796.00	9,158,796.00
08/01/2020	8,835,000	3.680%	325,128.00	9,160,128.00
	<hr/>			
	50,635,000		13,437,467.00	64,072,467.00
	<hr/> <hr/>			<hr/> <hr/>

	Federal Funds	Debt Service on 2005 Bonds	Debt Service on 2008 Bonds	Fed Funds Less Debt Service	Total Debt Service	Net Bond Proceeds	Total Funds Net Debt Service
2004	\$101,000,000			\$101,000,000			\$101,000,000
2005	101,000,000			101,000,000		50,000,000	151,000,000
2006	101,000,000	5,094,994		95,905,007	5,094,994		95,905,007
2007	101,000,000	5,092,506		95,907,495	5,092,506		95,907,495
2008	101,000,000	5,095,826		95,904,175	5,095,826	50,000,000	145,904,175
2009	101,000,000	5,096,447	4,064,980	91,838,574	9,161,427		91,838,574
2010	101,000,000	5,096,871	4,065,769	91,837,360	9,162,640		91,837,360
2011	106,000,000	5,093,671	4,070,205	96,836,124	9,163,876		96,836,124
2012	106,000,000	5,093,967	4,065,867	96,840,167	9,159,834		96,840,167
2013	106,000,000	5,096,507	4,066,158	96,837,335	9,162,665		96,837,335
2014	106,000,000	5,095,331	4,067,083	96,837,586	9,162,414		96,837,586
2015	106,000,000	5,096,313	4,065,019	96,838,668	9,161,332		96,838,668
2016	106,000,000	5,094,794	4,064,239	96,840,967	9,159,033		96,840,967
2017	106,000,000	5,095,872	4,064,103	96,840,025	9,159,975		96,840,025
2018	106,000,000		9,160,121	96,839,879	9,160,121		96,839,879
2019	106,000,000		9,158,796	96,841,204	9,158,796		96,841,204
2020	106,000,000		9,160,128	96,839,872	9,160,128		96,839,872
Total	\$1,767,000,000	\$61,143,098	\$64,072,467	\$1,641,784,436	\$125,215,565	\$100,000,000	\$1,741,784,436

SOURCES AND USES OF FUNDS

Scenario 3 - 8-Year Maturities
 2005 Issuance
 Vermont Department of Transportation
 FOR ILLUSTRATIVE PURPOSES ONLY

Sources:

Bond Proceeds:	
Par Amount	50,620,000.00
	<u>50,620,000.00</u>
	<u><u>50,620,000.00</u></u>

Uses:

Delivery Date Expenses:	
Cost of Issuance	506,200.00
Bond Insurance	<u>112,724.21</u>
	618,924.21
Other Uses of Funds:	
Project Fund	50,000,000.00
Additional Proceeds	<u>1,075.79</u>
	50,001,075.79
	<u>50,620,000.00</u>
	<u><u>50,620,000.00</u></u>

True Interest Cost (TIC) 2.451658%

BOND DEBT SERVICE

Scenario 3 - 8-Year Maturities
 2005 Issuance
 Vermont Department of Transportation
 FOR ILLUSTRATIVE PURPOSES ONLY

Period Ending	Principal	Coupon	Interest	Debt Service
08/01/2006	5,960,000	1.130%	1,085,178	7,045,178
08/01/2007	6,030,000	1.360%	1,017,830	7,047,830
08/01/2008	6,110,000	1.670%	935,822	7,045,822
08/01/2009	6,210,000	2.030%	833,785	7,043,785
08/01/2010	6,340,000	2.330%	707,722	7,047,722
08/01/2011	6,485,000	2.560%	560,000	7,045,000
08/01/2012	6,650,000	2.800%	393,984	7,043,984
08/01/2013	6,835,000	3.040%	207,784	7,042,784
	<u>50,620,000</u>		<u>5,742,105</u>	<u>56,362,105</u>
	<u><u>50,620,000</u></u>		<u><u>5,742,105</u></u>	<u><u>56,362,105</u></u>

SOURCES AND USES OF FUNDS

Scenario 3 - 8-Year Maturities
 2008 Issuance
 Vermont Department of Transportation
 FOR ILLUSTRATIVE PURPOSES ONLY

Sources:	
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Bond Proceeds:	
Par Amount	50,625,000.00
	<hr/>
	50,625,000.00
	<hr/> <hr/>
Uses:	
<hr/>	
Delivery Date Expenses:	
Cost of Issuance	506,250.00
Bond Insurance	116,422.59
	<hr/>
	622,672.59
Other Uses of Funds:	
Project Fund	50,000,000.00
Additional Proceeds	2,327.41
	<hr/>
	50,002,327.41
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	50,625,000.00
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True Interest Cost (TIC) 2.648762%

BOND DEBT SERVICE

Scenario 3 - 8-Year Maturities
 2008 Issuance
 Vermont Department of Transportation
 FOR ILLUSTRATIVE PURPOSES ONLY

Period Ending	Principal	Coupon	Interest	Debt Service
08/01/2009	3,410,000	1.130%	1,228,611.50	4,638,611.50
08/01/2010	3,440,000	1.360%	1,190,078.50	4,630,078.50
08/01/2011	3,490,000	1.670%	1,143,294.50	4,633,294.50
08/01/2012	3,550,000	2.030%	1,085,011.50	4,635,011.50
08/01/2013	3,625,000	2.330%	1,012,946.50	4,637,946.50
08/01/2014	10,750,000	2.560%	928,484.00	11,678,484.00
08/01/2015	11,025,000	2.800%	653,284.00	11,678,284.00
08/01/2016	11,335,000	3.040%	344,584.00	11,679,584.00
	<hr/>			
	50,625,000		7,586,294.50	58,211,294.50
	<hr/> <hr/>			

Scenario 3 - \$50 Million Issued in Both 2005 and 2008 (8-Year Maturities)

	Federal Funds	Debt Service on 2005 Bonds	Debt Service on 2008 Bonds	Fed Funds Less Debt Service	Total Debt Service	Net Bond Proceeds	Total Funds	Net Debt Service
2004	\$101,000,000			\$101,000,000				\$101,000,000
2005	101,000,000			101,000,000		50,000,000		151,000,000
2006	101,000,000	7,045,178		93,954,822	7,045,178			93,954,822
2007	101,000,000	7,047,830		93,952,170	7,047,830			93,952,170
2008	101,000,000	7,045,822		93,954,178	7,045,822	50,000,000		143,954,178
2009	101,000,000	7,043,785	4,638,612	89,317,604	11,682,397			89,317,604
2010	101,000,000	7,047,722	4,630,079	89,322,200	11,677,801			89,322,200
2011	106,000,000	7,045,000	4,633,295	94,321,706	11,678,295			94,321,706
2012	106,000,000	7,043,984	4,635,012	94,321,005	11,678,996			94,321,005
2013	106,000,000	7,042,784	4,637,947	94,319,270	11,680,731			94,319,270
2014	106,000,000		11,678,484	94,321,516	11,678,484			94,321,516
2015	106,000,000		11,678,284	94,321,716	11,678,284			94,321,716
2016	106,000,000		11,679,584	94,320,416	11,679,584			94,320,416
2017	106,000,000			106,000,000				106,000,000
2018	106,000,000			106,000,000				106,000,000
2019	106,000,000			106,000,000				106,000,000
2020	106,000,000			106,000,000				106,000,000
Total	\$1,767,000,000	\$56,362,105	\$58,211,295	\$1,652,426,601	\$114,573,400	\$100,000,000		\$1,752,426,601

Additional Information - Bond Construction Fund Draw vs. "Pay as You Go"

Construction Fund

Quarter	Beginning Balance	Draw	Ending Balance	Interest @ 1.67%
8/1/2005	\$50,000,000	\$4,166,667	\$45,833,333	\$208,750
11/1/2005	45,833,333	4,166,667	41,666,667	191,354
2/1/2006	41,666,667	4,166,667	37,500,000	173,958
5/1/2006	37,500,000	4,166,667	33,333,333	156,563
8/1/2006	33,333,333	4,166,667	29,166,667	139,167
11/1/2006	29,166,667	4,166,667	25,000,000	121,771
2/1/2007	25,000,000	4,166,667	20,833,333	104,375
5/1/2007	20,833,333	4,166,667	16,666,667	86,979
8/1/2007	16,666,667	4,166,667	12,500,000	69,583
11/1/2007	12,500,000	4,166,667	8,333,333	52,188
2/1/2008	8,333,333	4,166,667	4,166,667	34,792
5/1/2008	4,166,667	4,166,667	0	17,396
8/1/2008	50,000,000	4,166,667	45,833,333	208,750
11/1/2008	45,833,333	4,166,667	41,666,667	191,354
2/1/2009	41,666,667	4,166,667	37,500,000	173,958
5/1/2009	37,500,000	4,166,667	33,333,333	156,563
8/1/2009	33,333,333	4,166,667	29,166,667	139,167
11/1/2009	29,166,667	4,166,667	25,000,000	121,771
2/1/2010	25,000,000	4,166,667	20,833,333	104,375
5/1/2010	20,833,333	4,166,667	16,666,667	86,979
8/1/2010	16,666,667	4,166,667	12,500,000	69,583
11/1/2010	12,500,000	4,166,667	8,333,333	52,188
2/1/2011	8,333,333	4,166,667	4,166,667	34,792
5/1/2011	4,166,667	4,166,667	0	17,396
Total		\$100,000,000		\$2,713,750

Pay-As-You-Go (8-Years)

Quarter	Draw	Factor	Present Value	Difference
8/1/2005	\$3,030,303	1.000	\$3,030,303	\$0
11/1/2005	3,030,303	0.993	3,007,810	\$22,493
2/1/2006	3,030,303	0.985	2,985,484	\$44,819
5/1/2006	3,030,303	0.978	2,964,043	\$66,260
8/1/2006	3,030,303	0.971	2,942,042	\$88,261
11/1/2006	3,030,303	0.964	2,920,204	\$110,099
2/1/2007	3,030,303	0.957	2,898,528	\$131,775
5/1/2007	3,030,303	0.950	2,877,712	\$152,591
8/1/2007	3,030,303	0.943	2,856,351	\$173,952
11/1/2007	3,030,303	0.936	2,835,149	\$195,154
2/1/2008	3,030,303	0.929	2,814,105	\$216,198
5/1/2008	3,030,303	0.922	2,793,669	\$236,634
8/1/2008	3,030,303	0.915	2,772,932	\$257,371
11/1/2008	3,030,303	0.908	2,752,349	\$277,954
2/1/2009	3,030,303	0.902	2,731,919	\$298,384
5/1/2009	3,030,303	0.895	2,712,300	\$318,003
8/1/2009	3,030,303	0.888	2,692,167	\$338,136
11/1/2009	3,030,303	0.882	2,672,184	\$358,119
2/1/2010	3,030,303	0.875	2,652,349	\$377,954
5/1/2010	3,030,303	0.869	2,633,301	\$397,002
8/1/2010	3,030,303	0.863	2,613,754	\$416,549
11/1/2010	3,030,303	0.856	2,594,353	\$435,950
2/1/2011	3,030,303	0.850	2,575,096	\$455,207
5/1/2011	3,030,303	0.844	2,556,603	\$473,700
8/1/2011	3,030,303	0.837	2,537,626	\$492,677
11/1/2011	3,030,303	0.831	2,518,789	\$511,514
2/1/2012	3,030,303	0.825	2,500,093	\$530,210
5/1/2012	3,030,303	0.819	2,481,937	\$548,366
8/1/2012	3,030,303	0.813	2,463,515	\$566,788
11/1/2012	3,030,303	0.807	2,445,229	\$585,074
2/1/2013	3,030,303	0.801	2,427,078	\$603,225
5/1/2013	3,030,303	0.795	2,409,648	\$620,655
8/1/2013	3,030,303	0.789	2,391,762	\$638,541
Total	\$100,000,000		\$89,060,381	\$10,939,619

Pay-As-You-Go (10-Years)

Quarter	Draw	Factor	Present Value	Difference
8/1/2005	\$2,439,024	1.000	\$2,439,024	0.00
11/1/2005	2,439,024	0.993	2,420,920	18,104.27
2/1/2006	2,439,024	0.985	2,402,950	36,074.16
5/1/2006	2,439,024	0.978	2,385,693	53,331.14
8/1/2006	2,439,024	0.971	2,367,985	71,039.55
11/1/2006	2,439,024	0.964	2,350,408	88,616.51
2/1/2007	2,439,024	0.957	2,332,961	106,063.00
5/1/2007	2,439,024	0.950	2,316,207	122,817.35
8/1/2007	2,439,024	0.943	2,299,014	140,009.98
11/1/2007	2,439,024	0.936	2,281,949	157,074.99
2/1/2008	2,439,024	0.929	2,265,011	174,013.34
5/1/2008	2,439,024	0.922	2,248,563	190,461.79
8/1/2008	2,439,024	0.915	2,231,872	207,152.31
11/1/2008	2,439,024	0.908	2,215,305	223,718.95
2/1/2009	2,439,024	0.902	2,198,862	240,162.61
5/1/2009	2,439,024	0.895	2,183,070	255,953.91
8/1/2009	2,439,024	0.888	2,166,866	272,158.30
11/1/2009	2,439,024	0.882	2,150,782	288,242.41
2/1/2010	2,439,024	0.875	2,134,817	304,207.13
5/1/2010	2,439,024	0.869	2,119,486	319,538.48
8/1/2010	2,439,024	0.863	2,103,753	335,270.90
11/1/2010	2,439,024	0.856	2,088,138	350,886.54
2/1/2011	2,439,024	0.850	2,072,638	366,386.27
5/1/2011	2,439,024	0.844	2,057,753	381,271.08
8/1/2011	2,439,024	0.837	2,042,479	396,545.27
11/1/2011	2,439,024	0.831	2,027,318	411,706.09
2/1/2012	2,439,024	0.825	2,012,270	426,754.37
5/1/2012	2,439,024	0.819	1,997,657	441,367.43
8/1/2012	2,439,024	0.813	1,982,829	456,195.54
11/1/2012	2,439,024	0.807	1,968,111	470,913.59
2/1/2013	2,439,024	0.801	1,953,502	485,522.39
5/1/2013	2,439,024	0.795	1,939,473	499,551.61
8/1/2013	2,439,024	0.789	1,925,077	513,947.84
11/1/2013	2,439,024	0.783	1,910,787	528,237.20
2/1/2014	2,439,024	0.778	1,896,604	542,420.50
5/1/2014	2,439,024	0.772	1,882,983	556,041.11
8/1/2014	2,439,024	0.766	1,869,006	570,018.03
11/1/2014	2,439,024	0.761	1,855,133	583,891.20
2/1/2015	2,439,024	0.755	1,841,363	597,661.39
5/1/2015	2,439,024	0.750	1,828,139	610,885.28
8/1/2015	2,439,024	0.744	1,814,569	624,455.11
	\$100,000,000.00		\$86,581,331.10	\$13,418,668.90