

NEW ISSUE - BOOK-ENTRY-ONLY

*In the opinion of Bond Counsel, under existing law, and assuming continued compliance with various requirements of the Internal Revenue Code of 1986, as amended, interest on the 1996 Bonds will not be included in the gross income of holders of the Bonds for federal income tax purposes. While interest on the 1996 Bonds will not constitute a preference item for purposes of computation of the alternative minimum tax imposed on certain individuals and corporations, interest on the 1996 Bonds will be included in the "adjusted current earnings" of corporate holders of the 1996 Bonds and therefore will be taken into account in computing the alternative minimum tax imposed on certain corporations. In the opinion of Bond Counsel, the 1996 Bonds, their transfer and the income therefrom, including profit on the sale thereof, shall at all times be exempt from taxation by and within the Commonwealth, although the 1996 Bonds and the interest thereon may be included in the measure of estate and inheritance taxes and of certain corporate excise and franchise taxes. For federal and Massachusetts tax purposes, interest includes original issue discount. See "TAX EXEMPTION" herein.*



**\$150,000,000**  
**THE COMMONWEALTH OF MASSACHUSETTS**  
**Special Obligation Revenue Bonds**  
**1996 Series A**

Dated: March 1, 1996

Due: June 1, as shown on  
the inside hereof

*The 1996 Bonds will be issued by means of a book-entry-only system evidencing ownership and transfer of the 1996 Bonds on the records of The Depository Trust Company ("DTC") and its participants. Details of payment of the 1996 Bonds are more fully described in this Official Statement. The 1996 Bonds will bear interest from March 1, 1996 and interest will be payable on June 1, 1996 and semiannually thereafter on December 1 and June 1. The 1996 Bonds are subject to redemption prior to maturity, as more fully described herein.*

The 1996 Bonds are special limited obligations of the Commonwealth payable from and secured solely by a pledge of Pledged Funds, as defined herein, all rights to receive Pledged Funds, and all Funds and Accounts, other than the Rebate Fund, held under the Trust Agreement dated as of June 1, 1994 between the Commonwealth and Fleet National Bank of Massachusetts (formerly Shawmut Bank, N.A.), as trustee. Pledged Funds are moneys received or to be received by the Commonwealth from certain Gasoline Tax revenues and certain other moneys, all as described herein. **THE 1996 BONDS ARE NOT GENERAL OBLIGATIONS OF THE COMMONWEALTH AND ARE NOT SECURED BY THE FULL FAITH AND CREDIT OF THE COMMONWEALTH. THE 1996 BONDS ARE PAYABLE ONLY FROM PLEDGED FUNDS AND OTHER MONEYS AVAILABLE TO THE OWNERS OF THE 1996 BONDS UNDER THE TRUST AGREEMENT.**

The 1996 Bonds are offered when, as and if issued and received by the Underwriters and subject to the unqualified approving opinion as to legality of Mintz, Levin, Cohn, Ferris, Glovsky and Popeo, P.C., Boston, Massachusetts, Bond Counsel. The 1996 Bonds are expected to be available for delivery at DTC in New York, New York, on or about March 28, 1996.

March 19, 1996

# THE COMMONWEALTH OF MASSACHUSETTS

## \$150,000,000 Special Obligation Revenue Bonds 1996 Series A

### Serial Bonds

<u>Maturity</u>	<u>Amount</u>	<u>Interest Rate</u>	<u>Price or Yield</u>
1997	\$ 4,655,000	4%	3½%
1998	4,845,000	4	3.95
1999	5,025,000	4.20	100
2000	5,250,000	4.40	100
2001	5,480,000	4.60	100
2002*	5,730,000	4.70	100
2003*	6,000,000	4.80	100
2004*	6,290,000	4.90	100
2005*	6,600,000	5	100
2006*	6,925,000	5.10	100
2007*	7,280,000	5.20	5¼
2008*	7,660,000	5¼	5.35
2009*	8,060,000	5¼	5.45
2010*	8,485,000	5½	5.55
2011*	8,950,000	5½	5.65
2012*	9,455,000	5½	NRO
2013*	9,965,000	5½	NRO
2014*	10,510,000	5½	NRO
2015	11,090,000	5.90	NRO
2016	11,745,000	5.90	NRO

(accrued interest to be added)

\*Insured by AMBAC Indemnity Corporation. See "AUTHORIZATION, SECURITY AND SOURCES OF PAYMENT FOR THE BONDS - Bond Insurance."

**FOR NEW HAMPSHIRE RESIDENTS: THESE SECURITIES HAVE NOT BEEN APPROVED OR DISAPPROVED BY THE SECURITIES AND EXCHANGE COMMISSION OR ANY STATE SECURITIES COMMISSION NOR HAS THE SECURITIES AND EXCHANGE COMMISSION OR ANY STATE SECURITIES COMMISSION PASSED UPON THE ACCURACY OR ADEQUACY OF THIS OFFICIAL STATEMENT. ANY REPRESENTATION TO THE CONTRARY IS A CRIMINAL OFFENSE.**

ADDENDUM

Please note that the number \$6,170,462.50 as it appears on page 13 of this final official statement should be \$6,224,207.50, and that the number \$18,778,981.25 as it appears on page 14 of this final official statement should be \$18,832,726.25.

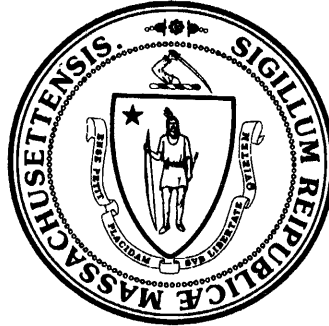


No dealer, broker, salesperson or other person has been authorized by the Commonwealth of Massachusetts or the Underwriters of the 1996 Bonds to give any information or to make any representations, other than those contained in this Official Statement, and if given or made, such other information or representations must not be relied upon as having been authorized by either of the foregoing. This Official Statement does not constitute an offer to sell or a solicitation of any offer to buy nor shall there be any sale of the 1996 Bonds offered hereby by any person in any jurisdiction in which it is unlawful for such person to make such offer, solicitation or sale. The information set forth herein has been furnished by the Commonwealth and includes information obtained from other sources which are believed to be reliable, but is not guaranteed as to accuracy or completeness and is not to be construed as a representation by the Underwriters of the 1996 Bonds or, as to information from other sources, the Commonwealth. The information and expressions of opinion herein are subject to change without notice and neither the delivery of this Official Statement nor any sale made hereunder shall, under any circumstances, create any implication that there has been no change in the affairs of the Commonwealth, or its agencies, authorities and political subdivisions, since the date hereof, except as expressly set forth herein.

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**THE COMMONWEALTH OF MASSACHUSETTS**



**CONSTITUTIONAL OFFICERS**

**William F. Weld** . . . . . **Governor**  
**Argeo Paul Cellucci** . . . . . **Lieutenant Governor**  
**William F. Galvin** . . . . . **Secretary of the Commonwealth**  
**L. Scott Harshbarger** . . . . . **Attorney General**  
**Joseph D. Malone** . . . . . **Treasurer and Receiver-General**  
**A. Joseph DeNucci** . . . . . **Auditor**

**LEGISLATIVE OFFICERS**

**Thomas F. Birmingham** . . . . . **President of the Senate**  
**Charles F. Flaherty** . . . . . **Speaker of the House**

## OFFICIAL STATEMENT

\$150,000,000

### THE COMMONWEALTH OF MASSACHUSETTS

#### Special Obligation Revenue Bonds 1996 Series A

#### INTRODUCTION

This Official Statement, including the cover page and appendices, provides information in connection with the issuance by The Commonwealth of Massachusetts (the "Commonwealth") of \$150,000,000 of its Special Obligation Revenue Bonds, 1996 Series A (the "1996 Bonds").

Section 20 of Chapter 29 of the Massachusetts General Laws and Chapter 33 of the Acts of 1991 authorize the issuance of special obligation revenue bonds to finance the costs of certain highway projects in the Commonwealth. The special obligation revenue bonds are special limited obligations of the Commonwealth. The principal of and interest on such bonds are payable from and secured solely by a pledge of and lien on certain funds, primarily a portion of the excise tax imposed by the Commonwealth on gasoline under Chapter 64A of the Massachusetts General Laws. Special obligation revenue bonds are not general obligations of the Commonwealth and are not secured by the full faith and credit of the Commonwealth.

The Commonwealth currently levies a gasoline tax of 21¢ per gallon. Under state law, a portion of the gasoline tax, 6.86¢ per gallon, is deposited in a separate fund and is available to be used for highway-related expenses including debt service on special obligation revenue bonds.

The 1996 Bonds are the Commonwealth's third issue of special obligation revenue bonds. The Commonwealth issued \$103,770,000 of special obligation revenue bonds in 1992 (the "1992 Bonds") and \$300,000,000 of such bonds in 1994 (the "1994 Bonds"). The 1992 Bonds were issued pursuant to a trust agreement under which the Commonwealth pledged 2¢ per gallon of gasoline tax revenues as security for the payment of the 1992 Bonds. Subsequently, the Commonwealth covenanted not to issue additional bonds under the 1992 trust agreement (other than refunding bonds that produce debt service savings in every fiscal year).

The 1994 Bonds were issued, and the 1996 Bonds are being issued, pursuant to a 1994 trust agreement under which the Commonwealth has pledged a separate 4.86¢ per gallon of the gasoline tax to the payment of any bonds issued under the agreement. In addition, the Commonwealth has pledged that any funds pledged under the 1992 trust agreement that are not needed to pay debt service on the 1992 Bonds are pledged to the payment of bonds issued under the 1994 trust agreement. Of the 2¢ per gallon pledged under the 1992 trust agreement, approximately 1.58¢ per gallon are surplus and are available to pay debt service on bonds issued under the 1994 trust agreement.

Based on actual gasoline tax revenues received during fiscal 1995, revenues pledged under the 1994 trust agreement would have provided coverage of 4.18 times the combined annual debt service of the 1994 Bonds and the 1996 Bonds. Over the last ten fiscal years, such hypothetical coverage would have ranged between 3.97 and 4.28 times the combined annual debt service of the 1994 Bonds and the 1996 Bonds.

The Commonwealth reserves the right to issue additional bonds under the 1994 trust agreement. However, additional bonds cannot be issued unless certain conditions are met, including a requirement that historical or projected revenues pledged under the agreement will not be less than 2.00 times the estimated combined annual debt service on all bonds issued under the agreement, including the additional bonds.

The 1994 trust agreement also establishes a debt service reserve fund requirement for bonds issued under the agreement, which is equal to 50% of maximum debt service due in any fiscal year. The Commonwealth met this requirement with regard to the 1994 Bonds by purchasing a surety bond equal to the aforesaid requirement, and the Commonwealth has secured a surety bond to meet the debt service reserve fund requirement for the 1996 Bonds.

Under the 1994 trust agreement, if the Commonwealth fails to maintain a debt service coverage ratio of at least 2.00 as set forth in the agreement, the debt service reserve fund requirement will increase to 100% of the maximum debt service due in any fiscal year.

**THE ABOVE SUMMARY IS INTENDED ONLY AS A GENERAL INTRODUCTION TO THE 1996 BONDS. FOR A MORE DETAILED DESCRIPTION OF THE 1996 BONDS, THE SPECIFIC PLEDGE AND OTHER PROVISIONS OF THE TRUST AGREEMENT UNDER WHICH THE 1996 BONDS ARE BEING ISSUED, AS WELL AS HISTORICAL INFORMATION AND PROJECTIONS CONCERNING FUNDS PLEDGED TO THE PAYMENT OF THE 1996 BONDS, THE READER SHOULD EXAMINE THE ENTIRETY OF THIS OFFICIAL STATEMENT.**

### **Purpose and Content of Official Statement**

This Official Statement describes the terms and use of proceeds of, and security for, the 1996 Bonds. This introduction is subject in all respects to the additional information contained in this Official Statement, including Appendices A through F. All descriptions of documents contained herein are only summaries and are qualified in their entirety by reference to each such document. All capitalized terms not otherwise defined herein shall have the meanings set forth in "Appendix C -- Summary of Certain Provisions of the Trust Agreement." Appendix A contains certain economic information concerning the Commonwealth. Appendix B and Appendix C are summaries of certain provisions of the Special Obligation Act and the Trust Agreement, respectively. Appendix D contains the proposed form of legal opinion of bond counsel with respect to the 1996 Bonds. Appendix E contains the specimen of the bond insurance policy to be issued with respect to the Insured Bonds (as hereinafter defined). Appendix F contains the proposed form of the Commonwealth's continuing disclosure undertaking to be included in the form of the 1996 Bonds to facilitate compliance by bidders with the requirements of paragraph (b)(5) of Rule 15c2-12 of the Securities and Exchange Commission. See "CONTINUING DISCLOSURE" and "AVAILABILITY OF OTHER INFORMATION."

## **THE 1996 BONDS**

### **General**

The 1996 Bonds will be dated March 1, 1996 and will initially bear interest from such date payable semiannually on June 1 and December 1 of each year, commencing June 1, 1996 (each an "Interest Payment Date"), until the principal amount is paid. The 1996 Bonds shall mature on June 1 in the years 1997 through 2016 in the principal amounts and bear interest at the rates per annum (calculated on the basis of a 360-day year of twelve 30-day months) as set forth on the inside cover page of this Official Statement. The Trustee will be the trustee and paying agent for the 1996 Bonds.

*Book-Entry-Only System.* The 1996 Bonds will be issued by means of a book-entry-only system, with one bond certificate for each maturity immobilized at The Depository Trust Company, New York, New York ("DTC"). The certificates will not be available for distribution to the public and will evidence ownership of the 1996 Bonds in principal amounts of \$5,000, or integral multiples thereof. Transfers of ownership will be effected on the records of DTC and its Participants (as defined herein) pursuant to rules and procedures established by DTC and its Participants. Interest, principal and premium, if any, due on the 1996 Bonds will be paid in clearinghouse funds to DTC or its nominee as registered owner of the 1996 Bonds. The record date for payments on account of the 1996 Bonds will be the business day next preceding an Interest Payment Date. As long as the book-entry-only system remains in effect, DTC or its nominee will be recognized as the owner of the 1996 Bonds for all purposes, including notices and voting. Neither the Commonwealth nor the Trustee will be responsible or liable for maintaining, supervising or reviewing the records maintained by DTC, its Participants or persons acting through such Participants. See "BOOK-ENTRY-ONLY SYSTEM."



## Redemption

The 1996 Bonds maturing on or prior to June 1, 2006, are not subject to redemption prior to their stated dates of maturity.

*Optional Redemption.* The 1996 Bonds maturing on or after June 1, 2007 are subject to redemption prior to their stated dates of maturity on or after June 1, 2006, at the option of the Commonwealth from any monies legally available therefor, in whole or in part at any time, by lot, at the redemption prices (expressed as percentages of the principal amount thereof), plus accrued interest to the redemption date, as follows:

<u>Redemption Dates</u>	<u>Redemption Prices</u>
June 1, 2006 through May 31, 2007, inclusive	101.0%
June 1, 2007 through May 31, 2008, inclusive	100.5
June 1, 2008 and thereafter	100.0

*Notice of Redemption.* The Trustee shall give notice of redemption to the owners of the 1996 Bonds, not less than 30 days prior to the date fixed for redemption. So long as the book-entry-only system remains in effect for the 1996 Bonds, notices of redemption will be mailed by the Trustee only to DTC or its nominee. Any failure on the part of DTC, any DTC Participant, or any nominee of a beneficial owner of any 1996 Bond (having received notice from a DTC Participant or otherwise) to notify the Beneficial Owner (as defined herein) so affected, shall not affect the validity of the redemption.

*Selection for Redemption.* In the event that less than all of any one maturity of the 1996 Bonds are to be redeemed, and so long as the book-entry-only system remains in effect for such 1996 Bonds, the particular 1996 Bonds or portion of any such 1996 Bonds of a particular maturity to be redeemed will be selected by DTC by lot. If the book-entry-only system no longer remains in effect for the 1996 Bonds, selection for redemption of less than all of any one maturity of 1996 Bonds will be made by the Trustee by lot in such manner, as in its sole discretion it shall deem appropriate and fair. For purposes of selection by lot within a maturity, each \$5,000 of principal amount of a 1996 Bond will be considered a separate 1996 Bond.

## Application of Proceeds

The net proceeds of the sale of the 1996 Bonds (exclusive of underwriters' discount and accrued interest) will be applied by the State Treasurer to the purposes for which the 1996 Bonds were authorized by the Legislature, including the payment of \$98 million aggregate principal amount of bond anticipation notes issued as commercial paper. Any accrued interest payable upon original delivery of the 1996 Bonds will be deposited in the Debt Service Fund established under the Trust Agreement and used to pay interest on the 1996 Bonds.

## AUTHORIZATION, SECURITY AND SOURCES OF PAYMENT FOR THE BONDS

### Authorization

The 1996 Bonds are authorized by and issued pursuant to (i) section 20 of Chapter 29 of the Massachusetts General Laws (as it may be amended from time to time, the "Special Obligation Act") and (ii) Chapter 33 of the Acts of 1991 (as it may be amended from time to time, the "Highway Act") (collectively, with the Special Obligation Act, the "Acts") and are issued under and pursuant to a Trust Agreement dated as of June 1, 1994 (the "Trust Agreement") between the Commonwealth and Fleet National Bank of Massachusetts (formerly Shawmut Bank, N.A.), as trustee (the "Trustee"). See "Appendix B - Summary of Certain Provisions of the Special Obligation Act" and "FINANCING THE COMMONWEALTH HIGHWAY SYSTEM -- Sources of Funding for Current Highway System Capital Plan" for a more complete description of the Special Obligation Act and the Highway Act, respectively. In June, 1994, the Commonwealth issued its \$300,000,000 Special Obligation Revenue Bonds, 1994 Series A (the "1994 Bonds"), which are secured on a parity with the 1996 Bonds. Additional bonds may be issued on a parity with the 1996 Bonds and the 1994 Bonds ("Additional Bonds") under the conditions and in the manner

provided in the Trust Agreement (the Additional Bonds, the 1994 Bonds and 1996 Bonds are collectively referred to herein as the "Bonds"). See "Additional Bonds."

The Bonds are special limited obligations of the Commonwealth payable solely from the sources identified herein and are being issued pursuant to the Acts and the Trust Agreement. Under the provisions of the Special Obligation Act, the Commonwealth is authorized to issue special obligation bonds secured by all or any portion of the Highway Fund, an operating fund of the Commonwealth created under Section 34 of Chapter 90 of the Massachusetts General Laws. Under the provisions of the Highway Act, the Commonwealth is authorized to issue such special obligation bonds for the payment of the costs of construction, reconstruction, resurfacing, relocation or necessary or beneficial improvement of public highways, bridges, bicycle paths or facilities, town and county ways and the costs allocated thereto, including the acquisition of those real properties and any appurtenances thereto located within a highway right-of-way corridor and for certain expenditures of the Metropolitan District Commission ("MDC") with respect to its parkways, boulevards and bridges. See "FINANCING THE COMMONWEALTH HIGHWAY SYSTEM -- Sources of Funding for Current Highway System Capital Plan."

### **Overview of Security Provisions**

The principal and redemption price of and interest on the 1996 Bonds ("1996 Bond Debt Service"), on the 1994 Bonds and on any Additional Bonds (collectively, "Debt Service") are payable from and secured solely by a pledge of and lien on Pledged Funds (defined below), all rights to receive Pledged Funds and all moneys, securities, credit enhancement (including the surety bonds issued by AMBAC Indemnity Corporation ("AMBAC Indemnity") and credited to the Debt Service Reserve Fund in satisfaction of the Debt Service Reserve Fund Requirement for the 1994 Bonds and the 1996 Bonds, respectively) and any investment earnings with respect thereto in all funds and accounts held under the Trust Agreement, other than the Rebate Fund. "Pledged Funds" represent amounts received or to be received by the Commonwealth from (i) 4.86¢ per gallon of the excise tax imposed by the Commonwealth on gasoline (other than gasoline used as aviation fuel) (the "Gasoline Tax") under Chapter 64A of the Massachusetts General Laws (the "Gasoline Tax Act"), (ii) Fleet National Bank of Massachusetts (formerly Shawmut Bank, N.A.), as trustee (the "1992 Trustee") under a Trust Agreement dated as of June 1, 1992 (the "1992 Trust Agreement") with the Commonwealth, representing the excess of the 2¢ per gallon of the Gasoline Tax pledged under the 1992 Trust Agreement (the "1992 Pledged Funds") with respect to the 1992 Bonds available after satisfaction of the debt service and reserve fund requirements and certain other obligations applicable to the 1992 Bonds (the "Surplus 1992 Pledged Funds"), (iii) immediately upon the discharge of the lien of the 1992 Trust Agreement, the full amount of the 1992 Pledged Funds and (iv) such Additional Pledged Funds, as defined herein, that the Commonwealth may subsequently determine to include within the definition of Pledged Funds in order to satisfy the debt service coverage tests imposed under the Trust Agreement to issue Additional Bonds. See "Source of Pledged Funds" and "Additional Bonds." For a discussion of the Gasoline Tax, see "COMMONWEALTH GASOLINE TAX."

As provided in the Special Obligation Act, all Pledged Funds shall be immediately subject to the lien of the pledge granted in the Trust Agreement for the 1996 Bonds, without any physical delivery or further act, and such lien shall be valid and binding from the date of issuance of the 1996 Bonds as against all parties having claims of any kind in tort, contract or otherwise against the Commonwealth irrespective of whether such parties have notice of such pledge. Such pledge shall be perfected by filing the Trust Agreement in the records of the State Treasurer and no filing need be made under the Massachusetts Uniform Commercial Code.

### **Special Obligations**

The Bonds are special limited obligations of the Commonwealth and are payable solely from the sources specified in the Trust Agreement. The Bonds are not general obligations of the Commonwealth, are not secured by the full faith and credit of the Commonwealth and are not subject to the statutory limitations on the issuance of "direct debt" of the Commonwealth or the expenditure of moneys for the payment of debt service by the Commonwealth. The Bonds are not payable out of any funds of the Commonwealth other than the Pledged Funds and moneys otherwise available for the benefit of the owners of the Bonds pursuant to the Trust Agreement.

Payments of Debt Service are to be made from Pledged Funds held by the Trustee in the Revenue Account, created by the State Treasurer under the Trust Agreement as a sub-account of the Commonwealth's Infrastructure

Fund. The Infrastructure Fund was created under the Special Obligation Act as a sub-fund of the Commonwealth's Highway Fund in order to account separately for a portion of the receipts of the Gasoline Tax. The Commonwealth has covenanted that, so long as any Bonds are outstanding, no Pledged Funds shall be diverted from the purposes specified in the Special Obligation Act, and unless an appropriation has been made by the legislature of the Commonwealth (the "Legislature") which is sufficient to pay Debt Service, the Pledged Funds shall not be applied to any other permitted use. The Legislature has previously amended and may in the future amend the Special Obligation Act and other statutes that govern Pledged Funds, including the Gasoline Tax Act. However, pursuant to the Special Obligation Act, the Commonwealth has covenanted in the Trust Agreement to maintain the portion of the Gasoline Tax credited to the Highway Fund at a rate of not less than 6.86¢ per gallon, which amount represents the full amount of the Gasoline Tax (at its current rate) credited to the Infrastructure Fund under the Special Obligation Act. Any future amendments of the Special Obligation Act would also be subject to the covenant of the Commonwealth that it shall not take any action that would impair the rights and remedies of the owners of the Bonds. See "Covenants of the Commonwealth." The Trust Agreement does not require the Commonwealth to increase the amount of the Gasoline Tax pledged as Pledged Funds.

The Commonwealth has waived its sovereign immunity and consented to be sued on contractual obligations, including the Bonds and all claims with respect thereto. Although the property of the Commonwealth is generally not subject to attachment or levy to pay a judgment, and the satisfaction of any judgment generally requires legislative appropriation, in accordance with the Special Obligation Act, the Commonwealth has granted a lien on Pledged Funds for the benefit of the owners of the Bonds. Enforcement of a claim for payment of Debt Service may also be subject to the provisions of federal or Commonwealth statutes, if any, hereafter enacted extending the time for payment or imposing other constraints upon enforcement, insofar as the same may be constitutionally applied. The United States Bankruptcy Code is not applicable to states. Under Massachusetts law, the Bonds have all of the qualities and incidents of negotiable instruments under the Uniform Commercial Code.

#### **Source of Pledged Funds**

Pledged Funds represent amounts received or to be received by the Commonwealth from 4.86¢ per gallon of the Gasoline Tax plus Surplus 1992 Pledged Funds transferred from time to time to the Trustee from the 1992 Trustee after satisfaction of the debt service requirements and other obligations under the 1992 Trust Agreement. See "Flow of Pledged Funds." The amount of initial Pledged Funds to be deposited under the Trust Agreement and allocable to 4.86¢ per gallon of the Gasoline Tax will be calculated by the Department of Revenue of the Commonwealth (the "Department of Revenue") on a monthly basis by dividing 4.86¢ per gallon by the total rate of the Gasoline Tax (the "Gasoline Tax Rate") then in effect, and multiplying the result by the total amount of the Gasoline Tax collected by the Commonwealth during such month. Surplus 1992 Pledged Funds received by the Trustee from the 1992 Trustee are required to be deposited in the Revenue Account immediately upon receipt. See "Flow of Pledged Funds." For a discussion of the Gasoline Tax, see "COMMONWEALTH GASOLINE TAX."

In order to issue Additional Bonds, the Commonwealth must comply with certain conditions contained in the Trust Agreement, including certain debt service coverage tests. See "Additional Bonds." The Commonwealth may pledge certain additional revenues as security for the Bonds ("Additional Pledged Funds") in order to comply with the conditions to issuing Additional Bonds. Under the Trust Agreement, Additional Pledged Funds may only include revenues required to be expended for transportation purposes by Article 78 of the Articles of Amendment to the Massachusetts Constitution, as amended ("Article 78 Revenues"). Article 78 Revenues are revenues derived from the registration, operation or use of vehicles on public highways or from fuels used for propelling such vehicles, including the Gasoline Tax. See "FINANCING THE COMMONWEALTH HIGHWAY SYSTEM -- Legal Framework For Financing the Highway System; Constitutional Limitations." Under current law, only amounts credited to the Highway Fund may be pledged as security for the Bonds. Although all Article 78 Revenues are not currently credited to the Highway Fund, the Trust Agreement provides that, to the extent subsequently permitted by law, the Commonwealth may pledge all or any portion of Article 78 Revenues as Additional Pledged Funds.

In the event the Commonwealth pledges Additional Pledged Funds composed of either (a) revenues from sources other than the Gasoline Tax, or (b) revenues which have not been collected for 12 consecutive months out of the prior 18 months preceding the issuance of the Additional Bonds, the Trust Agreement requires that the Commonwealth obtain assurances from each rating agency then maintaining a rating on the outstanding Bonds that

such pledge will not adversely affect the ratings on the outstanding Bonds. See "Additional Bonds." The Commonwealth is under no obligation to pledge Additional Pledged Funds, and any such pledge will be made for the benefit of the owners of all outstanding Bonds.

### **Funds and Accounts**

In order to administer the deposit of Pledged Funds related to the Bonds (including the 1996 Bonds), the funds and accounts described below are established and held under the Trust Agreement.

(a) The Trustee shall establish and hold the following funds:

- Debt Service Fund;
- Redemption Fund;
- Debt Service Reserve Fund;
- Bond Related Costs Fund; and
- Rebate Fund.

(b) The State Treasurer has established the following accounts maintained as part of the Infrastructure Fund, which accounts have been deposited with the Trustee:

- Revenue Account; and
- Reserve Account.

Collectively, the above-referenced funds and accounts are sometimes hereinafter referred to as the "Funds and Accounts." The Trust Agreement requires that moneys deposited in the Funds and Accounts be accounted for separately from all other moneys received by the Trustee and shall be held by the Trustee in trust for the owners of the Bonds. The moneys on deposit in the Funds and Accounts may be invested in Permitted Investments as provided for in the Trust Agreement. See "Appendix C -- Summary of Certain Provisions of the Trust Agreement" under the headings "Definitions - Permitted Investments" and "Investments."

Under the Trust Agreement, the Commonwealth has pledged all of the moneys, securities, credit enhancement, if any, and any investment earnings with respect thereto in all Funds and Accounts, other than the Rebate Fund, to the Trustee for the benefit of the owners of the Bonds. However, because the Revenue Account and the Reserve Account are sub-accounts of the Infrastructure Fund, moneys on deposit therein may not be expended without appropriation from the Legislature. The Trust Agreement provides that amounts in the Revenue Account may only be transferred to the foregoing Funds to the extent appropriations with respect to expenditures from such Funds have been made. The Trust Agreement further provides that no amounts may be transferred from the Revenue Account to the Commonwealth for its general purposes unless a sufficient appropriation for Debt Service has been made and the required monthly deposits to the Funds and Accounts have been made. See "Flow of Pledged Funds" and "Appendix C -- Summary of Certain Provisions of the Trust Agreement -- Flow of Funds." Since the first issuance of special obligation revenue bonds payable from the Infrastructure Fund, the Legislature has never failed to make the required appropriation, and the Governor's budget recommendations for fiscal 1997 also provide for the required appropriation of debt service.

### **Flow of Pledged Funds**

The Pledged Funds must be accounted for and deposited in accordance with the terms of the Special Obligation Act and the Trust Agreement. Set forth below is a description of the flow of the Pledged Funds under the Special Obligation Act and the Trust Agreement. For a complete description of the flow of Pledged Funds, see "Appendix C -- Summary of Certain Provisions of the Trust Agreement."

*Commonwealth Highway Fund.* Under the Gasoline Tax Act, upon receipt by the Department of Revenue, approximately 83.6% of the amounts due under the Gasoline Tax (currently approximately 17.56¢ per gallon) is credited to the Commonwealth's Highway Fund. See "COMMONWEALTH GASOLINE TAX -- Crediting of Receipts." In accordance with current law, Pledged Funds are made available to pay Debt Service from the amounts of the Gasoline Tax credited to the Highway Fund, as described below.

*Commonwealth Infrastructure Fund.* Under the Special Obligation Act, the Commonwealth created the Infrastructure Fund as a subfund of the Highway Fund. The Special Obligation Act requires that approximately 39.1% of the portion of Gasoline Tax credited to the Highway Fund (currently approximately 6.86¢ per gallon) be credited to the Infrastructure Fund and utilized in accordance with the Special Obligation Act. Expenditures from the Infrastructure Fund may, upon appropriation by the Legislature, be made for the following purposes: (i) the payment of debt service on any special obligation bonds authorized under the Special Obligation Act; (ii) the maintenance of, or provision for, any reserves, additional security, insurance or other forms of credit enhancement for any special obligation bonds; and (iii) direct expenditures for purposes otherwise permitted for moneys on deposit in the Highway Fund, provided that any such direct expenditures may only be made in compliance with any applicable restrictions contained in any trust or other agreement relating to such special obligation bonds. Under the Special Obligation Act, no more than 20% of the amounts credited to the Infrastructure Fund may be utilized to pay debt service on bonds issued to finance the Central Artery/Third Harbor Tunnel project, or to make direct expenditures on that project. The Commonwealth has covenanted in the Trust Agreement that, unless otherwise authorized by the Legislature, it will not expend moneys credited to the Infrastructure Fund on such expenditures in excess of this limitation. See "Appendix C -- Summary of Certain Provisions of the Trust Agreement -- Particular Covenants of The Commonwealth."

The Special Obligation Act provides that, so long as any special obligation bonds remain outstanding, the Commonwealth shall maintain the Infrastructure Fund and shall not divert any amounts credited thereto from the purposes permitted under the Special Obligation Act. See "Appendix B -- Summary of Certain Provisions of the Special Obligation Act." The Commonwealth may amend the Special Obligation Act, and the Trust Agreement provides that any provision of the Special Obligation Act creating a covenant with the owners of Bonds shall be deemed a covenant under the Trust Agreement only to the extent expressly provided for in, and as limited by, the Trust Agreement. Therefore, if otherwise permitted by law, the Commonwealth may utilize amounts credited to the Infrastructure Fund, other than Pledged Funds, without regard to the terms of the Bonds or the Trust Agreement. See "Appendix C -- Summary of Certain Provisions of the Trust Agreement."

*Revenue Account.* Under the Trust Agreement the State Treasurer has established the Revenue Account as a sub-account of the Infrastructure Fund, which is held by the Trustee and is subject to the pledge of the Trust Agreement. In accordance with the Special Obligation Act, Debt Service is payable from amounts credited to the Revenue Account.

Under the Trust Agreement, on or prior to the eighth business day of each month, the Commissioner of Revenue of the Commonwealth (the "Commissioner of Revenue") must deliver to the Trustee a certificate stating the amount of Pledged Funds received by the Commonwealth and allocable to 4.86¢ per gallon of the Gasoline Tax during the preceding month, which amount must be deposited under the Trust Agreement. The amount of Pledged Funds to be deposited under the Trust Agreement in each month is calculated by the Department of Revenue by dividing 4.86¢ per gallon (or such greater amount of the Gasoline Tax as may be pledged as Additional Pledged Funds) by the total Gasoline Tax Rate then in effect, and multiplying the result by the total amount of the Gasoline Tax collected by the Commonwealth for such month. The 1992 Trust Agreement establishes a similar procedure with respect to the 2¢ per gallon of the Gasoline Tax that constitutes the 1992 Pledged Funds. Immediately upon receipt thereof, the Trustee must deposit in the Revenue Account any Surplus 1992 Pledged Funds received from the 1992 Trustee. The State Treasurer, within two business days of the receipt of the certificate from the Commissioner of Revenue, is required under the Trust Agreement to deposit an amount equal to Pledged Funds collected in the preceding month into the Revenue Account with the Trustee.

The Trust Agreement requires the Secretary of the Executive Office for Administration and Finance (the "Secretary of Administration and Finance") and the State Treasurer, after the adoption of the Commonwealth's

operating budget for a fiscal year, to deliver to the Trustee a certificate stating the amount appropriated for such fiscal year (the "Appropriated Amount") for the payment of each of the following:

- (a) the amount of Debt Service for such fiscal year;
- (b) the amount of any required deposit into the Debt Service Reserve Fund for such fiscal year;
- (c) the amount of any costs relating to the Bonds ("Bond Related Costs") for such fiscal year; and
- (d) the amount of any rebate to the United States Treasury (the "Rebate Requirement") for such fiscal year.

*Disbursements from Revenue Account.* Under the Trust Agreement, on the last business day of each month the Trustee transfers amounts on deposit in the Revenue Account as follows:

- (i) *first*, to the Debt Service Fund, all amounts on deposit in the Revenue Account until the amount on deposit in the Debt Service Fund (including investment earnings) equals the sum of (a) Debt Service due on the next Interest Payment Date and (b) if a principal installment on the Bonds is not due on the next Interest Payment Date, one-half of the principal installment due on the next principal payment date (collectively, the "Debt Service Fund Requirement"); provided, however, that the aggregate amount deposited therein during a fiscal year may not exceed the Appropriated Amount for such fiscal year for such purpose;
- (ii) *second*, to the Debt Service Reserve Fund, an amount equal to the sum of (a) one-thirty-sixth (1/36th) of the Funded Debt Service Reserve Fund Requirement, as defined herein, and (b) any amounts which previously were required to be deposited and for which amounts were not available from the Revenue Account, until the amount on deposit therein (including investment earnings) equals the Funded Debt Service Reserve Fund Requirement; provided, however, that if notice shall have been given to the Trustee pursuant to the Trust Agreement of a change in the amount of the Debt Service Reserve Fund Requirement the foregoing provision shall apply to the amount of the Funded Debt Service Reserve Fund Requirement calculated without regard to such notice and the Trustee shall, in addition, deposit an amount equal to one-twelfth (1/12th) of the difference between the Funded Debt Service Reserve Fund Requirement prior to such notice and the revised Funded Debt Service Reserve Fund Requirement until the amount on deposit therein (including investment earnings) equals the revised Funded Debt Service Reserve Fund Requirement; and provided, further, that the aggregate amount deposited therein during a fiscal year may not exceed the Appropriated Amount for such fiscal year for such purpose;
- (iii) *third*, to the Reserve Account, any amount set forth in (ii) above in excess of the Appropriated Amount for such purpose for such fiscal year; provided, however, that such amounts deposited in the Reserve Account must be transferred to the Debt Service Reserve Fund upon the delivery to the Trustee of a certificate by the Secretary of Administration and Finance and the State Treasurer that an appropriation is then in effect permitting such deposit in the Debt Service Reserve Fund;
- (iv) *fourth*, to the Bond Related Costs Fund, the amount, if any, necessary to pay Bond Related Costs; provided, however, that the aggregate amount deposited therein during a fiscal year may not exceed the Appropriated Amount for such fiscal year for such purpose; and
- (v) *fifth*, to the Rebate Fund, the amount, if any, necessary to pay the Rebate Requirement; provided, however, that the aggregate amount deposited therein during a fiscal year may not exceed the Appropriated Amount for such fiscal year for such purpose.

Under the Trust Agreement, (a) if the Appropriated Amount is not sufficient to fund Debt Service in any fiscal year, then all Pledged Funds remaining on deposit in the Revenue Account after the transfers to the Funds and Accounts described above, must remain on deposit therein until a sufficient appropriation is made; (b) if the

Appropriated Amount is not sufficient to fund the required deposits to the Debt Service Reserve Fund in any fiscal year, the amount of Pledged Funds transferred by the Trustee from the Revenue Account to the Reserve Account must remain on deposit therein until a sufficient appropriation is made as described in (iii) above; and (c) if the Appropriated Amounts are not sufficient to fund the required deposits to the Bond Related Costs Fund and the Rebate Fund, the amount of Pledged Funds necessary to fund such deposits must remain on deposit in the Revenue Account until sufficient appropriations are made. See "Appendix C -- Summary of Certain Provisions of the Trust Agreement -- Flow of Funds."

If there is an Appropriated Amount sufficient to pay Debt Service due in a fiscal year, the balance remaining in the Revenue Account after the deposit of the amounts described above (less any amounts which must be held on deposit therein pending appropriation to fund deposits to the Bond Related Costs Fund and the Rebate Fund) are transferred by the Trustee to the State Treasurer on the last business day of each month and may be applied for any purpose permitted by law, including direct expenditures for purposes otherwise permitted for revenues credited to the Highway Fund. For a discussion of permitted Highway Fund expenditures, see "FINANCING THE COMMONWEALTH HIGHWAY SYSTEM -- Legal Framework for Financing the Highway System; Statutory Framework." See "Appendix C -- Summary of Certain Provisions of the Trust Agreement -- Flow of Funds."

*Disbursements from Debt Service Fund.* The Trustee must pay out of the Debt Service Fund to the respective paying agents for any Bonds (i) on or before each Interest Payment Date the amount required for interest and principal installments payable on such date and (ii) on or before each redemption date for Bonds, the amount required for the payment of interest and redemption price of the Bonds then to be redeemed. See "Appendix C -- Summary of Certain Provisions of the Trust Agreement -- Debt Service Fund."

## **Bond Insurance**

The Underwriters (as defined herein) of the 1996 Bonds have contracted with AMBAC Indemnity for the issuance of a financial guaranty insurance policy to secure the 1996 Bonds maturing on June 1, 2002 through June 1, 2014 (collectively, the "Insured Bonds"). The issuance of such policy is not a condition to the issuance and delivery of the 1996 Bonds by the Commonwealth to the Underwriters. The following information has been furnished by AMBAC Indemnity for use in this Official Statement. Reference is made to Appendix E for a specimen of AMBAC Indemnity's policy.

### *Payments Under Bond Insurance Policy*

AMBAC Indemnity has made a commitment to issue a municipal bond insurance policy (the "Policy") relating to the Insured Bonds effective as of the date of issuance of the Insured Bonds. Under the terms of the Policy, AMBAC Indemnity will pay to the United States Trust Company of New York, in New York, New York, or any successor thereto (the "Insurance Trustee") that portion of the principal of and interest on the Insured Bonds which shall become Due for Payment but shall be unpaid by reason of Nonpayment (as such terms are defined in the Policy) by the Commonwealth. AMBAC Indemnity will make such payments to the Insurance Trustee on the later of the date on which such principal and interest becomes Due for Payment or within one business day following the date on which AMBAC Indemnity shall have received notice of Nonpayment from the Trustee. The insurance will extend for the term of the Insured Bonds and, once issued, cannot be canceled by AMBAC Indemnity.

The Policy will insure payment only on stated maturity dates and on mandatory sinking fund installment dates, in the case of principal, and on stated dates for payment, in the case of interest. If the Insured Bonds become subject to mandatory redemption and insufficient funds are available for redemption of all outstanding Insured Bonds, AMBAC Indemnity will remain obligated to pay principal of and interest on outstanding Insured Bonds on the originally scheduled interest and principal payment dates including mandatory sinking fund redemption dates. In the event of any acceleration of the principal of the Insured Bonds, the insured payments will be made at such times and in such amounts as would have been made had there not been an acceleration.

In the event the Trustee has notice that any payment of principal of or interest on Insured Bonds which has become Due for Payment and which is made to a Bondholder by or on behalf of the Commonwealth has been deemed a preferential transfer and theretofore recovered from its registered owner pursuant to the United States

Bankruptcy Code in accordance with a final, nonappealable order of a court or competent jurisdiction, such registered owner will be entitled to payment from AMBAC Indemnity to the extent of such recovery if sufficient funds are not otherwise available.

The Policy does not insure any risk other than Nonpayment, as defined in the Policy. Specifically, the Policy does not cover:

1. payment on acceleration, as a result of a call for redemption (other than mandatory sinking fund redemption) or as a result of any other advancement of maturity.
2. payment of any redemption, prepayment or acceleration premium.
3. nonpayment of principal or interest caused by the insolvency or negligence of any Trustee or Paying Agent, if any.

If it becomes necessary to call upon the Policy, payment of principal requires surrender of Insured Bonds to the Insurance Trustee together with an appropriate instrument of assignment so as to permit ownership of such Insured Bonds to be registered in the name of AMBAC Indemnity to the extent of the payment under the Policy. Payment of interest pursuant to the Policy requires proof of Bondholder entitlement to interest payments and an appropriate assignment of the Bondholder's right to payment to AMBAC Indemnity.

Upon payment of the insurance benefits, AMBAC Indemnity will become the owner of the Insured Bonds, appurtenant coupon, if any, or right to payment of principal or interest on such Insured Bond and will be fully subrogated to the surrendering Bondholder's rights to payment.

#### *AMBAC Indemnity*

AMBAC Indemnity is a Wisconsin-domiciled stock insurance corporation regulated by the Office of the Commissioner of Insurance of the State of Wisconsin and licensed to do business in 50 states, the District of Columbia, the Territory of Guam and the Commonwealth of Puerto Rico, with admitted assets of approximately \$2,439,000,000 (unaudited) and statutory capital of approximately \$1,378,000,000 (unaudited) as of December 31, 1995. Statutory capital consists of AMBAC Indemnity's policyholders' surplus and statutory contingency reserve. AMBAC Indemnity is a wholly owned subsidiary of AMBAC Inc., a 100% publicly held company. Standard & Poor's Ratings Services, a division of The McGraw-Hill Companies, Inc., Moody's Investors Service and Fitch Investors Service, L.P. have each assigned a triple-A claims-paying ability rating to AMBAC Indemnity.

AMBAC Indemnity has entered into pro rata reinsurance agreements under which a percentage of the insurance underwritten pursuant to certain municipal bond insurance programs of AMBAC Indemnity has been and will be assumed by a number of foreign and domestic unaffiliated reinsurers.

AMBAC Indemnity has obtained a ruling from the Internal Revenue Service to the effect that the insuring of a obligation by AMBAC Indemnity will not affect the treatment for federal income tax purposes of interest on such obligation and that insurance proceeds representing maturing interest paid by AMBAC Indemnity under policy provisions substantially identical to those contained in its municipal bond insurance policy shall be treated for federal income tax purposes in the same manner as if such payments were made by the issuer of the Insured Bonds.

AMBAC Indemnity makes no representation regarding the 1996 Bonds or the advisability of investing in the 1996 Bonds and makes no representation regarding, nor has it participated in the preparation of, the Official Statement other than the information supplied by AMBAC Indemnity and presented under the heading entitled "AUTHORIZATION, SECURITY AND SOURCES OF PAYMENT FOR THE BONDS - Bond Insurance."

#### *Available Information*

The parent company of AMBAC Indemnity, AMBAC, Inc. (the "Company"), is subject to the informational reporting requirements of the Securities Exchange Act of 1934, as amended (the "Exchange Act"), and in accordance therewith files reports, proxy statements and other information with the Securities and Exchange Commission (the "Commission"). Such reports, proxy statements and other information may be inspected and



copied at the public reference facilities maintained by the Commission at 450 Fifth Street, N.W., Washington, D.C. 20549 and at the Commission's regional offices at 7 World Trade Center, New York, New York 10048 and Northwest Atrium Center, 500 West Madison Street, Suite 1400, Chicago, Illinois 60661. Copies of such material can be obtained from the public reference section of the Commission at 450 Fifth Street, N.W., Washington, D.C. 20549 at 450 Fifth Street, N.W., Washington, D.C. 20549 at prescribed rates. In addition, the aforementioned material may also be inspected at the offices of the New York Stock Exchange, Inc. (the "NYSE") at 20 Broad Street, New York, New York 10005. The Company's common stock is listed on the NYSE.

Copies of AMBAC Indemnity's financial statements prepared in accordance with statutory accounting standards are available from AMBAC Indemnity. The address of AMBAC Indemnity's administrative offices and its telephone number are One State Street Plaza, 17th Floor, New York, New York 10004 and (212) 668-0340.

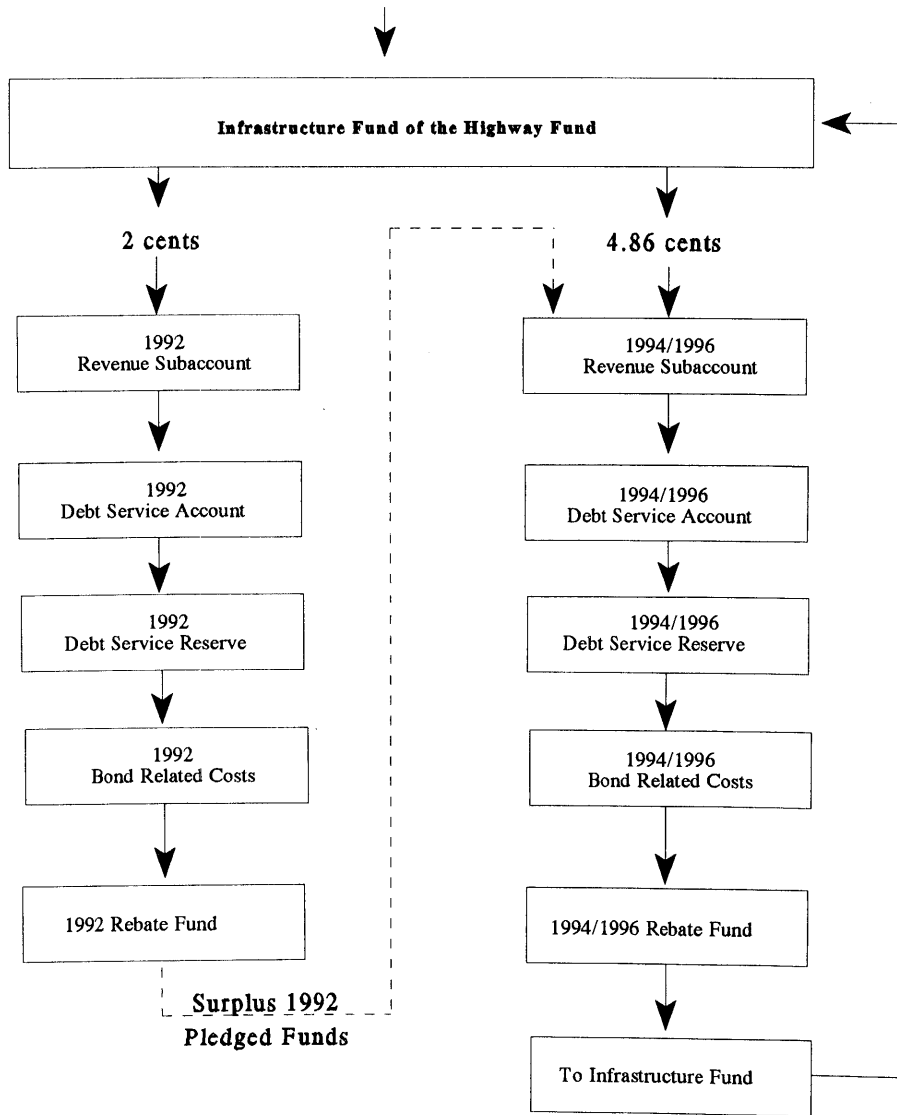
The following documents filed by the Company with the Commission (File No. 1-10777) are incorporated by reference in this Official Statement:

- (1) The Company's Annual Report on Form 10-K for the fiscal year ended December 31, 1994, filed with the Commission on March 31, 1995;
- (2) The Company's Quarterly Report on Form 10-Q for the quarter ended March 31, 1995;
- (3) The Company's Quarterly Report on Form 10-Q for the quarter ended June 30, 1995;
- (4) The Company's Quarterly Report on Form 10-Q for the quarter ended September 30, 1995, filed with the Commission on November 14, 1995;
- (5) The Company's Current Report on Form 8-K, filed with the Commission on July 18, 1995; and
- (6) The Company's Current Report on Form 8-K dated January 31, 1996.

All documents subsequently filed by the Company pursuant to the requirements of the Exchange Act after the date of this Official Statement will be available for inspection in the same manner as described above.

**FLOW OF PLEDGED FUNDS**

6.86 cents of Gasoline Tax



The 1992 Bonds are currently outstanding in the aggregate principal amount of \$103,770,000 and mature on June 1 in the years 1998 through 2013. Through fiscal 1997, interest only is payable on the 1992 Bonds in the annual amount of \$6,231,805. Commencing in fiscal 1998, total principal and interest requirements with respect to the 1992 Bonds are approximately \$10.3 million per year. Approximately 0.42¢ of the 2¢ per gallon of the Gasoline Tax constituting 1992 Pledged Funds collected during fiscal 1995 was required to pay such debt service obligations with respect to the 1992 Bonds. Approximately 1.58¢ per gallon of the Gasoline Tax was surplus in fiscal 1995. The actual amount of Surplus 1992 Pledged Funds to be available for transfer to the Trustee from time to time hereafter will depend upon the amount of actual Gasoline Tax receipts while the 1992 Bonds remain outstanding. Upon the discharge and release of the lien of the 1992 Trust Agreement, the full amount of the 2¢ per gallon of the Gasoline Tax pledged to the 1992 Bonds and any other amounts then constituting 1992 Pledged Funds will become Pledged Funds under the Trust Agreement.

For a more complete discussion of the flow of Pledged Funds, including the required deposits from the Infrastructure Fund to the Funds and Accounts, see "Appendix C -- Summary of Certain Provisions of the Trust Agreement."

### **Debt Service Reserve Fund**

Under the Trust Agreement, the Debt Service Reserve Fund Requirement is defined to be the least of (i) 10% of the original principal amount of all Series of Bonds Outstanding, subject to adjustment as provided in the Trust Agreement with respect to original issue discount, (ii) 125% of the average annual aggregate amount of Debt Service (calculated as provided in the Trust Agreement) due in any fiscal year on all Bonds Outstanding or (iii) 50% (or in the event the Commonwealth fails to maintain a Debt Service coverage ratio of at least 2.00 as set forth in the Trust Agreement, 100%) of the maximum amount of Debt Service (calculated as provided in the Trust Agreement) due in any fiscal year. The Funded Debt Service Reserve Requirement is defined in the Trust Agreement as the Debt Service Reserve Fund Requirement less the stated and unpaid amount of all Reserve Credit Facilities as defined in the Trust Agreement. See "Appendix C -- Summary of Certain Provisions of the Trust Agreement -- Definitions." The Trust Agreement provides that once an amount equal to the Debt Service Fund Requirement has been transferred from the Revenue Account to the Debt Service Fund, and provided that sufficient amounts have been appropriated therefor, the Trustee must transfer, on the last business day of each month, amounts from the Revenue Account into the Debt Service Reserve Fund equal to one-thirty-sixth (1/36th) of the Funded Debt Service Reserve Fund Requirement, plus any amounts not funded in prior months, until the amount on deposit therein (including investment earnings) equals the Funded Debt Service Reserve Fund Requirement. In the event that a sufficient appropriation is not made for this purpose, the amounts otherwise to be transferred to the Debt Service Reserve Fund must be transferred to the Reserve Account and held therein until a sufficient appropriation is made. See "Flow of Pledged Funds" and "Appendix C -- Summary of Certain Provisions of the Trust Agreement -- Debt Service Reserve Fund."

If the amounts on deposit and available in the Debt Service Fund, the Bond Related Costs Fund or the Redemption Fund are insufficient to pay the Debt Service then due, the Trustee must withdraw from the Debt Service Reserve Fund and deposit in the Debt Service Fund the amount necessary to meet the deficiency. If the amounts transferred from the Debt Service Reserve Fund are insufficient to pay such deficiency, the Trustee must withdraw from the Reserve Account the amount necessary to meet the balance of such deficiency; provided, however, that the aggregate of such amounts deposited into the Debt Service Fund from the Reserve Account may not in any fiscal year, together with all other amounts deposited in the Debt Service Fund (other than from the Debt Service Reserve Fund) during such fiscal year, exceed the Appropriated Amount for Debt Service for such fiscal year.

*Reserve Credit Facilities.* The Trust Agreement authorizes the Commonwealth to obtain Reserve Credit Facilities for the purpose of satisfying the Debt Service Reserve Fund Requirement. See "Appendix C -- Summary of Certain Provisions of the Trust Agreement -- Reserve Credit Facilities." AMBAC Indemnity has issued a surety bond in the initial stated amount of \$12,608,518.75 with respect to the 1994 Bonds (the "1994 Debt Service Reserve Fund Surety Bond") and is expected to issue a surety bond in the initial stated amount of \$6,170,462.50 with respect to the 1996 Bonds (the "1996 Debt Service Reserve Fund Surety Bond", and together with the 1994 Debt Service Reserve Fund Surety Bond, the "Debt Service Reserve Fund Surety Bonds") which amounts together represent the

Debt Service Reserve Fund Requirement relating to the 1994 Bonds and the 1996 Bonds. The premium on the 1996 Debt Service Reserve Fund Surety Bond is to be fully paid at or prior to the issuance and delivery of the 1996 Bonds. The Debt Service Reserve Fund Surety Bonds provide that upon the later of (i) one (1) day after receipt by AMBAC Indemnity of a demand for payment executed by the Trustee certifying that provision for the payment of principal of or interest on the 1994 Bonds or the 1996 Bonds, as applicable, when due has not been made or (ii) the Interest Payment Date specified in the demand for payment submitted to AMBAC Indemnity, AMBAC Indemnity will promptly deposit funds with the Trustee sufficient to enable the Trustee to make such payments due on the 1994 Bonds or the 1996 Bonds, as applicable, but in no event exceeding the lesser of \$18,778,981.25 or the Debt Service Reserve Fund Requirement (the "Surety Bond Coverage").

Pursuant to the terms of the Debt Service Reserve Fund Surety Bonds, the Surety Bond Coverage is automatically reduced to the extent of each payment made by AMBAC Indemnity under the terms of the Debt Service Reserve Fund Surety Bonds and the Commonwealth is required to reimburse AMBAC Indemnity for any draws under the terms of the Debt Service Reserve Fund Surety Bonds with interest at a market rate from amounts deposited into the Debt Service Reserve Fund as provided in the Trust Agreement and described above. Upon such reimbursement, the Debt Service Reserve Fund Surety Bonds will be reinstated to the extent of each principal reimbursement up to but not exceeding the Surety Bond Coverage. The reimbursement obligation of the Commonwealth is subordinate to the Commonwealth's obligations with respect to the Bonds.

In the event the amount on deposit, or credited to the Debt Service Reserve Fund, exceeds the amount of the Debt Service Reserve Fund Surety Bonds, any draw on the Debt Service Reserve Fund Surety Bonds shall be made only after all the funds in the Debt Service Reserve Fund have been expended. In the event that the amount on deposit in, or credited to, the Debt Service Reserve Fund, in addition to the amount available under the Debt Service Reserve Fund Surety Bonds, includes amounts available under a letter of credit, insurance policy, surety bond or other such funding instrument (the "Additional Funding Instrument"), draws on the Debt Service Reserve Fund Surety Bonds and the Additional Funding Instrument shall be made on a pro rata basis to fund the insufficiency. The Trust Agreement provides that the Debt Service Reserve Fund shall be replenished in the following priority: (i) principal and interest on the Debt Service Reserve Fund Surety Bonds and on the Additional Funding Instrument shall be paid from first available Revenues on a pro rata basis; (ii) after all such amounts are paid in full, amounts necessary to fund the Debt Service Reserve Fund to the required level, after taking into account the amounts available under the Debt Service Reserve Fund Surety Bonds and the Additional Funding Instrument shall be deposited from next available Revenues.

The Debt Service Reserve Fund Surety Bonds do not insure against nonpayment caused by the insolvency or negligence of the Trustee.

In the event that the 1996 Debt Service Reserve Fund Surety Bond is not issued at or prior to the delivery of the 1996 Bonds, the provisions of the Trust Agreement relating to the funding of the Debt Service Reserve Fund which are described above shall govern. Under the terms of the Trust Agreement, the Commonwealth may terminate the Debt Service Reserve Fund Surety Bonds provided that it deposits into the Debt Service Reserve Fund the amount required to have been on deposit therein had the Debt Service Reserve Fund Surety Bonds not been issued. Subsequent to the termination of the Debt Service Reserve Fund Surety Bonds, the provisions of the Trust Agreement relating to the funding of the Debt Service Reserve Fund which are described above shall govern.

For certain information concerning AMBAC Indemnity, see "AUTHORIZATION, SECURITY AND SOURCES OF PAYMENT FOR THE BONDS - Bond Insurance - *AMBAC Indemnity*."

### **Additional Bonds**

Pursuant to the Trust Agreement, one or more series of Additional Bonds may be issued for the purpose of (i) paying all or a portion of the cost of any project for which special obligation bonds may be issued under the Special Obligation Act, including the refunding of any such special obligation bonds, (ii) the making of deposits in the Debt Service Fund and the Debt Service Reserve Fund, (iii) the payment of the costs of issuance of such *Additional Bonds*, (iv) the payment of the principal of and interest and premium, if any, on notes issued in

anticipation of such Additional Bonds in accordance with the Trust Agreement or (v) any combination of the foregoing.

A series of Additional Bonds may be issued only upon receipt by the Trustee of, among other things:

- (i) A certificate of the State Treasurer or his or her designee stating that, as of the delivery of such Additional Bonds and application of their proceeds, no Event of Default, as described in the Trust Agreement, will have happened and then will be continuing;
- (ii) A certificate or certificates of the Commissioner of Revenue or the Comptroller setting forth the amount of Pledged Funds received by the Commonwealth for each month for the 18-month period ending with the last full month immediately preceding the issuance of Additional Bonds;
- (iii) If the Commonwealth is not pledging any Additional Pledged Funds, then a certificate of the State Treasurer showing that the amount of Pledged Funds for any 12 consecutive months during the 18-month period described in (ii) above was not less than 200% of the maximum aggregate Adjusted Bond Debt Service Requirement (as defined in the Trust Agreement, see "Appendix C -Summaries of Certain Provisions of the Trust Agreement -- Definitions") due in the then current or any future fiscal year on outstanding Bonds, including the Additional Bonds;
- (iv) If the Commonwealth is pledging Additional Pledged Funds, one or more of the following certificates: (A) if the Additional Pledged Funds shall have been collected by the Commonwealth for at least 12 consecutive months of the 18 month period described in (ii) above, a certificate of the State Treasurer showing that the amount of Pledged Funds and Additional Pledged Funds, for any 12 consecutive months during such 18 month period was not less than 200% of the maximum annual Adjusted Bond Debt Service Requirement during the then current fiscal year or any future fiscal year on all Bonds outstanding, including the Additional Bonds; (B) if the Additional Pledged Funds have not been collected by the Commonwealth during at least 12 consecutive months during such 18 month period, a certificate of the State Treasurer showing that the amount of Pledged Funds and Additional Pledged Funds projected to be received by the Commonwealth during the first full fiscal year immediately following the issuance of the Additional Bonds will not be less than 200% of the maximum aggregate Adjusted Bond Debt Service Requirement due in the then current or any future fiscal year on Bonds outstanding, including the Additional Bonds; and (C) if any Additional Pledged Funds are derived from revenues other than the Gasoline Tax, or a certificate is delivered under (B) above, then a certificate from each rating agency which is then maintaining an outstanding rating on the Bonds, stating that the issuance of such Additional Bonds shall not adversely affect their rating on the Bonds then outstanding; and
- (v) A certificate of the Secretary of Administration and Finance that the amount of such Additional Bonds is within the limitations established by the Capital Spending Plan of the Commonwealth in effect as of the date of issuance of such Additional Bonds.

The 1996 Bonds are being issued pursuant to (iii) above.

Additional Bonds may be issued at any time to refund in whole or in part any outstanding Bonds, provided that the State Treasurer, certifies that the Adjusted Bond Debt Service Requirement on any Bonds to be outstanding immediately after the issuance of the refunding Additional Bonds is not, for each fiscal year during which Bonds are scheduled to be outstanding, greater than the Adjusted Bond Debt Service Requirement by fiscal year on all Bonds outstanding immediately prior to the issuance of the refunding Additional Bonds. If the Commonwealth cannot satisfy the requirement of the preceding sentence, the Commonwealth may nevertheless issue refunding Additional Bonds by complying with the tests relating to the issuance of Additional Bonds for non-refunding purposes.

For a more complete description of the requirements under the Trust Agreement for the issuance of Additional Bonds, see "Appendix C -- Summary of Certain Provisions of the Trust Agreement -- Authorization and Issuance of Additional Bonds."

Additional Bonds may be issued as Variable Rate Bonds or Tender Bonds. The Commonwealth has covenanted in the Trust Agreement that (a) it will not issue Variable Rate Bonds if, upon such issuance, the aggregate principal amount of Variable Rate Bonds then outstanding exceeds 15% of the aggregate principal amount of all Bonds outstanding; and (b) it will only issue Tender Bonds secured by a Liquidity Facility, and the provider of the Liquidity Facility must have a rating on its short term obligations within the highest rating category from each rating agency then maintaining a rating on Bonds outstanding. See "Appendix C -- Summary of Certain Provisions of the Trust Agreement -- Authorization of Bonds."

### **Subordinated and Other Indebtedness**

The Commonwealth may issue bonds, notes or other evidences of indebtedness (other than Additional Bonds) which are payable out of, or secured by a pledge of Pledged Funds, provided that such bonds, notes or evidences of indebtedness are expressly subordinate to the obligations of the Commonwealth under the Trust Agreement, including the Bonds. In addition, the Commonwealth may issue bonds, notes or other evidences of indebtedness (other than Additional Bonds) which are payable out of, or secured by a pledge of an additional portion of the Gasoline Tax or other Article 78 Revenues, to the extent such portions of the Gasoline Tax or Article 78 Revenues do not constitute Pledged Funds. See "Appendix C -- Summary of Certain Provisions of the Trust Agreement -- Creation of Liens; Other Indebtedness."

### **Commonwealth Covenants**

Under the Trust Agreement, the Commonwealth has covenanted with the owners of the Bonds that so long as any Bonds remain outstanding (i) that it shall at all times maintain the portion of the Gasoline Tax credited to the Highway Fund at a rate of not less than 6.86¢ per gallon (which amount represents the 2¢ per gallon pledged to the 1992 Bonds under the 1992 Trust Agreement and the 4.86¢ pledged to the Bonds under the Trust Agreement); (ii) that it shall not limit or alter the rights vested in the Commonwealth to collect Pledged Funds, including the Gasoline Tax and any other Article 78 Revenues which may subsequently be pledged as Additional Pledged Funds, and to deposit such amounts as provided in the Trust Agreement; and (iii) that it shall not impair the rights and remedies of the Trustee and the owners of the Bonds under the Trust Agreement with respect to Pledged Funds.

The Special Obligation Act creates additional covenants with the owners of Bonds. However, the Commonwealth may amend the Special Obligation Act, and the Trust Agreement provides that any provision of the Special Obligation Act creating a covenant with the owners of the Bonds shall be deemed a covenant under the Trust Agreement only to the extent expressly provided for in and as limited by the Trust Agreement. See "Appendix C -- Summary of Certain Provisions of the Trust Agreement -- Particular Covenants of the Commonwealth."

### **Remedies of Owners of Bonds**

The Trust Agreement sets forth the Events of Default relating to the Bonds, which include failure to pay Debt Service when due or failure to perform the covenants, agreements and conditions contained in the Trust Agreement which relate to the maintenance of the Gasoline Tax Rate, the limitation or alteration of the rights of the Commonwealth to collect and deposit Pledged Funds and the impairment of the rights and remedies of the owners of the Bonds.

Under the Trust Agreement, the Commonwealth has covenanted that, upon the occurrence of any Event of Default (which Event of Default has not been remedied), and upon demand by the Trustee, it shall pay over to the Trustee, to the extent permitted by law, any Pledged Funds not otherwise held by the Trustee in a Fund or Account. The Trust Agreement provides that upon the occurrence of an Event of Default, the Trustee may proceed either at law or in equity to protect and enforce the rights of the owners of the Bonds under the terms of the Trust Agreement or the laws of the Commonwealth. The Trust Agreement also provides that the owners of a majority in aggregate principal amount of the Bonds then outstanding may direct the time, method and place of any

proceeding for any remedy available to the Trustee, unless the Trustee determines that such direction would subject it to personal liability or be unjustly prejudicial to the owners not parties to such direction.

The Trust Agreement provides that neither the Trustee nor the owners of the Bonds shall have any right to accelerate the principal of or interest on the Bonds.

If an Event of Default has occurred, no owner of a Bond shall have any right to institute any suit, action or proceeding in equity or at law to exercise any remedy or otherwise take action to enforce the terms of the Trust Agreement unless the owners of at least 25% in aggregate principal amount of the Bonds then outstanding have requested the Trustee to act, and have afforded the Trustee adequate security or indemnity against the Trustee's costs, expenses and liabilities and the Trustee shall not have complied with such request within a reasonable time.

For a more complete description of the remedies available to the owners of the Bonds, see "Appendix C -- Summary of Certain Provisions of the Trust Agreement -- Events of Default."

The remedies available to the Bondowners upon the occurrence of an Event of Default are limited and are in many respects dependent upon judicial actions which are often subject to discretion and delay.

### COMMONWEALTH GASOLINE TAX

The following is a summary of the Commonwealth's Gasoline Tax. This summary does not purport to be complete and, accordingly, is qualified by reference to Chapter 64A of the Massachusetts General Laws, the Gasoline Tax Act. The Legislature has altered and may in the future alter the Gasoline Tax Act. See "1990 Legislation."

Pledged Funds include 4.86¢ of the Gasoline Tax, calculated by the Department of Revenue on a monthly basis by dividing 4.86¢ per gallon by the total Gasoline Tax Rate then in effect and multiplying the result by the total amount of the Gasoline Tax collected by the Commonwealth during such month plus the Surplus 1992 Pledged Funds transferred from time to time to the Trustee from the 1992 Trustee. See "AUTHORIZATION, SECURITY AND SOURCES OF PAYMENT FOR THE BONDS -- Source of Pledged Funds" and "Flow of Pledged Funds."

#### General

The Commonwealth has imposed a tax on fuel since 1928. Fuel, as defined in the Gasoline Tax Act, includes all products commonly or commercially known as gasoline and any liquid prepared, advertised or offered for sale in the Commonwealth and commonly and commercially used as fuel in internal combustion engines ("Gasoline"). The term Gasoline does not include diesel fuel, which is taxed as a "special fuel" under Chapter 64E of the Massachusetts General Laws. See "FINANCING THE COMMONWEALTH HIGHWAY SYSTEM -- Legal Framework for Financing the Highway System." The Gasoline Tax Act also imposes a tax on fuel sold for use in non-jet propelled aircraft ("Aviation Fuel"). Tax revenues derived from the sale of Aviation Fuel under the Gasoline Tax Act are not included within the definition of Gasoline Tax or Pledged Funds.

#### Gasoline Tax Rate

Under the Gasoline Tax Act, the Gasoline Tax Rate is the greater of 21¢ per gallon or 19.1% of the average wholesale selling price of Gasoline as measured on a quarterly basis. The average wholesale selling price is defined by regulation as the weighted average, rounded to the nearest whole cent, of the per gallon wholesale selling price of various grades and types of Gasoline for the preceding quarter. The average wholesale selling price does not include state or federal taxes. The Commissioner of Revenue is required to announce, on or before the last day of March, June, September and December, the average wholesale selling price per gallon of Gasoline for the preceding calendar quarter, which will serve as a basis for determining the Gasoline Tax Rate for the succeeding calendar quarter. Gasoline is currently taxed at the statutory minimum rate of 21¢ per gallon.

**Comparison of Gasoline Tax Rates  
for Selected Northeastern States**

The table below lists gasoline tax rates effective as of June 30, 1995, exclusive of local taxes, license and inspection fees of selected northeastern states.

Connecticut . . . . .	33.0¢
Maine . . . . .	19.0
Massachusetts . . . . .	21.0
New Hampshire . . . . .	18.0
New Jersey . . . . .	10.5
New York . . . . .	8.0
Rhode Island . . . . .	28.0
Vermont . . . . .	16.0

SOURCE: Research Institute of America — State and Local Taxes Weekly.

**Gasoline Tax Collection Procedure**

Anyone qualified to do business in the Commonwealth who produces, refines, manufactures or compounds Gasoline or operates a port or pipeline terminal, as well as importers and exporters of Gasoline (collectively referred to as "Distributors"), must file Gasoline Tax returns with the Commissioner of Revenue by the twentieth day of each month. Distributors must keep complete and accurate records of all sales of Gasoline including the name and address of the purchaser, the place and date of delivery, the gross receipts and number of gallons for each type of Gasoline sold, and a complete and accurate record of the number of gallons imported, produced, refined, manufactured, compounded or exported. Purchasers of Gasoline pay the Gasoline Tax to a Distributor when they purchase Gasoline. Each Distributor is required to pay to the Commissioner of Revenue, simultaneously with the filing of a Gasoline Tax return, the Gasoline Tax on each taxable gallon of Gasoline sold by him during the month covered by the return. There are currently fewer than 250 Distributors who file Gasoline Tax returns with the Commissioner of Revenue.

**Crediting of Receipts**

Gasoline Tax receipts, net of refunds and abatements, are credited to several budgeted funds of the Commonwealth. Fifteen percent of the Gasoline Tax revenues are credited to the General Fund to be used solely for mass transportation purposes. One and four-tenths percent (1.4%) of the receipts are credited to certain environmental budgeted funds. The remaining 83.6% (currently 17.56¢) of Gasoline Tax receipts are credited to the Highway Fund in two components. Fifteen percent of the Gasoline Tax receipts are credited to the Highway Fund for the sole purpose, subject to appropriation, of reimbursing municipalities for costs incurred in constructing, maintaining and policing streets and roads. Sixty-eight and six-tenths percent (68.6%) of Gasoline Tax receipts are credited to the Highway Fund for general Highway Fund purposes, of which, 47.62% (currently 6.86¢ per gallon) is credited to the Infrastructure Fund. See "FINANCING THE COMMONWEALTH HIGHWAY SYSTEM -- Legal Framework for Financing the Commonwealth Highway System; Statutory Framework" and "1990 Legislation."

**Refunds and Abatements from Gasoline Tax**

Other than (1) sales between licensed Massachusetts Distributors, (2) sales by a licensed Massachusetts Distributor to a licensed distributor of another state whereby the entire quantity purchased is exported out of the Commonwealth, (3) sales to the federal government, (4) sales to foreign embassies, (5) sales to certain transportation authorities, and (6) sales constituting foreign or interstate commerce, except where permitted by the Constitution and laws of the United States, all of which are tax-free sales, all purchases of Gasoline within the Commonwealth are subject to the Gasoline Tax. Persons who pay the Gasoline Tax on Gasoline which is (a) consumed other than on highways, (b) transferred into another state in which an additional excise tax is paid, (c) consumed on any turnpike constructed by the Massachusetts Turnpike Authority, (d) used in watercraft, and (e) used in qualified buses on authorized routes, may apply for a refund for the amount of Gasoline Tax paid on



such Gasoline. A person applying for a refund must supply the original invoices for the purchase of such Gasoline and attest, by affidavit filed with the Commissioner of Revenue, that the Gasoline was consumed for an exempt purpose. Persons engaged in the business of farming may also apply for a refund of the amount of Gasoline Tax paid on Gasoline for which they would be entitled to a refund of the federal gasoline tax paid pursuant to Section 6420 of the Federal Internal Revenue Code. The Department of Revenue estimates that, on average, less than .5% of annual Gasoline Tax receipts are refunded or abated.

### **1990 Legislation**

During the 1990 legislative session, a two-stage increase in the Commonwealth's Gasoline Tax Rate was enacted. The first stage of this increase became effective on July 28, 1990 and raised the Gasoline Tax Rate to a minimum of 17¢ per gallon. The second stage of the increase became effective on January 1, 1991 and raised the Gasoline Tax Rate to a minimum of 21¢ per gallon. Prior to 1990, the last increase in the Gasoline Tax Rate had been enacted in 1983, when the Gasoline Tax Rate was adjusted to provide for a statutory minimum rate of 11¢ per gallon.

The Legislature has previously altered and may in the future alter (1) the imposition of the Gasoline Tax on Gasoline, including its imposition on different or alternative fuels; (2) the Gasoline Tax Rate; (3) the allocation of Gasoline Tax receipts between the various Commonwealth operating funds, including the Highway Fund and General Fund, and (4) the distribution of Gasoline Tax receipts to cities, towns and counties. The authority of the Legislature to make such changes in Gasoline Tax, the Gasoline Tax Rate and the allocation and use of Gasoline Tax receipts is subject to the requirement of the Massachusetts Constitution that amounts representing Article 78 Revenues, including Gasoline Tax receipts, may only be used for highway or mass transportation purposes including, but not limited to, paying debt service on Commonwealth general obligation highway bonds and any special obligation bonds issued under the Special Obligation Act.

The Legislature's right to make such changes is further restricted by the Trust Agreement in which the Commonwealth has covenanted with the owners of the Bonds to at all times maintain the portion of Gasoline Tax credited to the Highway Fund at a rate of not less than 6.86¢ per gallon (or at such higher rate as may be pledged as Additional Pledged Funds), which amount represents the 2¢ per gallon of the Gasoline Tax pledged to the 1992 Bonds under the 1992 Trust Agreement and the 4.86¢ per gallon of the Gasoline Tax pledged to the Bonds under the Trust Agreement, and not in any way to impair the rights and remedies of said owners under the Trust Agreement.

### **Historical Information Regarding Gasoline Tax**

The level of Gasoline Tax receipts are directly related to the consumption of gasoline in the Commonwealth. Future consumption of gasoline may be affected by many factors beyond the control of the Commonwealth including, but not limited to, the level of employment, the price of gasoline, the fuel efficiency of motor vehicles, and the availability of alternative fuels.

The following tables set forth certain information regarding historical gasoline sales and collections of the Gasoline Tax.

## HISTORICAL GASOLINE SALES

Fiscal Year	Average Price of Gasoline <sup>(1)</sup>	Gasoline Consumed (millions of gallons) <sup>(2)</sup>	Percentage Change	Non-Agricultural Employment (thousands) <sup>(3)</sup>	Percentage Change
1995	\$1.180	2,441	1.84%	2,943	2.55%
1994	1.137	2,397	0.93%	2,870	2.09%
1993	1.241	2,375	0.59%	2,811	0.55%
1992	1.268	2,361	-4.53%	2,796	-3.46%
1991	1.322	2,473	-0.72%	2,896	-5.12%
1990	1.113	2,491	-0.12%	3,052	-2.72%
1989	1.026	2,494	2.51%	3,138	1.09%
1988	0.996	2,433	2.40%	3,104	2.69%
1987	0.879	2,376	1.89%	3,022	2.45%
1986	1.148	2,332	2.96%	2,950	1.97%

SOURCES: "Average Price of Gasoline," Bureau of Labor Statistics. "Gasoline Consumed," Department of Revenue, Office of Tax Policy Analysis. "Non-Agricultural Employment," Department of Employment and Training.

- (1) Weighted average retail price of a gallon of all grades of gasoline during each fiscal year, including all applicable taxes.
- (2) Net of tax-free gallons. See "Refunds and Abatements from Gasoline Tax."
- (3) Seasonally adjusted. Calculated as fiscal year average of monthly employment.

For the first four months of fiscal 1996, the amount of gasoline consumed increased approximately 2.77% as compared to the comparable period in fiscal 1995. The average monthly non-agricultural employment for the first four months of fiscal 1996 is estimated to be 2.988 million persons, which represents a 2.50% increase as compared to the comparable period in fiscal 1995.

**HISTORICAL COLLECTION OF GASOLINE TAX**  
**Historical Annual Collection of Gasoline Tax**

<u>Fiscal Year</u>	<u>Average Gasoline Tax Rate<sup>(1)</sup></u>	<u>Gasoline Tax Receipts (in thousands)<sup>(2)</sup></u>	<u>Percentage Change</u>	<u>One Cent of Gasoline Tax (in thousands)</u>	<u>Percentage Change</u>
1995	\$.210	\$513,462	2.08%	\$24,451	2.08%
1994	.210	503,010	(0.02)	23,953	(0.02)
1993	.210	503,121	2.82	23,958	2.82
1992	.210	489,307 <sup>(3)</sup>	16.76 <sup>(3)</sup>	23,300	(1.59)
1991	.177	419,065 <sup>(4)</sup>	54.60 <sup>(4)</sup>	23,676	(3.92)
1990	.110	271,065	(1.41)	24,642	(1.41)
1989	.110	274,950	0.36	24,995	0.36
1988	.110	273,953	2.29	24,905	2.29
1987	.110	267,825	2.42	24,348	3.35
1986	.110	261,509	1.85	23,774	1.86

SOURCES: "Average Gasoline Tax Rate," Department of Revenue, Office of Tax Policy Analysis. "Gasoline Tax Receipts" and "One Cent of Gasoline Tax": fiscal 1987-1995, Office of the Comptroller and Department of Revenue, Office of Tax Policy Analysis; and fiscal 1986, Department of Revenue, Office of Tax Policy Analysis.

- (1) Average of Gasoline Tax Rate in effect during each fiscal year.
- (2) Includes all Gasoline Tax collected by the Commonwealth and credited to various budgeted funds. See "COMMONWEALTH GASOLINE TAX -- Crediting of Receipts." Net of refunds and abatements from Gasoline Tax. See "COMMONWEALTH GASOLINE TAX -- Refunds and Abatements from Gasoline Tax."
- (3) Reflects full fiscal year impact of increase in Gasoline Tax Rate from 17¢ per gallon to 21¢ per gallon, which was effective January 1, 1991 and therefore impacted Gasoline Tax receipts for approximately 5 months of fiscal 1991. It is estimated that this increase raised an additional \$54.2 million during fiscal 1992 as compared with fiscal 1991.
- (4) Reflects increases in Gasoline Tax Rate from 11¢ per gallon to 17¢ per gallon effective July 28, 1990, and from 17¢ per gallon to 21¢ per gallon effective January 1, 1991, which, it is estimated, raised an additional \$155.84 million in fiscal 1991 as compared with fiscal 1990.

Gasoline Tax receipts during the first six months of fiscal 1996 totaled \$320.1 million, which represents a 4.63% increase over Gasoline Tax receipts for the comparable period during fiscal 1995.

**Historical Monthly Collection of Gasoline Tax  
Most Recent 24 Months Ending January 1996**

<u>Month</u>	<u>Gasoline Tax Receipts (in thousands)<sup>(1)</sup></u>	<u>One Cent of Gasoline Tax (in thousands)</u>
February, 1994	\$37,594	\$1,790
March, 1994	37,419	1,782
April, 1994	39,997	1,905
May, 1994	44,580	2,123
June, 1994	44,275	2,108
July, 1994	43,474	2,070
August, 1994	44,703	2,129
September, 1994	45,787	2,180
October, 1994	41,918	1,996
November, 1994	41,809	1,991
December, 1994	43,774	2,084
January, 1995	44,504	2,119
February, 1995	36,058	1,717
March, 1995	38,800	1,848
April, 1995	32,354	1,541
May, 1995	55,214	2,629
June, 1995	45,068	2,146
July, 1995	44,600	2,124
August, 1995	45,620	2,172
September, 1995	56,132	2,673
October, 1995	40,161	1,912
November, 1995	46,453	2,212
December, 1995	42,527	2,025
January, 1996	44,639	2,126

SOURCE: Department of Revenue, Office of Tax Policy Analysis.

(1) Net of refunds and abatements from Gasoline Tax. See "COMMONWEALTH GASOLINE TAX -- Refunds and Abatements from Gasoline Tax."

**Projected Collection of Gasoline Tax and Pledged Funds**

The Commonwealth does not perform an official forecast of Gasoline Tax receipts beyond the next fiscal year. For fiscal 1996, the Department of Revenue has projected that Gasoline Tax receipts will equal approximately \$542.7 million, or 5.69%, more than the estimated Gasoline Tax receipts for fiscal 1995. Based upon this assumption, Pledged Funds collected during fiscal 1996 will equal approximately \$166.9 million. The actual revenues that will be collected by the Commonwealth may vary from the forecast because of fluctuating economic conditions, technological advances, changes in law and other variables affecting revenue growth.

## DEBT SERVICE REQUIREMENTS

<u>Fiscal Year</u>	<u>1994 Bonds Debt Service</u>	<u>1996 Bonds</u>			<u>Total Debt Service</u>
		<u>Principal</u>	<u>Interest</u>	<u>Total</u>	
1996	\$25,214,997.50	\$ 0.00	\$1,944,756.25	\$ 1,944,756.25	\$27,159,753.75
1997	25,216,867.50	4,655,000.00	7,779,025.00	12,434,025.00	37,650,892.50
1998	25,213,455.00	4,845,000.00	7,592,825.00	12,437,825.00	37,651,280.00
1999	25,216,755.00	5,025,000.00	7,399,025.00	12,424,025.00	37,640,780.00
2000	25,212,680.00	5,250,000.00	7,187,975.00	12,437,975.00	37,650,655.00
2001	25,213,267.50	5,480,000.00	6,956,975.00	12,436,975.00	37,650,242.50
2002	25,216,537.50	5,730,000.00	6,704,895.00	12,434,895.00	37,651,432.50
2003	25,217,037.50	6,000,000.00	6,435,585.00	12,435,585.00	37,652,622.50
2004	25,213,072.50	6,290,000.00	6,147,585.00	12,437,585.00	37,650,657.50
2005	25,216,052.50	6,600,000.00	5,839,375.00	12,439,375.00	37,655,427.50
2006	25,216,722.50	6,925,000.00	5,509,375.00	12,434,375.00	37,651,097.50
2007	25,215,932.50	7,280,000.00	5,156,200.00	12,436,200.00	37,652,132.50
2008	25,214,107.50	7,660,000.00	4,777,640.00	12,437,640.00	37,651,747.50
2009	25,213,332.50	8,060,000.00	4,375,490.00	12,435,490.00	37,648,822.50
2010	25,212,812.50	8,485,000.00	3,952,340.00	12,437,340.00	37,650,152.50
2011	25,216,677.50	8,950,000.00	3,485,665.00	12,435,665.00	37,652,342.50
2012	25,213,340.00	9,455,000.00	2,993,415.00	12,448,415.00	37,661,755.00
2013	25,213,590.00	9,965,000.00	2,473,390.00	12,438,390.00	37,651,980.00
2014	25,212,140.00	10,510,000.00	1,925,315.00	12,435,315.00	37,647,455.00
2015	0.00	11,090,000.00	1,347,265.00	12,437,265.00	12,437,265.00
2016	0.00	11,745,000.00	692,955.00	12,437,955.00	12,437,955.00
	<u>\$479,079,377.50</u>	<u>\$150,000,000.00</u>	<u>\$100,677,071.25</u>	<u>\$250,677,071.25</u>	<u>\$729,756,448.75</u>

## DEBT SERVICE COVERAGE

The following table shows the ratios of historical collections of Pledged Funds to hypothetical maximum annual Debt Service. Under the Trust Agreement, the Commonwealth is not obligated to maintain any debt service coverage ratio. In order to issue Additional Bonds, the Commonwealth will be required to comply with certain debt service coverage tests. See "AUTHORIZATION, SECURITY AND SOURCES OF PAYMENT FOR THE BONDS -- Additional Bonds."

**Historical Revenues/Debt Service Coverage  
1996 Bonds**

Fiscal Year	Two Cents of Gasoline Tax (in thousands) <sup>(1)</sup>	Maximum 1992 Bond Debt Service (in thousands)	Surplus 1992 Pledged Funds (in thousands) <sup>(1)</sup>	4.86 Cents of Gasoline Tax (in thousands)	Total Pledged Funds (in thousands)	1994 Bond Debt Service (in thousands)	1996 Bond Debt Service (in thousands)	Debt Service Coverage Ratio
1995	\$48,901	\$10,302	\$38,599	\$118,830	\$157,429	\$25,217	\$12,439	4.18
1994	47,905	10,302	37,603	116,410	154,013	25,217	12,439	4.09
1993	47,916	10,302	37,614	116,437	154,051	25,217	12,439	4.09
1992	46,601	10,302	36,299	113,240	149,539	25,217	12,439	3.97
1991	47,396	10,302	37,094	115,172	152,266	25,217	12,439	4.04
1990	49,285	10,302	38,983	119,761	158,744	25,217	12,439	4.22
1989	49,991	10,302	39,689	121,478	161,167	25,217	12,439	4.28
1988	49,810	10,302	39,508	121,037	160,545	25,217	12,439	4.26
1987	48,695	10,302	38,393	118,330	156,723	25,217	12,439	4.16
1986	47,547	10,302	37,245	115,539	152,784	25,217	12,439	4.06

SOURCES: "Two Cents of Gasoline Tax" and "4.86 Cents of Gasoline Tax": fiscal 1987-1995, Office of the Comptroller and Department of Revenue, Office of Tax Policy Analysis; and fiscal 1986, Department of Revenue, Office of Tax Policy Analysis. "1994 Bond Debt Service," "1996 Bond Debt Service," and "Debt Service Coverage Ratio": Office of the State Treasurer.

(1) Net of refunds and abatements from Gasoline Tax. See "COMMONWEALTH GASOLINE TAX — Refunds and Abatements from Gasoline Tax."

For fiscal 1996, the Department of Revenue has estimated that Gasoline Tax receipts will equal approximately \$542.7 million. Based upon this estimate, Pledged Funds collected during fiscal 1996 will equal approximately \$166.9 million. This estimate results in a debt service coverage ratio for fiscal 1996 of 4.43, based on combined 1994 and 1996 maximum annual Debt Service of \$37.656 million. The Department of Revenue has projected that fiscal 1997 Gasoline Tax receipts will be equal to those of fiscal 1996. Forecasts of projected collections of Pledged Funds are not available beyond fiscal 1997, and therefore projected ratios of Pledged Funds to hypothetical maximum annual Debt Service for fiscal years after 1997 are not contained in this Official Statement. Assuming that no Additional Bonds are issued, Pledged Funds would have to decrease by approximately 52.6% from the amount collected in fiscal 1995 for the ratio of said amount to the hypothetical maximum annual Debt Service referenced above to be less than 2.00. Such a decrease in collections would result from a decrease in sales of gasoline to approximately 1.125 billion gallons in a fiscal year, which is approximately 51.8% below the amount of gasoline sold in the Commonwealth in fiscal 1986 (the lowest annual sales during the last ten completed fiscal years). See "HISTORICAL GASOLINE SALES."

## FINANCING THE COMMONWEALTH HIGHWAY SYSTEM

The Commonwealth is directly responsible under its operating budget for the maintenance and operation of over 12,600 lane miles of highways and over 2,800 bridges (the "Highway System"). The Massachusetts Highway Department has the primary responsibility for the operation and maintenance of the Highway System. In fiscal 1996, the Legislature has appropriated approximately \$73.4 million for the operations of the Massachusetts Highway Department, exclusive of capital funds and emergency snow and ice removal costs. The Commonwealth also provides funding to the MDC for the operation and maintenance of MDC highways, parkways, boulevards and bridges. In fiscal 1996, the Executive Office for Administration and Finance estimates that the Commonwealth will expend approximately \$8.5 million, exclusive of capital funds and emergency snow and ice removal costs, for such purposes. The Highway System does not include the Massachusetts Turnpike or the Sumner, Callahan or Ted Williams Tunnels, which are owned and operated by the Massachusetts Turnpike Authority, or the Tobin Memorial Bridge, which is owned and operated by the Massachusetts Port Authority.

The Commonwealth currently finances capital projects for the Highway System in accordance with a constitutional and statutory framework established for such purposes and with the five-year Capital Spending Plan formulated by the Executive Office for Administration and Finance.

### Legal Framework For Financing the Highway System

*Constitutional Limitations.* Article 78 of the Articles of Amendment to the Massachusetts Constitution, as amended, requires that any fees, duties, excises or license taxes relating to the registration, operation or use of vehicles on public highways, or to fuels used for propelling such vehicles (as previously defined, "Article 78 Revenues"), be expended only for the following purposes: (1) the cost of administration of laws providing for such revenue, (2) the making of refunds and adjustments relating to such revenue; (3) the payment of highway obligations; (4) the cost of construction, reconstruction, maintenance and repair of public highways, bridges and mass transportation lines; (5) the cost of enforcing state traffic laws; and (6) the cost of other mass transportation purposes. Article 78 Revenues may be expended by the Commonwealth and its counties, cities and towns for these purposes only in such manner as the Legislature may direct.

The Commonwealth currently imposes the following taxes and fees, the revenues from which are classified as Article 78 Revenues: (1) the Gasoline Tax; (2) certain other fuel taxes imposed under Chapter 64E and 64F of the Massachusetts General Laws ("Other Fuel Taxes"); (3) motor vehicle registration fees imposed under Section 33 of Chapter 90 of the Massachusetts General Laws ("Registration Fees"); (4) motor vehicle license fees imposed under Section 33 of Chapter 90 of the Massachusetts General Laws ("License Fees"); and (5) miscellaneous fees and other revenues imposed under Section 33 of Chapter 90 of the Massachusetts General Laws, relating to the operation and use of motor vehicle transportation ("Other Non-Tax Revenues"). Under current law, except for 16.4% of Gasoline Tax receipts (15% is credited to the General Fund and 1.4% is credited to various environmental budgeted funds), all of these revenues are credited to the Highway Fund.

Other Fuel Taxes include special fuel taxes imposed under Chapter 64E on all combustible gases and liquids used or sold for use in an internal combustion engine, other than those fuels which are subject to the Gasoline Tax. Diesel fuel and liquefied gases, such as propane gas, are included in the definition of special fuels. The special fuels tax rate and collection procedures are the same as those which are imposed by the Gasoline Tax, except the \$.21 statutory minimum price per gallon does not apply to liquefied gases. Other Fuel Taxes also include motor carrier taxes imposed under Chapter 64F on anyone who regularly operates motor vehicles on the highways of the Commonwealth which are propelled by Gasoline or special fuels acquired outside the Commonwealth. Receipts from both taxes are currently credited to the Highway Fund, with portions earmarked for local use.

The Registration and License Fees are collected by the Registrar of Motor Vehicles or his or her authorized agents. Pursuant to Section 3B of Chapter 7 of the Massachusetts General Laws, the Secretary of Administration and Finance, after having conducted a public hearing, determines the amounts to be charged for each fee. Section 33 of Chapter 90 excludes certain vehicles or trailers, such as school buses, emergency vehicles and municipally owned vehicles from payment of Registration Fees. Other than certain minimum fees, most Registration Fees are based on the weight of the registered vehicle. Fees from licenses include driver's licenses and learners' permits. Other Non-Tax Revenues include other fees collected by the Registrar of Motor Vehicles under Chapter 90.

Pledged Funds currently represent the amounts derived from 4.86¢ of the Gasoline Tax and Surplus 1992 Pledged Fund transferred from time to time to the Trustee from the 1992 Trustee (currently estimated to be approximately 1.58¢ per gallon based upon fiscal 1995 Gasoline Tax Receipts; see "AUTHORIZATION, SECURITY AND SOURCES OF PAYMENT FOR THE BONDS -- Flow of Pledged Funds"). Under the Trust Agreement, in connection with the issuance of Additional Bonds, and to the extent permitted by law, the Commonwealth may pledge as Additional Pledged Funds additional amounts of the Gasoline Tax, as well as other Article 78 Revenues. Under current law, only amounts credited to the Highway Fund may be pledged as security for the Bonds. See "AUTHORIZATION, SECURITY AND SOURCES OF PAYMENT FOR THE BONDS" -- "Source of Pledged Funds"; "Additional Bonds."

*Statutory Framework.* The Commonwealth has established a statutory framework governing the expenditure of Article 78 Revenues. Under Chapter 90 of the Massachusetts General Laws, which chapter governs public highways, the Commonwealth established the Highway Fund, into which most of the Article 78 Revenues are credited. In addition, the Commonwealth has credited the receipts of certain other taxes and fees to the Highway Fund, including a portion of the tax imposed on cigarettes under Chapter 64C of the Massachusetts General Laws.

The following table sets forth the historical amounts credited to the Highway Fund.



**HISTORICAL AMOUNTS CREDITED TO HIGHWAY FUND<sup>(1)</sup>**  
(in thousands)

Fiscal Year	Gasoline Taxes <sup>(2)</sup>	Other Fuel Taxes	Registration and License Fees	Other Non-Tax Revenues	Total
1995	\$429,254	\$63,625	\$302,863	\$40,769	\$836,511
1994	420,515	59,189	283,688	48,973	812,365
1993	420,609	53,682	330,685	52,919	857,895
1992	409,060	51,364	300,371	50,019	810,814
1991	354,540	44,768	293,083	62,726	755,117
1990	229,998	30,890	307,681	60,435	629,004
1989	233,295	31,921	226,025	77,326	568,567
1988	232,449	31,565	156,897	110,211	531,122
1987	227,250	29,579	157,619	45,392	459,840
1986	221,891	27,094	150,763	44,897	444,645

SOURCES: "Gasoline Taxes" and "Other Fuel Taxes": fiscal 1987-1995, Office of Comptroller; and fiscal 1986, Department of Revenue, Office of Tax Policy Analysis. "Registration and License Fees" and "Other Non-Tax Revenues": fiscal 1986-1995, Office of the Comptroller.

- (1) Excludes the portion of Cigarette Tax collected under Chapter 64C of Massachusetts General Laws which was previously credited to the Highway Fund.
- (2) Net of refunds and abatements from Gasoline Tax. Represents only that portion of the Gasoline Tax that is credited to the Highway Fund. See "COMMONWEALTH GASOLINE TAX -- Refunds and Abatements from Gasoline Tax."

Section 34 of Chapter 90 provides that the moneys credited to the Highway Fund, subject to appropriation by the Legislature, shall be used for the purposes listed therein, including administration of the laws relating to the use and operation of motor vehicles in the Commonwealth; maintaining, repairing and improving the Highway System, and local and MDC highways; the payment of debt service on Commonwealth general and special obligation highway bonds; and the maintenance of the department of state police. Historically, the Commonwealth has not funded all Highway System expenditures from amounts credited to the Highway Fund. The Legislature has also appropriated amounts for such purposes from both the General Fund and the Local Aid Fund. In fiscal years 1979 and 1980, and 1984 through 1987, the Commonwealth transferred amounts previously credited to the General Fund to the Highway Fund. In fiscal years 1988 and 1991, the Commonwealth transferred amounts previously credited to the Highway Fund to the General Fund. These transfers were authorized by the Legislature and were made to alleviate deficits which existed in the respective fund to which amounts were transferred. In connection with the enactment of the fiscal 1994 budget, the Legislature amended Section 34 of Chapter 90 to provide that revenues credited to the Highway Fund shall not be transferred to any other fund of the Commonwealth for any purpose.

In 1994, the voters in the statewide general election approved an initiative petition, effective December 8, 1994, that would slightly increase the portion of Gasoline Tax revenue credited to the Highway Fund, prohibit the transfer of money from the Highway Fund to other funds for non-highway purposes and exclude the Highway Fund balance from the computation of the "consolidated net surplus" for purposes of state finance laws. The initiative petition also provides that no more than 15% of Gasoline Tax revenues may be used for mass transportation purposes, such as expenditures related to the Massachusetts Bay Transportation Authority. This law is not a constitutional amendment and is subject to amendment or repeal by the Legislature, which may also, notwithstanding the terms of the initiative petition, appropriate moneys from the Highway Fund in such amounts and for such purposes as it determines, subject only to the constitutional restrictions described above concerning Article 78 Revenues. In June, 1995, the Legislature postponed until July 1, 1996 the effective date of the provision that would exclude the Highway Fund balance from the computation of the "consolidated net surplus."

## Sources of Funding for Current Highway System Capital Plan

The Commonwealth's Capital Spending Plan currently provides for the expenditure in fiscal 1996 through fiscal 2000 of approximately \$1.976 billion by the Commonwealth for Highway System and other transportation (exclusive of MBTA) purposes. This amount does not include amounts to be received by the Commonwealth from the federal government, including amounts to be received relating to the Central Artery/Third Harbor Tunnel project. The following describes the sources of funding for the portion of the Commonwealth's Capital Spending Plan relating to the Highway System and other transportation (other than MBTA) purposes.

*General Obligation Highway Bonds.* Until 1992, the Commonwealth issued only general obligation bonds ("General Obligation Highway Bonds") for the purpose of funding capital projects relating to the Highway System. Under the provisions of the Massachusetts Constitution and statutes, the Commonwealth is permitted to expend Article 78 Revenues and other moneys credited to the Highway Fund to pay debt service on the General Obligation Highway Bonds. The General Obligation Highway Bonds are general obligations of the Commonwealth, and its full faith and credit are pledged to the payment of the debt service thereon.

*Special Obligation Bonds.* Under the Special Obligation Act, the Commonwealth is authorized to issue special obligation bonds of the Commonwealth to finance capital expenditures otherwise permitted to be made from the Highway Fund. The bonds issued thereunder may be secured by all or any portion of the moneys credited to the Highway Fund, will not constitute general obligations of the Commonwealth, and the full faith and credit of the Commonwealth will not be pledged to the payment of debt service thereon. The 1992 Bonds were the first issue of special obligation bonds issued under the Special Obligation Act. The 1994 Bonds and the 1996 Bonds are the second and third issue, respectively, of special obligation bonds issued under the Special Obligation Act and the first and second issue, respectively, under the Trust Agreement and are payable only from the Pledged Funds.

The provisions of the Highway Act authorize the expenditure of \$3.691 billion (which amount includes anticipated federal funds) to finance certain highway projects. The Commonwealth intends to fund the non-federal portion of these expenditures in accordance with the Capital Spending Plan and currently intends to issue both general and special obligation bonds of the Commonwealth to finance the expenditures. The Executive Office for Administration and Finance cannot predict at this time the specific amounts of general obligation bonds and special obligation bonds that will be issued.

In order for the Commonwealth to meet the debt service coverage tests imposed under the Trust Agreement to issue Additional Bonds it may pledge Additional Pledged Funds, which, to the extent permitted by law, may be composed of all or a portion of Article 78 Revenues, including a greater portion of the Gasoline Tax. See "Legal Framework for Financing the Commonwealth Highway System" and "AUTHORIZATION, SECURITY AND SOURCES OF PAYMENT FOR THE BONDS -- Additional Bonds."

## Proposed Metropolitan Highway System

As part of the completion of the federal interstate highway system, the Commonwealth is undertaking a major transportation construction project to depress a portion of Interstate 93 in downtown Boston (the "Central Artery"), which is now elevated highway, and to construct a new tunnel under Boston Harbor, the Ted Williams Tunnel, to link the current terminus of the Massachusetts Turnpike with Logan Airport and roads leading to the area north of Boston. This project, known as the Central Artery/Tunnel (CA/T) Project, will complete Interstate 90, which runs from the New York border to Boston, and connect it with Interstate 93 in downtown Boston. In January, 1995, the Governor proposed legislation, in conjunction with the CA/T Project, to provide for the establishment of an integrated system of tunnels and highways to be owned and operated by the Massachusetts Turnpike Authority and to be known as the Metropolitan Highway System. The system would comprise the Boston extension portion of the Massachusetts Turnpike, the Central Artery, the Sumner, Callahan and Ted Williams Tunnels and the Tobin Memorial Bridge. The legislation provided that as the various components of the system not previously owned by the Turnpike Authority were completed, each such completed segment would be transferred to the Turnpike Authority and thereafter be owned and operated by it. (The legislation also provided that the Tobin Bridge would be sold to the Turnpike Authority by the Massachusetts Port Authority.) The first major component to be transferred would be the Ted Williams Tunnel. The proposed legislation also required the Turnpike Authority

to make an initial payment of \$100 million to the Commonwealth in connection with the transfer of the Ted Williams Tunnel and to undertake with the Executive Office of Transportation and Construction a joint feasibility study that would consider various financial and operational issues related to the establishment of the Metropolitan Highway System.

Later in 1995, the Legislature enacted modified versions of the Governor's proposed legislation, providing for the transfer of the Ted Williams Tunnel to the Turnpike Authority but not establishing the Metropolitan Highway System. As enacted, the legislation requires further study by the Turnpike Authority and the Executive Office of Transportation and Construction (with the Massachusetts Port Authority a full participant as to issues germane to it) to consider the financial feasibility of establishing the Metropolitan Highway System, as well as the amount of additional financial contributions to be made by the Turnpike Authority and the Port Authority. The study is to be submitted to the Legislature and the Governor no later than December 1, 1996. The Ted Williams Tunnel, which was opened for commercial vehicular traffic on December 15, 1995, has been transferred to the Turnpike Authority, and the Turnpike Authority is expected to transfer \$100 million to the Commonwealth before May 1, 1996.

### LITIGATION

No litigation is pending or, to the knowledge of the Attorney General, threatened against or affecting the Commonwealth seeking to restrain or enjoin the issuance, sale or delivery of the 1996 Bonds, or in any way contesting or affecting the validity of the 1996 Bonds or the Trust Agreement, including the pledge of Pledged Funds.

### BOOK-ENTRY-ONLY SYSTEM

The Depository Trust Company, New York, New York ("DTC") will act as securities depository for the 1996 Bonds. The 1996 Bonds will initially be issued exclusively in book-entry form and the ownership of one fully registered 1994 Bond for each maturity set forth on the inside cover page hereof, each in the aggregate principal amount of such maturity, will be deposited with DTC.

DTC is a limited-purpose trust company organized under the New York Banking Law, a "banking organization" within the meaning of the New York Banking Law, a member of the Federal Reserve System, a "clearing corporation" within the meaning of the New York Uniform Commercial Code, and a "clearing agency" registered pursuant to the provisions of Section 17A of the Securities Exchange Act of 1934, as amended. DTC holds securities that its participants (the "DTC Participants") deposit with DTC. DTC also facilitates the settlement among DTC Participants of securities transactions, such as transfers and pledges, in deposited securities through electronic computerized book-entry changes in accounts of the DTC Participants, thereby eliminating the need for physical movement of securities certificates. DTC Participants include securities brokers and dealers, banks, trust companies, clearing corporations and certain other organizations. DTC is owned by a number of the DTC Participants and by the New York Stock Exchange, Inc., the American Stock Exchange, Inc. and the National Association of Securities Dealers, Inc. Access to the DTC system is also available to others such as banks, securities brokers and dealers, and trust companies that clear through or maintain a custodial relationship with a DTC Participant, either directly or indirectly (the "Indirect Participants"). The rules applicable to DTC and the DTC Participants are on file with the Securities and Exchange Commission.

Purchases of 1996 Bonds under the DTC system must be made by or through DTC Participants, which will receive a credit for the 1996 Bonds in the records of DTC. The ownership interest of each actual purchaser of each 1994 Bond (the "Beneficial Owner") is in turn to be recorded on the DTC Participants' and Indirect Participants' records. Beneficial Owners will not receive written confirmation from DTC of their purchase, but Beneficial Owners are expected to receive written confirmations of their purchase providing details of the 1996 Bonds acquired, as well as periodic statements of their holdings, from the DTC Participant or Indirect Participant through which the Beneficial Owner entered into the transaction. Transfers of ownership interests in the 1996 Bonds will be accomplished by entries made on the books of DTC Participants acting on behalf of the Beneficial Owners.

Beneficial Owners will not receive certificates representing their ownership interests in the 1996 Bonds, except in the event that use of the book-entry system for the 1996 Bonds is discontinued.

To facilitate subsequent transfers, all 1996 Bonds deposited by DTC Participants with DTC are registered in the name of DTC's partnership nominee, Cede & Co. The deposit of the 1996 Bonds with DTC and their registration in the name of Cede & Co. effect no change in beneficial ownership. DTC has no knowledge of the actual Beneficial Owners of the 1996 Bonds; DTC's records reflect only the identity of the DTC Participants to whose accounts such 1996 Bonds are credited, which may or may not be the Beneficial Owners. The DTC Participants will remain responsible for keeping account of their holdings on behalf of their customers.

Conveyance of notices and other communications by DTC to DTC Participants, by DTC Participants to Indirect Participants, and by DTC Participants and Indirect Participants to Beneficial Owners will be governed by arrangements among them, subject to any statutory or regulatory requirements as may be in effect from time to time.

Redemption notices shall be sent to Cede & Co. If less than all of the 1996 Bonds within an issue are being redeemed, DTC's practice is to determine by lot the amount of the interest of each DTC Participant in such issue to be redeemed.

Neither DTC nor Cede & Co. will consent or vote with respect to the 1996 Bonds. Under its usual procedures, DTC mails an omnibus proxy to the Commonwealth as soon as possible after the record date. The omnibus proxy assigns Cede & Co.'s voting rights to those DTC Participants having the 1996 Bonds credited to their accounts on the record date (identified in a listing attached to the omnibus proxy).

**NEITHER THE COMMONWEALTH NOR THE TRUSTEE WILL HAVE ANY RESPONSIBILITY OR OBLIGATION TO THE DTC PARTICIPANTS, THE INDIRECT PARTICIPANTS OR THE BENEFICIAL OWNERS WITH RESPECT TO THE ACCURACY OF ANY RECORDS MAINTAINED BY DTC OR BY ANY DTC PARTICIPANT OR INDIRECT PARTICIPANT; THE PAYMENT OF, OR THE PROVIDING OF NOTICE TO, THE DTC PARTICIPANTS, THE INDIRECT PARTICIPANTS OR THE BENEFICIAL OWNERS; OR WITH RESPECT TO ANY OTHER ACTION TAKEN BY DTC AS BONDOWNER.**

Beneficial Owners of the 1996 Bonds will not receive or have the right to receive physical delivery of such 1996 Bonds, and will not be or be considered to be owners thereof. So long as Cede & Co. is the registered owner of the 1996 Bonds, as nominee of DTC, references herein to the holders or registered owners of the 1996 Bonds shall mean Cede & Co. and shall not mean the Beneficial Owners of the 1996 Bonds.

DTC may discontinue providing its services as securities depository with respect to the 1996 Bonds at any time by giving reasonable notice to the Commonwealth. Under such circumstances, unless a substitute depository is retained by the Commonwealth, 1996 Bonds will be delivered and registered as designated by the Beneficial Owners. The Beneficial Owner, upon registration of 1996 Bonds held in the Beneficial Owner's name, will become the Bondholder.

The Commonwealth may determine that continuation of the system of book-entry transfers through DTC (or a successor depository) is not in the best interest of the Beneficial Owners. In such event, 1996 Bonds will be delivered and registered as designated by the Beneficial Owners.

The principal of and interest and premium on the 1996 Bonds will be paid to DTC or its nominee, Cede & Co., as registered owner of the 1996 Bonds. Upon receipt of moneys, DTC's practice is to credit the accounts of the DTC Participants on the payable date in accordance with their respective holdings shown on the records of DTC unless DTC has reason to believe it will not receive payment on the payable date. Payments by DTC Participants and Indirect Participants to Beneficial Owners will be governed by standing instructions and customary practices, as is now the case with municipal securities held for the accounts of customers in bearer form or registered in "street name," and will be the responsibility of such DTC Participant or Indirect Participant and not DTC or the Commonwealth, subject to any statutory and regulatory requirements as may be in effect from time to time.

Payment of the principal of and interest and premium on the 1996 Bonds to DTC is the responsibility of the Commonwealth; disbursement of such payments to DTC Participants and Indirect Participants shall be the responsibility of DTC; and disbursement of such payments to Beneficial Owners shall be the responsibility of the DTC Participants and the Indirect Participants.

Neither the Commonwealth nor the Trustee can give any assurances that DTC Participants or others will distribute payments of principal of and interest on the 1996 Bonds paid to DTC or its nominee, as the registered owner, to the Beneficial Owners, or that they will do so on a timely basis or that DTC will serve and act in a manner described in this document.

THE INFORMATION IN THIS SECTION CONCERNING DTC AND DTC'S BOOK-ENTRY SYSTEM HAS BEEN OBTAINED FROM SOURCES THAT THE COMMONWEALTH BELIEVES TO BE RELIABLE, BUT THE COMMONWEALTH TAKES NO RESPONSIBILITY FOR THE ACCURACY THEREOF.

### RATINGS

Moody's Investors Service, Inc. and Standard & Poor's Ratings Group will assign their municipal bond ratings of "Aaa" and "AAA," respectively, to the Insured Bonds with the understanding that upon delivery of such Bonds, a financial guaranty insurance policy insuring the payment when due of the principal of and interest on the Insured Bonds will be issued by AMBAC Indemnity Corporation.

The 1996 Bonds, other than the Insured Bonds, have been assigned ratings by Fitch Investors Service, Inc., Moody's Investors Service, Inc. and Standard & Poor's Ratings Group. The rating assigned by Fitch Investors Service, Inc. for the 1996 Bonds is "A+." The rating assigned by Moody's Investors Service, Inc. for the 1996 Bonds is "A1." The rating assigned by Standard & Poor's Ratings Group for the 1996 Bonds is "AA-."

Such ratings reflect only the respective views of such organizations, and an explanation of the significance of such ratings may be obtained from the rating agency furnishing the same. There is no assurance that a rating will continue for any given period of time or that a rating will not be revised or withdrawn entirely by any or all of such rating agencies, if, in its or their judgment, circumstances so warrant. Any downward revision or withdrawal of a rating could have an adverse effect on the market prices of the 1996 Bonds.

### TAX EXEMPTION

Bond Counsel is of the opinion that, under existing law, interest on the 1996 Bonds will not be included in the gross income of holders of such 1996 Bonds for federal income tax purposes. This opinion is expressly conditioned upon compliance with certain requirements of the Internal Revenue Code of 1986, as amended (the "Code"), which requirements must be satisfied after the date of issuance of the 1996 Bonds in order to assure that the interest on the 1996 Bonds is and continues to be excludable from the gross income of the holders of such 1996 Bonds. Failure to comply could cause the interest on the 1996 Bonds to be included in the gross income of the holders thereof, retroactive to the date of issuance of such 1996 Bonds. In particular, and without limitation, those requirements include restrictions on the use, expenditure and investment of bond proceeds and the payment of rebate, or penalties in lieu of rebate, to the United States, subject to certain exceptions. The Commonwealth has provided covenants and certificates as to its continued compliance with such requirements.

In the opinion of Bond Counsel, under existing law, interest on the 1996 Bonds will not constitute a preference item under section 57(a)(5) of the Code for purposes of computation of the alternative minimum tax imposed on certain individuals and corporations under section 55 of the Code. However, interest on the 1996 Bonds will be included in "adjusted current earnings" of corporate holders of such 1996 Bonds and therefore will be taken into account under section 56(g) of the Code in the computation of the alternative minimum tax applicable to certain corporations.

Bond Counsel has not opined as to other federal tax consequences of holding the 1996 Bonds. However, prospective purchasers of such 1996 Bonds should be aware that (i) section 265 of the Code denies a deduction for interest on indebtedness incurred or continued to purchase or carry the 1996 Bonds or, in the case of a financial institution, that portion of a holder's interest expense allocated to such 1996 Bonds, (ii) with respect to insurance companies subject to the tax imposed by section 831 of the Code, section 832(b)(5)(B)(i) reduces the deduction for losses incurred by 15% of the sum of certain items, including interest on the 1996 Bonds, (iii) for taxable years beginning before January 1, 1996, interest on the 1996 Bonds earned by some corporations could be subject to the environmental tax imposed by section 59A of the Code, (iv) interest on the 1996 Bonds earned by certain foreign corporations doing business in the United States could be subject to a branch profits tax imposed by section 884 of the Code, (v) passive investment income, including interest on the 1996 Bonds, may be subject to federal income taxation under section 1375 of the Code for S corporations that have Subchapter S earnings and profits at the close of the taxable year if greater than 25% of the gross receipts of such S corporation is passive investment income, (vi) section 86 of the Code requires recipients of certain Social Security and Railroad Retirement benefits to take into account, in determining gross income, receipts or accruals of interest on the 1996 Bonds and (vii) for taxable years beginning after December 31, 1995, receipt of investment income, including interest on the 1996 Bonds, may disqualify the recipient thereof from obtaining the earned income credit under section 32(i) of the Code.

In the opinion of Bond Counsel, the 1996 Bonds, their transfer and the income therefrom, including profit on the sale thereof, shall at all times be exempt from taxation by and within the Commonwealth, although the 1996 Bonds and the interest thereon may be included in the measure of estate and inheritance taxes and of certain corporate excise and franchise taxes. Bond Counsel has not opined as to the taxability of the 1996 Bonds or interest thereon under the laws of jurisdictions other than the Commonwealth.

For federal and Massachusetts income tax purposes, interest includes original issue discount, which with respect to a 1996 Bond is equal to the excess, if any, of the stated redemption price at maturity of such 1996 Bond over the initial offering price thereof to the public, excluding underwriters and other intermediaries, at which price a substantial amount of all such 1996 Bonds with the same maturity was sold. Original issue discount accrues actuarially over the term of a 1996 Bond. Holders should consult their own tax advisers with respect to the computations of original issue during the period in which any such 1996 Bond is held.

On the date of delivery of the 1996 Bonds, the Underwriters will be furnished with an opinion of Bond Counsel substantially in the form attached hereto as Appendix D -- Form of Opinion of Bond Counsel.

#### **OPINIONS OF COUNSEL**

The unqualified approving opinion as to the legality of the 1996 Bonds will be rendered by Mintz, Levin, Cohn, Ferris, Glovsky and Popeo, P.C. of Boston, Massachusetts, Bond Counsel to the State Treasurer. The proposed form of the opinion of Bond Counsel is attached as Appendix D. Certain legal matters will be passed upon for the State Treasurer by Mintz, Levin, Cohn, Ferris, Glovsky and Popeo, P.C. of Boston, Massachusetts, as disclosure counsel to the State Treasurer.

#### **COMPETITIVE SALE OF 1996 BONDS**

After competitive bidding on March 19, 1996, the 1996 Bonds were awarded to a group of underwriters (the "Underwriters") led by Merrill Lynch & Co. The Underwriters have supplied the information as to the public offering yields or prices of the 1996 Bonds set forth on the inside cover hereof. If all of the 1996 Bonds are resold to the public at such yields or prices, the Underwriters have informed the Commonwealth that they anticipate the total Underwriter compensation, net of amounts to be applied to costs of issuance of the 1996 Bonds and insurance, to be \$779,039. The Underwriters may change the public offering yields or prices from time to time.

## CONTINUING DISCLOSURE

In order to assist bidders in complying with paragraph (b)(5) of Rule 15c2-12, the Commonwealth will undertake in the 1996 Bonds to provide annual reports and notices of certain events. A description of this undertaking is set forth in Appendix F attached hereto.

## MISCELLANEOUS

Any provisions of the constitution of the Commonwealth, of all general and special laws and of other documents set forth or referred to in this Official Statement are only summarized, and such summaries do not purport to be complete statements of any of such provisions. Only the actual text of such provisions can be relied upon for completeness and accuracy.

All estimates and assumptions in this Official Statement have been made on the best information available and are believed to be reliable, but no representations whatsoever are made that such estimates and assumptions are correct. So far as any statements in this Official Statement involve any matters of opinion, whether or not expressly so stated, they are intended merely as such and not as representations of fact. The various tables may not add due to rounding of figures.

The information, estimates and assumptions and expressions of opinion in this Official Statement are subject to change without notice. Neither the delivery of this Official Statement nor any sale made pursuant to this Official Statement shall, under any circumstances, create any implication that there has been no change in the affairs of the Commonwealth or its agencies, authorities or political subdivisions since the date of this Official Statement, except as expressly stated.

## AVAILABILITY OF OTHER INFORMATION

For additional information about the Commonwealth, specific reference is made to the Commonwealth's Information Statement dated February 16, 1996 (the "Information Statement"), as it appears in the Official Statement of the Massachusetts Bay Transportation Authority dated February 22, 1996 relating to its 1996 Series A Notes. A copy of said Official Statement has been filed with the Municipal Securities Rulemaking Board and with each Nationally Recognized Municipal Securities Information Repository currently recognized by the Securities and Exchange Commission. Copies of the Information Statement may also be obtained from the Commonwealth. See "AVAILABILITY OF OTHER INFORMATION." *It should be noted, however, that the 1996 Bonds are not general obligations of the Commonwealth and are not secured by the full faith and credit of the Commonwealth. The 1996 Bonds are payable only from Pledged Funds and other moneys available to the owners of the 1996 Bonds under the Trust Agreement. See "AUTHORIZATION, SECURITY AND SOURCES OF PAYMENT FOR THE BONDS -- Special Obligations."*

Exhibits B and C to the Information Statement contain the Commonwealth's audited fiscal 1995 combined financial statements (statutory basis) and fiscal 1995 general purpose financial statements (GAAP basis), respectively. The Commonwealth does not prepare audited financial statements solely with respect to amounts of the Gasoline Tax credited to the Infrastructure Fund or the obligations of the Commonwealth under the 1992 Trust Agreement or the Trust Agreement, and, accordingly, no such audited information is included in this Official Statement or expected to be available in the future. The information relating to the Gasoline Tax receipts has been obtained from the Department of Revenue or the Office of the Comptroller of the Commonwealth and is unaudited.

Questions regarding this Official Statement or requests for additional information concerning the Commonwealth should be directed to Kenneth Olshansky, Deputy Treasurer, One Ashburton Place, Boston, Massachusetts 02108, telephone 617/367-3900, or Lowell Richards, Assistant Secretary for Capital Resources, Executive Office for Administration and Finance, State House, Room 373, Boston, Massachusetts 02133, telephone 617/727-2040. Questions regarding legal matters and requests for copies of the Trust Agreement should be directed to John R. Regier or Navjeet K. Bal, Mintz, Levin, Cohn, Ferris, Glovsky and Popeo, P.C., One Financial Center, Boston, Massachusetts 02111, telephone 617/542-6000.

**THE COMMONWEALTH OF MASSACHUSETTS**

By /s/ Joseph D. Malone

Joseph D. Malone  
*Treasurer and Receiver-General*

By /s/ Charles D. Baker

Charles D. Baker  
*Secretary of Administration and Finance*

March 19, 1996

T3/601751.1



## ECONOMIC INFORMATION

The information in this section was prepared by the Massachusetts Institute for Social and Economic Research ("MISER") at the University of Massachusetts at Amherst and may be relevant in evaluating the economic and financial condition and prospects of the Commonwealth of Massachusetts. MISER is designated as the Commonwealth's State Data Center and archives much of the data about Massachusetts. The demographic information and statistical data, which have been obtained by MISER from the sources indicated, do not necessarily present all factors which may have a bearing on the Commonwealth's fiscal and economic affairs.

All information is presented on a calendar-year basis unless otherwise indicated. Information is current as of December 28, 1995. Sources of information are indicated in the text or immediately following the charts and tables. Although the Commonwealth considers the sources to be reliable, the Commonwealth has made no independent verification of the information presented herein and does not warrant its accuracy.

### OVERVIEW

*Population Characteristics.* Massachusetts experienced modest population increases between 1980 and 1990. The 1990 United States census count for Massachusetts was 6,016,425 or 4.9 percent more than the 5,737,093 counted in 1980. While the Massachusetts population did not increase significantly between 1989 and 1993, it increased by 0.4 percent between 1993 and 1994. Bureau of the Census estimates for 1994 show the Massachusetts population to be 6,041,123. In contrast, the total United States population increased by approximately 9.8 percent between 1980 and 1990, 3.6 percent between 1990 and 1993, and 1.0 percent between 1993 and 1994. According to the 1990 United States census, the City of Boston experienced a small population increase of 2.0 percent from 562,994 in 1980 to 574,283 in 1990. The Boston-Washington corridor, which includes the states of Connecticut, Delaware, Maryland, Massachusetts, New Jersey, New York, Pennsylvania, Rhode Island, and Virginia, was home to sixty million people in 1992, nearly one quarter of the entire United States population of 255 million.

*Personal Income, Consumer Prices, and Poverty.* Per capita personal income levels in Massachusetts have been consistently higher than those in the United States since 1970. While the growth in per capita income has slowed and real income levels have even declined in Massachusetts since 1988 (even as real income levels in the United States continued to grow), real income levels in Massachusetts in 1994 remained well above the national average: \$25,609 compared to \$21,699. The growth in levels of average annual pay in Massachusetts has been striking over the last ten years: since 1984, when levels of pay in Massachusetts were roughly equal to those in the United States, pay has grown at a rate two to three percentage points higher than that of the United States. As a result, preliminary data for 1994 show that the average level of pay in Massachusetts was \$31,024 while that in the United States was \$26,939. In addition to high income levels, Massachusetts has maintained a poverty rate well below the national average. In 1994, 9.7 percent of the Massachusetts population was below the poverty line, while 14.5 percent of the population of the United States fell below the poverty line. In November 1995, the Consumer Price Index for the Boston Metropolitan area was 160.3 while that for the United States was 153.6; the change from November 1994 was 2.3 percent and 2.6 percent, respectively.

*Employment.* Total employment levels in Massachusetts, which declined between 1989 and 1992, grew at a rate of 1.6 percent in 1993 and 2.2 percent in 1994. The only employment sector which did not grow in 1993 and 1994 was the manufacturing sector, which has experienced declining employment levels

since 1985. The sector employing the greatest number of people in Massachusetts continues to be the services sector, which contributed approximately 33.5 percent of total seasonally adjusted non-agricultural employment in 1994. The unemployment rate in Massachusetts, which was below that of the United States between 1979 and 1989, was higher than the national average between 1990 and 1993. In 1994, however, the unemployment rate of 6.0 percent in Massachusetts was below the United States average of 6.1 percent. In October 1995, the unemployment rate in Massachusetts was lower than that of the United States: 5.3 percent compared to 5.5 percent. The Unemployment Compensation Trust Fund in Massachusetts contained a positive balance of \$469 million on October 31, 1995 and is expected to contain a balance of \$398 million by December 31, 1995.

***Economic Base and Performance.*** Massachusetts has a diversified economic base which includes traditional manufacturing, high technology, and service industries. A substantial portion of products produced by these and other sectors is exported. Massachusetts ranked thirteenth in the United States with nearly \$13.1 billion in international exports in 1994. Like most other industrial states, Massachusetts has seen a shift in employment from labor-intensive manufacturing industries (e.g., textiles, apparel, shoes, paper products) to technology and service-based industries like computers, biomedical technology, consulting, health care and business services.

Massachusetts is a leader in research and development of biotechnology, biomedical technology, software, robotics, and other high technology products. A large proportion of the Massachusetts total work force is employed in high technology related jobs. Nine of the fourteen Massachusetts companies listed in the 1994 *Fortune* 500 are engaged in the production of computer equipment, electronic components, or scientific/photographic instruments. Non-manufacturing high technology jobs have continued to increase their share of total employment in the state. The concentration of world-renowned research institutions, as well a large number of smaller firms, has helped make Massachusetts a national center for high technology industries.

The recession of the late 1980s and early 1990s reversed the good fortunes of the construction industry in the mid-1980s. The industry is recovering in the 1990s, however. Housing permits issued in Massachusetts increased by 30.3 percent in 1992, 9.3 percent in 1993, and 2.9 percent in 1994. This follows a prolonged decline in demand that extended from 1986 to 1991. Since 1991, sales of existing homes in Massachusetts increased at a yearly rate considerably higher than the national average. Relative housing prices in Boston continue to outpace those of the rest of the nation, however. In 1983, the price for a single family home in the Boston Metropolitan area was 18 percent higher than the national average; by 1994, home prices were 64.4 percent higher than the national average.

The travel and tourism industry represents a significant component of the overall Massachusetts economy. The Massachusetts Office of Travel and Tourism estimates that a total of 25.9 million people visited the Commonwealth in 1994, spending \$8.71 billion.

***Human Resources and Infrastructure.*** Skilled human capital is the foundation of Massachusetts' economic strength. It provides the basis for a technologically dynamic and industrially diverse regional economy. The Massachusetts population is well-educated relative to the United States population, with 27.2 percent of Massachusetts residents over the age of 25 having received Bachelor's degrees, compared to 20.3 percent of the United States population. In addition, per pupil spending on public primary and secondary education in Massachusetts has been significantly higher than the national average since 1980. Preliminary estimates for the 1993-94 academic year show that Massachusetts spent twenty percent more per pupil than the national average.

The concentration of technical, engineering, managerial, scientific, and other professional skills within the Massachusetts work force is, in part, due to the 120 private and public colleges and universities located throughout the state. The largest and best known of these institutions include Amherst College, Boston College, Boston University, Clark University, Harvard University, Holy Cross College, Massachusetts Institute of Technology, Mount Holyoke College, Northeastern University, Smith College, Tufts University, the University of Massachusetts, Wellesley College, and Williams College.

Massachusetts is also home to many of the nation's most well-known hospitals and medical institutions, including Massachusetts General, Children's, Beth Israel, and Brigham and Women's Hospitals and the Lahey Clinic. The Massachusetts medical establishment is recognized internationally as a center for health services, medical teaching, and research, attracting patients and health professionals from all over the world. The hospitals and other health care institutions provide a valuable link to the biomedical and biotechnical research and development activities conducted by approximately 178 biotechnology companies located in Massachusetts.

Massachusetts possesses an extensive transportation system and related facilities. The City of Boston is the transportation and commercial center for New England and is the site of both a full-facility seaport and a major international airport. Boston's Logan International Airport is a major contributor to the economy of the greater Boston area, Massachusetts, and the New England region. Based upon the volume of air passengers served, in 1994 Logan Airport ranked first in New England, thirteenth in the United States, and twentieth in the world according to the Massachusetts Port Authority ("Massport"). In 1994, Logan Airport served slightly more than 25.2 million arriving and departing passengers, more than double the number served in 1975. For the same period, Logan Airport ranked seventeenth nationally and twenty-eighth in the world in total air cargo volume, handling nearly 778.3 million pounds of total cargo. Massachusetts also has several deep-water seaports. The Port of Boston handled more than 16 million tons of cargo in 1992 valued at more than \$7.3 billion. The state is also well served by the federal interstate highway system, including interstate routes 84, 90, 91, 93, 95, 295 and 495. The condition of the interstate highway system in Massachusetts is comparable to that of the rest of the United States, with the majority of the roadways rated in "good" or "very good" condition. Rail and trucking systems provide direct overland shipping throughout the United States and Canada.

The following sections provide detailed information on population characteristics, personal income, employment, economic base and performance, and human resources and infrastructure.

## POPULATION CHARACTERISTICS

Massachusetts is a densely populated state with a comparatively large percentage of its residents living in metropolitan areas. According to the 1990 census, the population density of Massachusetts is 767.6 persons per square mile, as compared to 70.3 for the United States as a whole. Among the 50 states, only Rhode Island and New Jersey have a greater population density. Massachusetts ranks third among the states in percentage of residents living in metropolitan areas: 96.2 percent of Massachusetts residents live in metropolitan areas, compared with a national average of 79.4 percent.

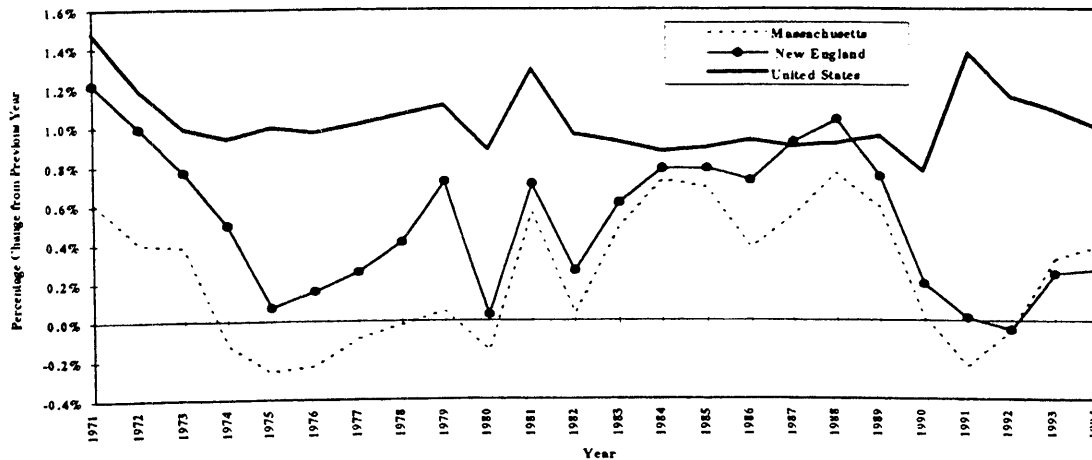
The City of Boston, the largest city in New England, has a population of 574,283, according to the 1990 United States Census. The official Metropolitan Statistical Area ("MSA") for Boston, with a 1990 population of 2,870,669, contains close to one-half of the Massachusetts population. The other Massachusetts cities with populations in excess of 100,000 include Worcester (169,759), situated approximately 40 miles west of Boston, Springfield (156,983), located in the Connecticut River Valley in western Massachusetts, and Lowell (103,439), located approximately 30 miles northwest of Boston, along the Merrimack River.

Worcester is the second largest city in New England, though its MSA, extending into Connecticut, is slightly smaller than Springfield's MSA. Its service, trade, and manufacturing industries combine for more than 70 percent of Worcester's total employment. As a major medical and educational center, the Worcester area is home to 19 patient care facilities, including the University of Massachusetts Medical School, and twelve colleges and universities.

Springfield, the third largest city in the Commonwealth, enjoys a diverse body of corporate employers, the largest of which are the Bay State Medical Center, the Massachusetts Mutual Life Insurance Company, the Milton Bradley Company, and Smith and Wesson. In addition, Springfield is home to four independent colleges.

As the following chart indicates, the percentage change in population in Massachusetts since 1971 has been both lower and more erratic than the change in population for the United States as a whole. While this trend is similar to that experienced by New England, it differs considerably from the steady growth rates for the United States over the same period of time. Between 1990 and 1992, the rate of population growth in Massachusetts was zero or negative. In 1994, however, the population of Massachusetts grew by 0.4 percent, compared to a 1.0 percent increase for the United States.

*Percentage Change in Total Population, 1971-1994*



The following table compares the population level and percentage change in population level of Massachusetts with those of the New England States and the United States.

**Population, 1970-1994**  
(in thousands)

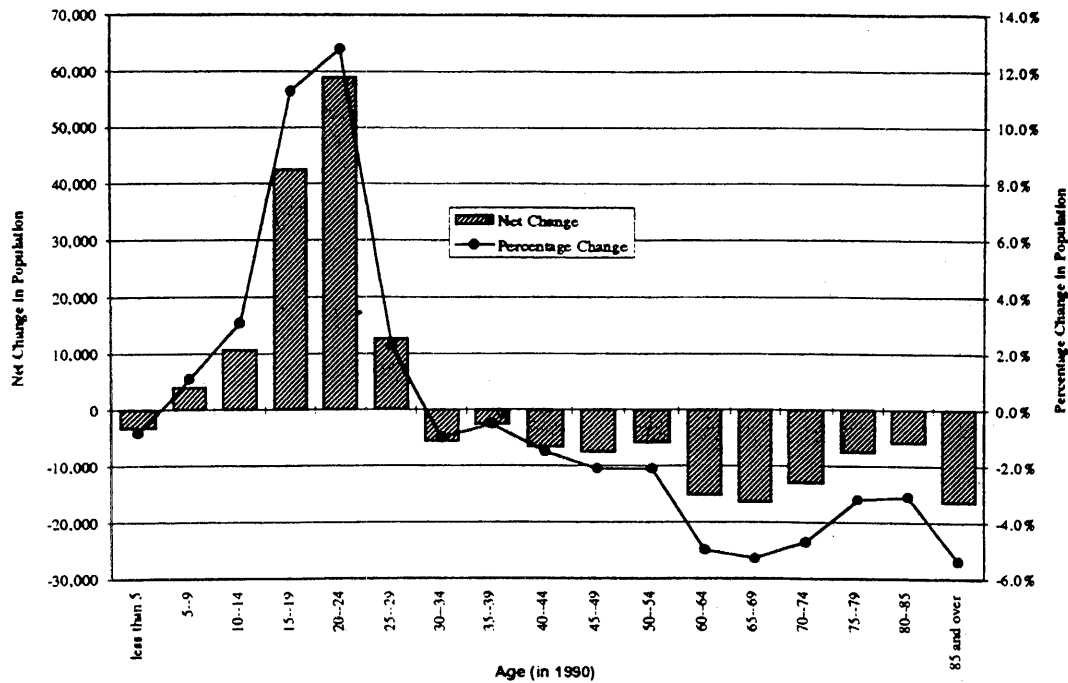
Year	Massachusetts		New England		United States	
	Total	Percentage Change	Total	Percentage Change	Total	Percentage Change
1970	5,704		11,735		203,799	
1971	5,739	0.6%	11,878	1.2%	206,818	1.5%
1972	5,762	0.4%	11,996	1.0%	209,275	1.2%
1973	5,784	0.4%	12,088	0.8%	211,349	1.0%
1974	5,777	-0.1%	12,148	0.5%	213,334	0.9%
1975	5,762	-0.3%	12,157	0.1%	215,457	1.0%
1976	5,749	-0.2%	12,176	0.2%	217,554	1.0%
1977	5,744	-0.1%	12,207	0.3%	219,761	1.0%
1978	5,743	0.0%	12,257	0.4%	222,098	1.1%
1979	5,746	0.1%	12,345	0.7%	224,564	1.1%
1980	5,737	-0.2%	12,349	0.0%	226,542	0.9%
1981	5,769	0.6%	12,436	0.7%	229,466	1.3%
1982	5,771	0.0%	12,468	0.3%	231,664	1.0%
1983	5,799	0.5%	12,544	0.6%	233,792	0.9%
1984	5,841	0.7%	12,642	0.8%	235,825	0.9%
1985	5,881	0.7%	12,741	0.8%	237,924	0.9%
1986	5,903	0.4%	12,833	0.7%	240,133	0.9%
1987	5,935	0.5%	12,951	0.9%	242,289	0.9%
1988	5,980	0.8%	13,085	1.0%	244,499	0.9%
1989	6,015	0.6%	13,182	0.7%	246,819	0.9%
1990	6,016	0.0%	13,207	0.2%	248,718	0.8%
1991	6,002	-0.2%	13,209	0.0%	252,131	1.4%
1992	5,999	0.0%	13,203	0.0%	255,028	1.1%
1993	6,018	0.3%	13,235	0.2%	257,783	1.1%
1994	6,041	0.4%	13,270	0.3%	260,341	1.0%

SOURCE: United States Department of Commerce, Bureau of the Census.

Note: 1970, 1980, and 1990 estimates are as of April 1; estimates for other years are as of July 1.

Net migration has not significantly contributed to changes in the Commonwealth's total population during the last decade, although preliminary evidence suggests that out-migration increased during the Commonwealth's recent economic downturn. However, net migration has reduced the age profile of the Massachusetts population. Between 1980 and 1990, considerable increases in the population of younger age groups (10 years to 30 years) coincided with smaller decreases in the population of all age groups representing people over thirty. The following chart shows the net change in Massachusetts population between 1980 and 1990, by five year classifications of ages. Between 1980 and 1990, Massachusetts lost more citizens over age 30 through migration than it gained. But in-migration of younger people, particularly in the college age and young adult groups, offset the number of older citizens moving away. This chart shows the difference between the number in each age group that would have been expected in 1990 (if there had been no migration) and the actual 1990 census count. For children younger than ten, the difference is between the number of surviving children (births minus deaths) and the 1990 census count.

### Net Change in Massachusetts Population by Age, 1980-1990



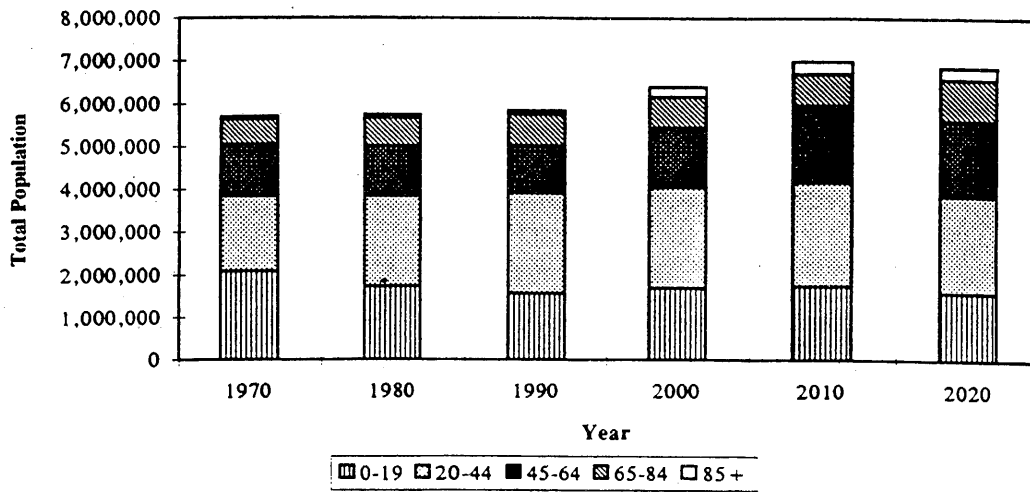
The next fifteen years are expected to bring about a considerable change in the age distribution of the Massachusetts population. As the following table and chart show, the population of Massachusetts is expected to be distributed more heavily in the "45 and over" age groups in 2010 and in 2020 than it was in 1990. They also reveal a noticeable increase in the "85 and over" age group while the percentage of people between the ages of 20 and 44 is expected to decline. The chart and table show the distribution of population by age for Massachusetts since 1970 and the projected distribution of population by age in 2000, 2010, and 2020.

### Actual and Projected Massachusetts Population By Age Group, 1970-2020

Year	0-19	20-44	45-64	65-84	85+	Total
1970	2,082,379	1,758,934	1,211,672	584,735	51,450	5,689,170
1980	1,721,520	2,115,772	1,173,214	652,623	73,908	5,737,037
1990	1,561,017	2,353,626	1,110,013	723,766	90,238	5,838,660
2000	1,692,136	2,353,626	1,406,543	723,766	212,815	6,388,886
2010	1,732,621	2,432,794	1,810,740	731,189	278,275	6,985,619
2020	1,594,502	2,259,055	1,771,207	964,957	269,496	6,859,217

SOURCES: United States Department of Commerce, Bureau of the Census; MISER, unpublished projections.

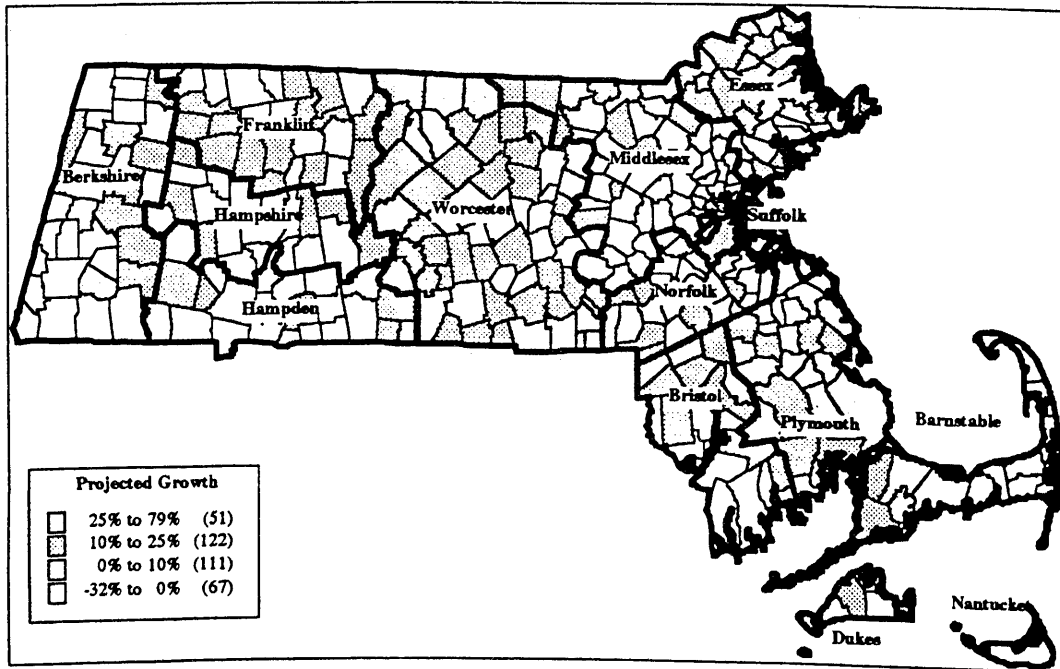
*Actual and Projected Massachusetts Population By Age Group, 1970-2020*



SOURCES: United States Department of Commerce, Bureau of the Census; MISER projections.

The following map displays projections for population growth between 1990 and 2010 in the towns of each county of Massachusetts. This map was prepared in 1995 and shows a particularly high level of projected population growth for the towns in Nantucket, Plymouth, and Worcester counties.

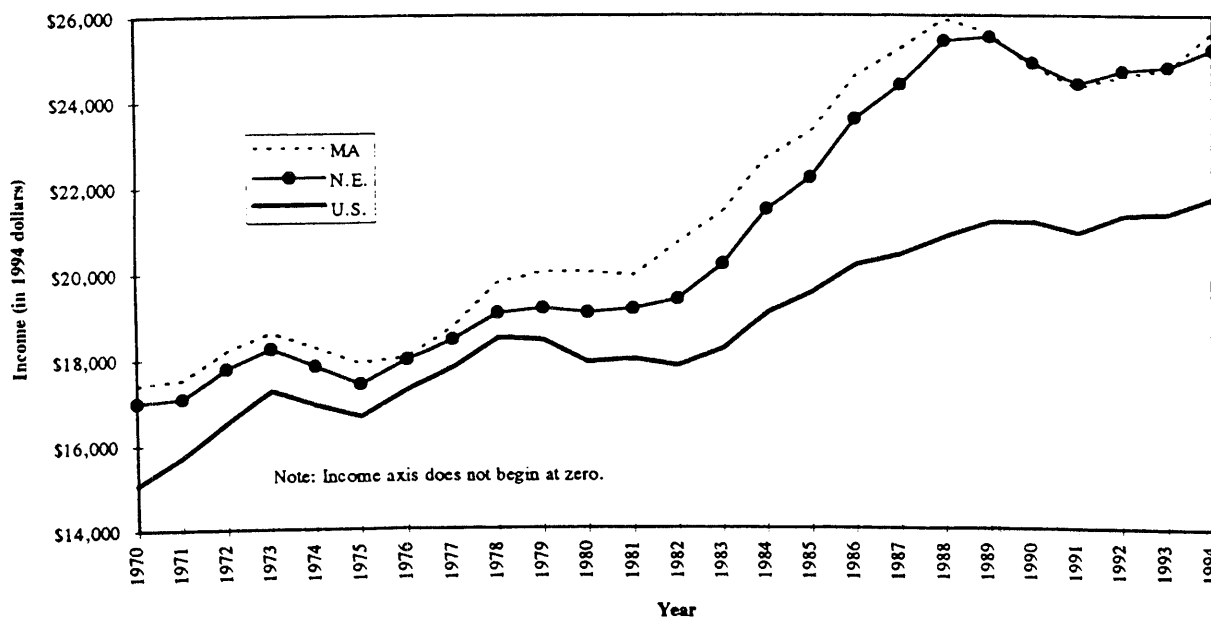
*Projected Population Growth, 1990-2010*



## PERSONAL INCOME, CONSUMER PRICES, AND POVERTY

*Personal Income.* Since 1970, real and nominal per capita income levels have been consistently higher in Massachusetts than in the United States. Between 1982 and 1988, real income levels in Massachusetts grew at an annual rate higher than that for the United States. But, since 1989, the growth in real income levels in Massachusetts has slowed to a rate below that for real income levels in the United States. In fact, between 1989 and 1991, real per capita income levels in Massachusetts actually declined. In 1994, however, real per capita income in Massachusetts jumped by 3.6 percent, the largest increase since 1986. Although in nominal terms the Massachusetts per capita personal income is the highest on record, in real terms it remains \$316 below the 1988 peak of \$25,925. In contrast, real income levels in the United States have grown at a positive rate in ten of the eleven years since 1983 and were higher in 1994 than at any time in the previous twenty-three years. Nevertheless, per capita income in Massachusetts remained considerably higher than that in the United States in 1994: \$25,609 versus \$21,699. In addition, per capita personal income in Massachusetts was fourth highest among the fifty states in 1994. The following chart illustrates real per capita personal income in Massachusetts, New England, and the United States since 1970.

*Per Capita Personal Income, 1970-1994*  
(in constant 1994 dollars)





The following table compares per capita personal income in Massachusetts, New England, and the United States for the period 1970-1994.

*Per Capita Personal Income, 1970-1994*

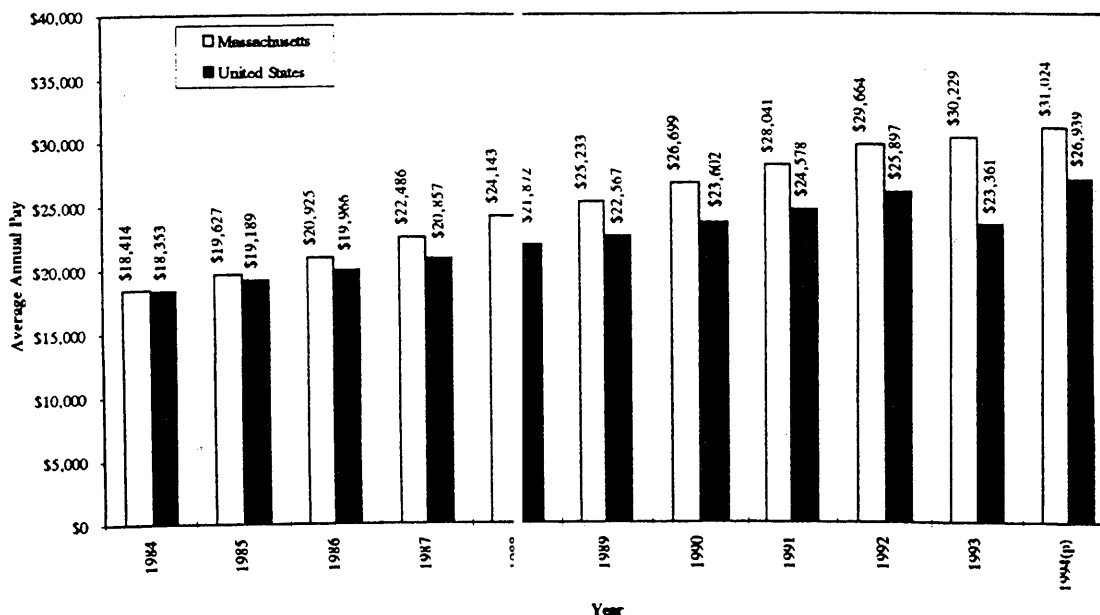
Year	Nominal Income (in current dollars)			Real Income (in 1994 dollars)			Percentage Change in Real Income		
	MA	N.E.	U.S.	MA	N.E.	U.S.	MA	N.E.	U.S.
1970	\$4,515	\$4,445	\$4,047	\$17,397	\$16,978	\$15,072			
1971	4,771	4,665	4,294	17,513	17,070	15,713	0.7%	0.5%	4.3%
1972	5,130	5,013	4,659	18,184	17,773	16,518	3.8%	4.1%	5.1%
1973	5,564	5,466	5,168	18,615	18,245	17,250	2.4%	2.7%	4.4%
1974	6,033	5,927	5,628	18,252	17,817	16,918	-1.9%	-2.3%	-1.9%
1975	6,445	6,314	6,045	17,891	17,393	16,652	-2.0%	-2.4%	-1.6%
1976	6,988	6,902	6,629	18,041	17,977	17,266	0.8%	3.4%	3.7%
1977	7,620	7,537	7,267	18,706	18,432	17,772	3.7%	2.5%	2.9%
1978	8,466	8,380	8,117	19,750	19,048	18,450	5.6%	3.3%	3.8%
1979	9,448	9,374	9,017	19,993	19,135	18,407	1.2%	0.5%	-0.2%
1980	10,659	10,582	9,940	19,989	19,032	17,878	0.0%	-0.5%	-2.9%
1981	11,805	11,729	11,009	19,919	19,123	17,949	-0.3%	0.5%	0.4%
1982	12,750	12,604	11,583	20,680	19,357	17,789	3.8%	1.2%	-0.9%
1983	13,776	13,558	12,223	21,382	20,174	18,187	3.4%	4.2%	2.2%
1984	15,326	15,034	13,332	22,674	21,444	19,016	6.0%	6.3%	4.6%
1985	16,423	16,113	14,155	23,253	22,193	19,496	2.6%	3.5%	2.5%
1986	17,796	17,418	14,906	24,569	23,552	20,156	5.7%	6.1%	3.4%
1987	19,066	18,670	15,638	25,221	24,356	20,401	2.7%	3.4%	1.2%
1988	20,787	20,276	16,610	25,925	25,401	20,808	2.8%	4.3%	2.0%
1989	21,688	21,325	17,690	25,586	25,487	21,142	-1.3%	0.3%	1.6%
1990	22,247	21,934	18,655	24,810	24,871	21,153	-3.0%	-2.4%	0.0%
1991	22,764	22,424	19,201	24,318	24,400	20,893	-2.0%	-1.9%	-1.2%
1992	23,572	23,367	20,148	24,571	24,683	21,282	1.0%	1.2%	1.9%
1993	24,411	24,149	20,809	24,730	24,767	21,342	0.6%	0.3%	0.3%
1994	25,609	25,203	21,699	25,609	25,203	21,699	3.6%	1.8%	1.7%

SOURCE: United States Department of Commerce, Bureau of Economic Analysis.

Notes: Estimated population as of April 1 of that year. Massachusetts real income is calculated by MISER using Boston CPI-U data. New England and United States real income are calculated using national CPI-U data.

Annual pay in nominal dollars has grown steadily in Massachusetts over the past ten years. Average annual pay is computed by dividing the total annual payroll of employees covered by Unemployment Insurance programs by the average monthly number of employees. Data are reported by employers covered under the Unemployment Insurance programs. While levels of annual pay were nearly equal in Massachusetts and the United States in 1984, the rate of growth in annual pay has been consistently higher in Massachusetts than in the United States in the last nine years. As a result, preliminary estimates show that the level of annual pay in Massachusetts in 1994 was fifteen percent higher than the national average: \$31,024 compared to \$26,939. The percentage change in average annual pay in Massachusetts has been consistent since 1984 at between 5 and 7 percent until the 1993 figure showing a 1.9 percent increase. The following chart shows the levels of average annual pay in Massachusetts and the United States since 1984.

*Average Annual Pay, 1984-1994*  
(in current dollars)



SOURCE: United States Department of Labor, Bureau of Labor Statistics.  
(p) = preliminary estimates.

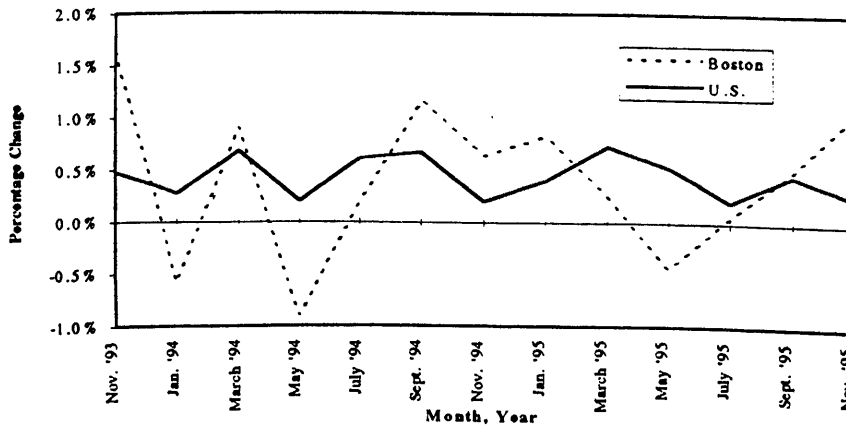
**Consumer Prices.** Higher income levels in Massachusetts relative to the rest of the United States are offset to some extent by the higher cost of living in Massachusetts. The following table presents consumer price trends for the Boston metropolitan area and the United States for the period between 1970 and November 1995. Data for each year indicate the Consumer Price Index for all urban consumers (CPI-U) and the percentage change in the Consumer Price Index for all urban consumers from the previous year. In 1994, the CPI-U for Boston increased 1.3 percent compared to an increase of 2.6 percent for the United States as a whole. The latest available data for November 1995 show that the CPI-U for the Boston metropolitan area grew at a rate of 2.3 percent from November 1994; in the United States, growth for the comparable period was 2.6 percent.

**Consumer Price Index for all Urban Consumers (CPI-U), 1970-1994**  
(1982-1984=100)

Year	CPI-U Pct. Change		CPI-U Pct. Change	
	Boston	Boston	U.S.	U.S.
1970	40.2		39.0	
1971	42.2	5.0%	40.7	4.4%
1972	43.7	3.6%	42.1	3.4%
1973	46.3	5.9%	44.7	6.2%
1974	51.2	10.6%	49.6	11.0%
1975	55.8	9.0%	54.1	9.1%
1976	60.0	7.5%	57.2	5.7%
1977	63.1	5.2%	60.9	6.5%
1978	66.4	5.2%	65.6	7.7%
1979	73.2	10.2%	73.1	11.4%
1980	82.6	12.8%	82.9	13.4%
1981	91.8	11.1%	91.4	10.3%
1982	95.5	4.0%	96.9	6.0%
1983	99.8	4.5%	99.8	3.0%
1984	104.7	4.9%	103.3	3.5%
1985	109.4	4.5%	106.9	3.5%
1986	112.2	2.6%	108.6	1.6%
1987	117.1	4.4%	112.5	3.6%
1988	124.2	6.1%	117.0	4.0%
1989	131.3	5.7%	122.6	4.8%
1990	138.9	5.8%	129.0	5.2%
1991	145.0	4.4%	134.3	4.1%
1992	148.6	2.5%	138.2	2.9%
1993	152.9	2.9%	142.1	2.8%
1994	154.9	1.3%	145.6	2.5%
Nov., 1994	156.7		149.7	
Nov., 1995	160.3	2.3%	153.6	2.6%

SOURCE: United States Department of Labor, Bureau of Labor Statistics.

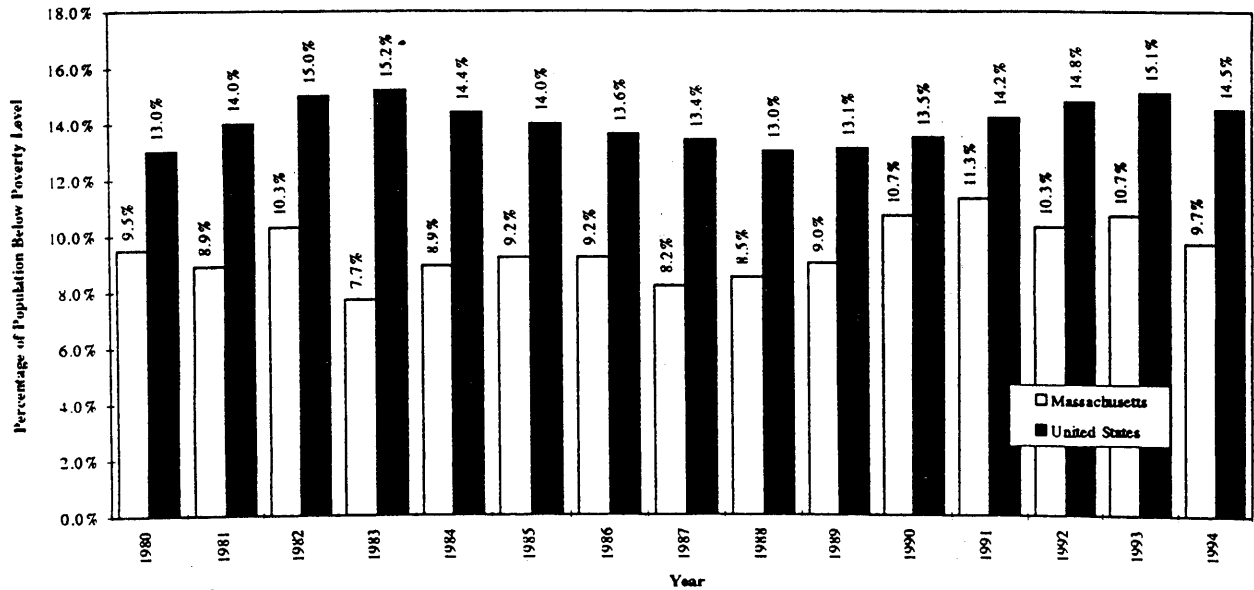
**Bi-Monthly Percentage Change in Consumer Price Index for all Urban Customers, November 1993-November 1995**



SOURCE: United States Department of Labor, Bureau of Labor Statistics.

**Poverty.** The Massachusetts poverty rate is significantly below the national average. Since 1980, the percentage of the Massachusetts population below the poverty line has varied between 7.7 percent and 11.3 percent. During the same time, the national poverty rate varied between 13.0 percent and 15.2 percent. In 1994, the poverty rate in Massachusetts was 9.7 percent while the poverty rate in the United States was 14.5 percent. Since 1980, the ratio of the Massachusetts rate of poverty to the United States rate of poverty has varied from a low of 0.51 in 1983 to a high of 0.80 in 1991; the ratio in 1994 was 0.67. These official poverty statistics are not adjusted for regional differences in the cost of living. The following chart illustrates the lower poverty rates in Massachusetts compared with the national average from 1980 through 1994.

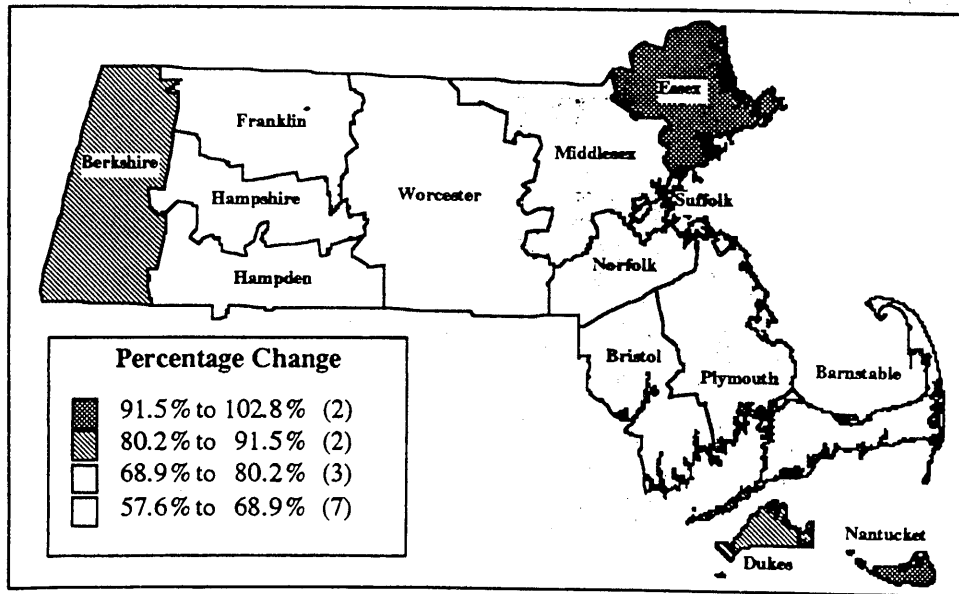
**Poverty Rate, 1980-1994**



SOURCE: United States Department of Commerce, Bureau of the Census.

The following map shows the change in personal income for all Massachusetts counties between 1983 and 1993 in current dollars. As the map indicates, the greatest percentage increase in personal income occurred in the counties of Essex and Nantucket while the smallest increase occurred in Barnstable County. In 1993, Nantucket County recorded the highest per capita personal income (\$33,991) while Franklin County recorded the lowest per capita personal income (\$18,727).

**Percentage Change in Personal Income by County, 1983-1993**  
(in current dollars)

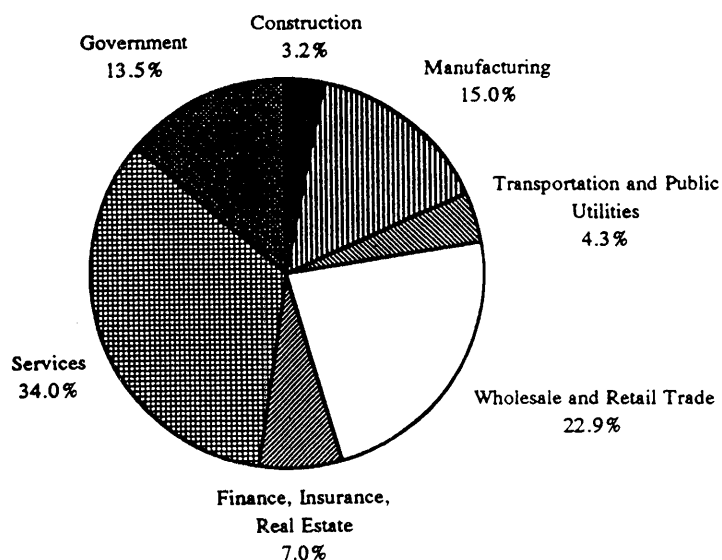


SOURCE: United States Department of Commerce, Bureau of Economic Analysis.

## EMPLOYMENT

**Employment by Industry.** The Massachusetts services sector, with 34.0 percent of the non-agricultural work force in November 1995, is the largest employment sector in the Massachusetts economy, followed by wholesale and retail trade (22.9 percent), manufacturing (15.0 percent), and government employment (13.5 percent). The following chart shows the distribution of non-agricultural employment by industry in Massachusetts for November 1995.

**Massachusetts Non-Agricultural Employment by Industry, November 1995**  
(not seasonally adjusted)



Between 1988 and 1992, total employment in Massachusetts declined 10.7 percent. The construction, manufacturing, and trade sectors experienced the greatest decreases during this time, with more modest declines taking place in the government, finance, insurance and real estate ("FIRE"), and services sectors. In 1993 and 1994, however, total employment increased by 1.6 percent and 2.2 percent, respectively. Employment levels increased in all sectors except manufacturing, and it is expected that the Central Artery/Tunnel Project and the Boston Harbor Cleanup will further contribute to the growth in employment in the construction sector. The only employment sector that did not grow in 1993 and 1994 was the manufacturing sector, which has experienced employment declines in every year since 1985. The most rapid growth in 1994 came in the construction sector and the FIRE sector, which grew at rates of 8.7 percent and 4.6 percent, respectively. Total non-agricultural employment increased by 2.2 percent from 2.841 million to 2.905 million between 1993 and 1994.

The following table demonstrates the changes in employment by sector from 1980 through 1994.

**Massachusetts Non-Agricultural Employment by Industry, 1980-1994**  
(in thousands)

Year	Construction		Manufacturing		Transportation and Public Utilities		Wholesale and Retail Trade		Finance, Insurance, Real Estate		Services		Government		Total Employment	
	Number Employed	Pct. Change	Number Employed	Pct. Change	Number Employed	Pct. Change	Number Employed	Pct. Change	Number Employed	Pct. Change	Number Employed	Pct. Change	Number Employed	Pct. Change	Number Employed	Pct. Change
1980	77.4		673.3		121.6		576.6		159.0		634.0		412.3		2634.3	
1981	79.6	2.8%	668.0	-0.8%	120.1	-1.2%	581.3	0.8%	164.8	3.6%	663.5	4.7%	394.6	-4.3%	2671.8	0.7%
1982	78.4	-1.5%	636.5	-4.7%	120.0	-0.1%	579.2	-0.4%	168.7	2.4%	683.5	3.0%	374.7	-5.0%	2642.0	-1.1%
1983	82.6	5.4%	629.0	-1.2%	118.2	-1.5%	612.7	5.8%	171.8	1.8%	705.8	3.3%	375.4	0.2%	2696.5	2.1%
1984	96.4	16.7%	667.6	6.1%	123.3	4.3%	659.0	7.6%	179.0	4.2%	754.0	6.8%	375.4	0.0%	2855.8	5.9%
1985	109.4	13.5%	649.7	-2.7%	125.4	1.7%	684.1	3.8%	188.1	5.1%	786.5	4.3%	385.3	2.6%	2930.0	2.6%
1986	123.2	12.6%	614.4	-5.4%	125.9	0.4%	709.7	3.7%	202.6	7.7%	818.4	4.1%	393.0	2.0%	2988.8	2.0%
1987	137.7	11.8%	599.1	-2.5%	131.0	4.1%	723.4	1.9%	217.9	7.6%	853.9	4.3%	401.2	2.1%	3065.8	2.6%
1988	142.1	3.2%	584.7	-2.4%	133.6	2.0%	739.4	2.2%	221.5	1.7%	896.6	5.0%	411.3	2.5%	3130.8	2.1%
1989	126.8	-10.8%	561.1	-4.0%	128.3	-4.0%	740.5	0.1%	217.3	-1.9%	924.1	3.1%	408.8	-0.6%	3108.6	-0.7%
1990	101.1	-20.3%	521.3	-7.1%	129.9	1.2%	700.1	-5.5%	213.3	-1.8%	915.7	-0.9%	402.2	-1.6%	2984.8	-4.0%
1991	78.8	-22.1%	485.0	-7.0%	123.4	-5.0%	650.6	-7.1%	201.8	-5.4%	890.5	-2.8%	389.9	-3.1%	2821.2	-5.5%
1992	73.6	-6.6%	465.7	-4.0%	121.4	-1.6%	640.5	-1.6%	196.7	-2.5%	913.5	2.6%	382.6	-1.9%	2795.1	-0.9%
1993	80.2	9.0%	455.1	-2.3%	124.0	2.1%	647.5	1.1%	199.7	1.5%	948.0	3.8%	387.5	1.3%	2841.2	1.6%
1994	87.2	8.7%	448.6	-1.4%	126.6	2.1%	666.8	3.0%	208.8	4.6%	974.2	2.8%	391.5	1.0%	2905.0	2.2%

SOURCE: Massachusetts Department of Employment and Training.

Notes: Annual averages of monthly figures. Data are seasonally adjusted and subject to revision. Sum of the parts may not equal totals due to rounding.

The following table presents changes in non-agricultural employment by sector between November 1994 and November 1995. Total non-agricultural employment increased by 1.0 percent and average weekly manufacturing earnings also rose 2.8 percent over that period.

**Massachusetts Non-Agricultural Employment by Industry,  
November 1994–November 1995**  
(in thousands)

<i>Employment Sector</i>	<i>Nov. 1994</i>	<i>Pct. of Total</i>	<i>Nov. 1995</i>	<i>Pct. of Total</i>	<i>Pct. Change 1994-1995</i>
Construction	95.0	3.2%	96.3	3.2%	1.4%
Manufacturing	450.5	15.1%	451.8	15.0%	0.3%
Transportation and Public Utilities	128.3	4.3%	128.5	4.3%	0.2%
Wholesale and Retail Trade	687.9	23.1%	687.5	22.9%	-0.1%
Finance, Insurance, Real Estate	208.9	7.0%	210.5	7.0%	0.8%
Services	999.6	33.6%	1,022.2	34.0%	2.3%
Government	403.0	13.5%	405.2	13.5%	0.5%
<b>Total Employment</b>	<b>2974.7</b>	<b>100.0%</b>	<b>3003.6</b>	<b>100.0%</b>	<b>1.0%</b>
<b>Average Weekly Manufacturing Earnings</b>	<b>\$530.01</b>		<b>\$544.82</b>		<b>2.8%</b>

SOURCE: Massachusetts Department of Employment and Training.

Notes: Figures are preliminary and subject to revision. Sum of the parts may not equal totals due to rounding. Figures are not seasonally adjusted.

**Services Employment.** The services sector is the largest sector in the Massachusetts economy in terms of number of employees. This sector includes the categories of health services, business services, educational services, engineering and management services, and social services. After moderate declines in 1990 and 1991, employment levels in the services sector reached new highs in 1993. Between November 1994 and November 1995, the services sector saw an increase in employment of 2.3 percent, and in November 1995 services sector employment (not seasonally adjusted) was 1,022,200, representing 34.0 percent of total non-agricultural employment. Health services is the largest component of the services sector in terms of employment. In 1990, the health services sector numbered 270,900 workers, with 128,600 of those employed by hospitals. Health services employment continued to grow during the economic downturn in the early 1990s and by 1993 had reached 299,900 workers. Between November 1994 and November 1995, health services employment increased 2.8 percent to 319,700, with 133,600 employed in hospitals. The fastest growing category (and the second largest in terms of number of employees) within the services sector between November 1994 and November 1995 was the business services category, which grew at a rate of 3.8 percent. An area with relatively high wages, business services employed 17.6 percent of services sector workers in November 1995.

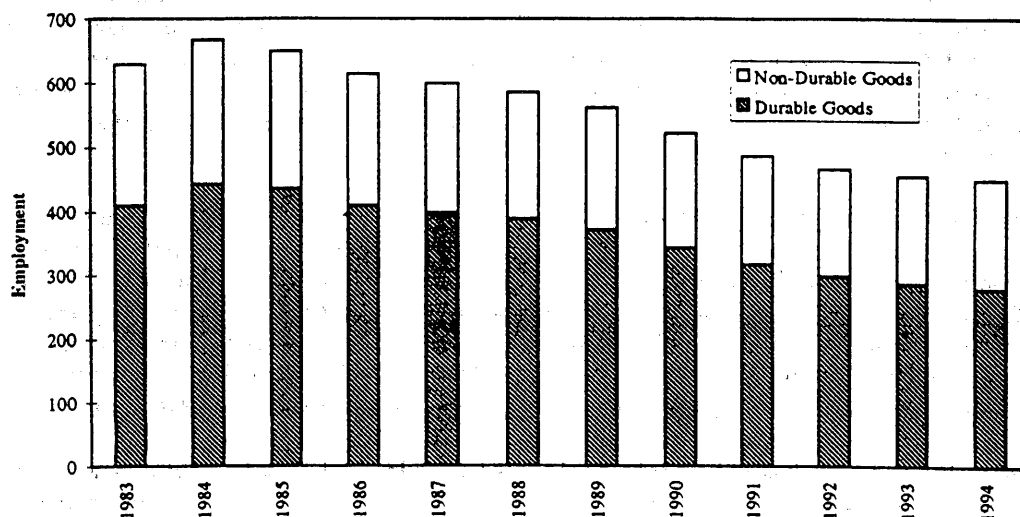
**Wholesale and Retail Trade Employment.** In the mid-1980s the trade sector was an area of strong job growth, boosted by a growing export sector. Trade employment declined between 1990 and 1992 but grew by 1.1 percent between 1992 and 1993 and 3.3 percent between 1993 and 1994. In November 1995, retail and wholesale trade was the second largest employment sector in Massachusetts with 687,500 employees, 0.1 percent below November 1994 levels. The retail trade sector, which employed 76.2 percent of these employees, declined by 0.4 percent between November 1994 and November 1995.

**Manufacturing Employment.** Like many industrial states, Massachusetts has seen a steady diminution of its manufacturing jobs base over the last decade. Total employment in the manufacturing sector declined in every year between 1984 and 1994, falling a total of 32.8 percent. However, with the end of the recession and the beginning of recovery in 1992, the rate of overall decline has slowed significantly, from over 7 percent in both 1990 and 1991 to 2.6 percent in 1993 and 1.4 percent in 1994. Between November 1994 and November 1995, manufacturing employment grew 0.3 percent.



Employment in the manufacture of non-durable goods, which had declined in every year since 1984, grew in both 1993 and 1994 at rates of 1.2 percent and 1.1 percent, respectively.

**Manufacturing Employment in Massachusetts, 1983-1994**  
(in thousands)



**Manufacturing Establishment Employment by Industry in Massachusetts, 1983-1994**  
(selected industries, in thousands)

	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994
<b>Durable Goods</b>	409.2	443.5	436.0	409.1	398.0	388.1	372.1	342.7	317.0	299.6	287.0	278.6
Percentage Change	-1.3%	8.4%	-1.7%	-6.2%	-2.7%	-2.5%	-4.1%	-7.9%	-7.5%	-5.5%	-4.2%	-2.9%
Primary Metals	15.0	16.5	15.8	15.8	15.6	12.9*	12.3	11.3	10.3	9.3	9.1	9.4
Fabricated Metals	46.1	48.3	45.3	42.8	41.7	45.0*	43.2	40.9	37.9	36.2	35.6	35.7
Industrial Machinery	111.9	123.0	119.0	107.4	102.3	100.0	95.8	85.2	76.6	72.5	67.3	63.2
Electronic & Elec.	97.9	109.7	111.3	107.4	105.2	82.2*	79.3	72.9	68.5	63.9	59.9	58.9
Transportation Equip.	35.0	40.3	41.6	37.1	35.4	32.4	30.6	27.8	26.0	24.1	21.9	19.4
Stone, Clay, & Glass	11.3	11.8	11.5	10.8	10.7	10.7	10.0	8.7	7.8	7.9	8.0	8.0
Instruments	57.7	59.1	58.0	55.1	54.5	72.4*	71.2	69.4	65.6	61.6	60.4	58.7
<b>Non-Durable Goods</b>	219.7	224.1	213.6	205.3	201.1	196.5	189.0	178.6	168.0	166.1	168.1	170.0
Percentage Change	-1.1%	2.0%	-4.7%	-3.9%	-2.0%	-2.3%	-3.8%	-5.5%	-5.9%	-1.1%	1.2%	1.1%
Apparel	35.9	36.0	31.7	27.8	25.4	23.7	22.0	19.2	17.7	17.7	17.2	16.5
Food & Kindred Prod.	24.1	24.0	23.1	22.7	21.4	21.0	20.5	20.1	19.6	19.3	19.8	20.6
Chemicals	16.8	17.8	17.6	17.2	18.0	18.6	18.4	17.7	17.3	16.5	16.9	17.9
Printing & Publishing	48.1	51.7	53.3	54.2	55.6	55.8	55.0	52.2	48.9	47.3	47.5	48.1
Textile Mill Prod.	20.2	20.2	18.8	17.7	17.1	16.3	15.5	14.6	14.1	14.6	15.1	15.3
Paper & Allied Prod.	26.0	26.9	25.9	24.8	24.7	24.3	23.4	22.5	21.1	20.7	20.3	20.1
Rubber & Misc. Plastics	30.5	31.0	29.3	29.4	28.7	26.9	25.3	23.8	22.1	22.9	24.4	24.7
<b>Total Man. Employ.</b>	629.0	667.6	649.7	614.4	599.1	584.7	561.1	521.3	485.0	465.7	455.1	448.6
Percentage Change	-1.2%	6.1%	-2.7%	-5.4%	-2.5%	-2.4%	-4.0%	-7.1%	-7.0%	-4.0%	-2.3%	-1.4%

SOURCE: Massachusetts Department of Employment and Training.

\* Break in series; 1988 and subsequent data not comparable with previous years for this industry.

**Government Employment.** Federal, state, and local government employed 405,200 workers in November of 1995, which accounted for 13.5 percent of total non-agricultural employment in Massachusetts. The majority of these workers (249,200) were employed in local government, which grew at a rate of 1.5 percent between November 1994 and November 1995.

**Finance, Insurance, and Real Estate Employment.** While the Finance, Insurance and Real Estate ("FIRE") sector experienced 23.7 percent growth in employment between 1984 and 1988, there was an 11.2 percent decline in employment between 1988 and 1992. Despite increases of 1.5 percent in 1993 and 4.6 percent in 1994, employment levels in this sector remain well below 1988 levels. As of November 1995, total employment in the FIRE sector was 210,500, an increase of 0.8 percent over November 1994 levels.

**Construction Employment.** Fueled by the general growth of the rest of the Massachusetts economy, employment in the construction industry experienced dramatic growth in the first part of the 1980s, increasing by more than 80 percent between 1982 and 1988. This trend reversed direction between 1988 and 1992, when employment in the construction industry declined nearly 50 percent. Since 1993, with the return to general growth in the Massachusetts economy, employment in construction has rebounded with growth rates of 9.0 percent in 1993 and 8.7 percent in 1994. In November 1995, the construction sector employed 96,300 people, an increase of 1.4 percent over November 1994 levels.

**Largest Employers in Massachusetts.** The following table lists, in alphabetical order, the twenty-five largest private sector employers in Massachusetts in 1995 based upon employment data for the second quarter of 1995. The group has remained relatively stable; two of the employers on the 1994 list (which contained twenty-six companies because there was no significant difference between the 25th and 26th largest employers), Market Basket, Inc. and New England Medical Centers Hospital, fell from the list and were replaced by Beth Israel Hospital.

#### ***Twenty-Five Largest Private Sector Massachusetts Employers in 1995***

American Telephone & Telegraph	Massachusetts Institute of Technology
Bank of Boston	May Department Stores Company
Beth Israel Hospital	New England Telephone & Telegraph
Blue Cross of Massachusetts, Inc.	Polaroid Corporation
Boston University	Purity Supreme Inc.
Brigham & Women's Hospital Inc.	Raytheon Company
Digital Equipment Corporation	S & S Credit Company, Inc.
Friendly's Ice Cream Corporation	Sears, Roebuck & Company
General Electric Company	Shaw's Supermarket, Inc.
Harvard Community Health Plan, Inc.	Star Markets Company
Harvard University	State Street Bank & Trust Company
John Hancock Mutual Life Insurance Company	United Parcel Service, Inc.
Massachusetts General Hospital	

SOURCE: Massachusetts Department of Employment and Training.

**Unemployment.** Between 1979 and 1989, the Massachusetts unemployment rate was significantly lower than the national average. Between 1990 and 1992, however, the unemployment rate in Massachusetts was considerably higher than the national average. In 1991, the unemployment rate in Massachusetts was 32.9 percent higher than the national average: 9.0 percent compared to 6.7 percent. Although employment was slow to respond to the beginning of the recovery in 1992, unemployment rates in Massachusetts since 1993 have declined faster than the national average. As a result, the average monthly unemployment rate in Massachusetts for 1993 was only slightly higher than the national average (6.9 percent compared to 6.8 percent) and the unemployment rate in Massachusetts in 1994 was slightly below the national average (6.0 percent compared to 6.1 percent). Due to the Current Population Survey redesign in 1994, strict comparisons between 1994 data and data for earlier years are not advisable.

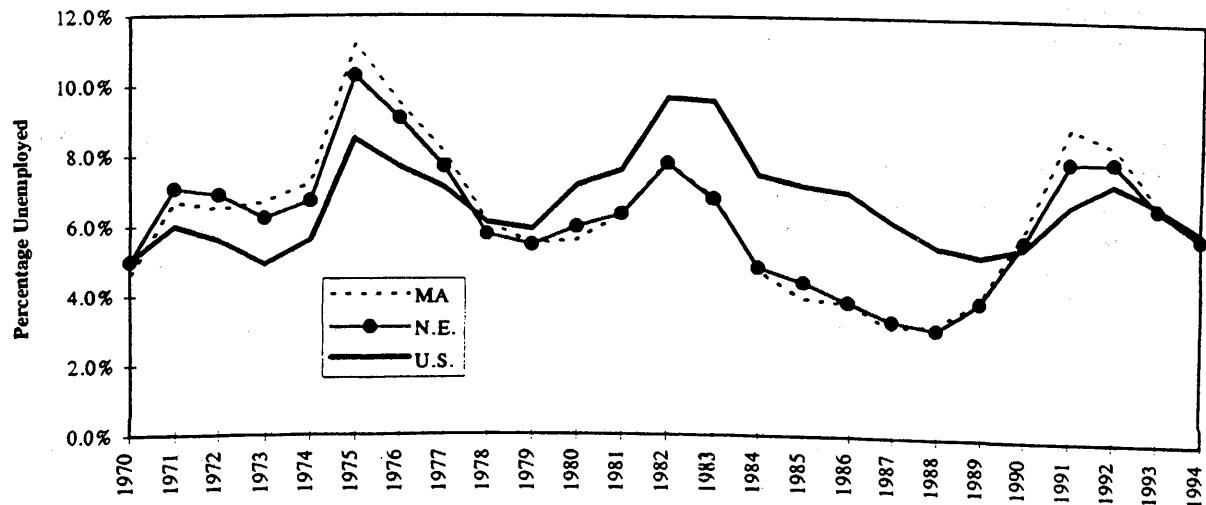
The following table compares the annual civilian labor force, the number unemployed, and unemployment rate averages of Massachusetts, the New England states, and the United States between 1970 and 1994.

**Annual Average Civilian Labor Force and Unemployment, 1970-1994**  
(in thousands)

Year	Civilian Labor Force			Unemployed			Unemployment Rate			MA Rate as Pct. of U.S.
	MA	N.E.	U.S.	MA	N.E.	U.S.	MA	N.E.	U.S.	
1970	2,465	5,129	82,796	114	256	4,127	4.6%	5.0%	5.0%	92.0%
1971	2,459	5,157	84,376	164	364	5,022	6.7%	7.1%	6.0%	111.7%
1972	2,487	5,261	87,011	161	363	4,876	6.5%	6.9%	5.6%	116.1%
1973	2,557	5,387	89,411	171	336	4,359	6.7%	6.2%	4.9%	136.7%
1974	2,636	5,512	91,976	190	369	5,173	7.2%	6.7%	5.6%	128.6%
1975	2,725	5,634	93,770	306	581	7,940	11.2%	10.3%	8.5%	131.8%
1976	2,727	5,717	96,151	259	519	7,398	9.5%	9.1%	7.7%	123.4%
1977	2,754	5,816	98,984	223	447	6,967	8.1%	7.7%	7.1%	114.1%
1978	2,815	5,908	102,233	171	339	6,187	6.1%	5.8%	6.1%	100.0%
1979	2,870	6,100	104,961	159	332	6,135	5.5%	5.5%	5.9%	93.2%
1980	2,867	6,166	106,974	161	367	7,671	5.6%	6.0%	7.2%	78.1%
1981	2,946	6,262	108,676	187	399	8,278	6.4%	6.4%	7.6%	83.4%
1982	2,993	6,338	110,224	237	496	10,715	7.9%	7.8%	9.7%	81.3%
1983	2,978	6,363	111,515	205	433	10,694	6.9%	6.8%	9.6%	71.5%
1984	3,048	6,548	112,532	145	317	8,529	4.8%	4.8%	7.5%	63.5%
1985	3,053	6,632	115,467	120	292	8,313	4.0%	4.4%	7.2%	54.9%
1986	3,060	6,721	117,846	117	265	8,245	3.8%	3.9%	7.0%	54.9%
1987	3,087	6,829	119,853	98	229	7,414	3.2%	3.3%	6.2%	51.0%
1988	3,155	6,913	121,671	104	216	6,697	3.3%	3.1%	5.5%	59.7%
1989	3,180	7,002	123,851	127	269	6,524	4.0%	3.8%	5.3%	76.2%
1990	3,242	7,136	124,787	194	404	6,874	6.0%	5.7%	5.5%	108.2%
1991	3,180	7,083	125,303	285	564	8,426	9.0%	8.0%	6.7%	132.9%
1992	3,162	7,066	126,982	268	563	9,384	8.5%	8.0%	7.4%	114.5%
1993	3,180	7,037	128,040	218	475	8,734	6.9%	6.8%	6.8%	100.7%
1994	3,179	6,971	131,056	191	412	7,996	6.0%	5.9%	6.1%	98.4%

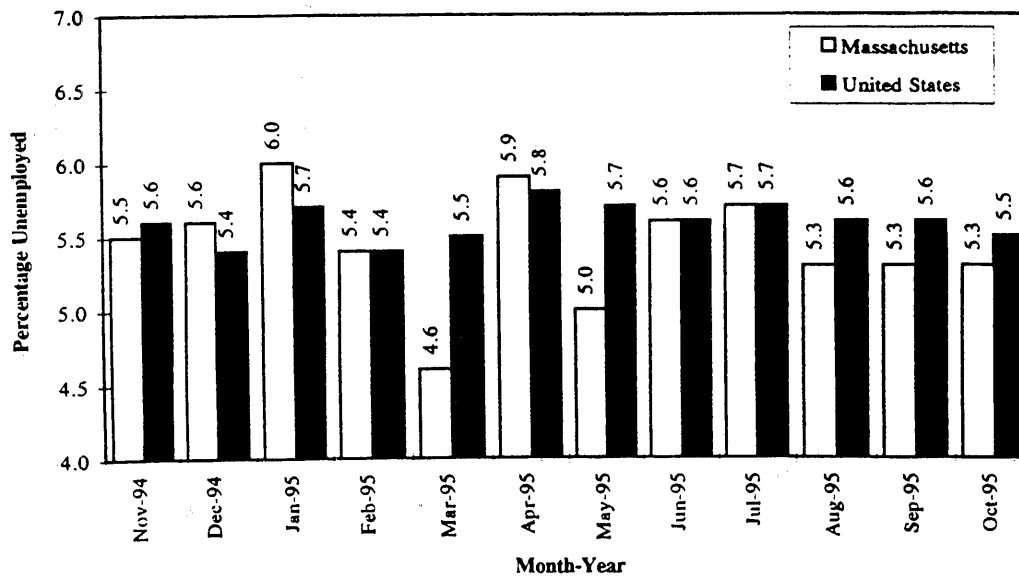
SOURCES: Massachusetts Department of Employment and Training; United States Department of Labor, Bureau of Labor Statistics.  
Note: 1994 data reflect the redesigned Current Population Survey and are not strictly comparable to data for earlier years.

**Annual Average Unemployment Rate, 1970-1994**



Despite several sharp monthly increases, the unemployment rate in Massachusetts has generally hovered between 5 and 6 percent over the past twelve months. The Massachusetts unemployment rate remained stable at 5.3 percent in August, September, and October of 1995, compared to a rate of 6.4 percent in October 1994. The unemployment rate in New England was 5.0 percent in October 1995, 5.3 percent in September 1995, and 5.8 percent in October 1994. The United States unemployment rate was 5.5 percent in October 1995, 5.6 percent in September 1995, and 5.7 percent in October 1994. The following chart shows the unemployment rates for Massachusetts and the United States for each of the past twelve months.

*Monthly Unemployment Rate, November 1994–October 1995*



SOURCE: Massachusetts Department of Employment and Training.  
 Note: Unemployment rate axis does not begin at zero.

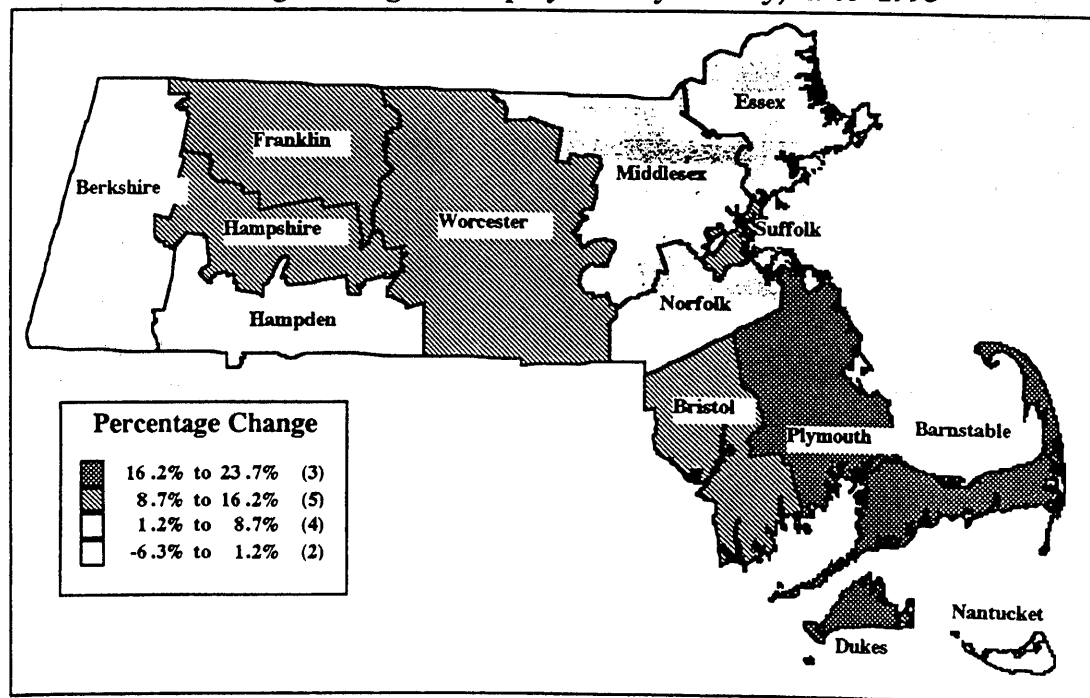
**Unemployment Compensation Trust Fund.** The unemployment insurance system is a federal-state cooperative program established by the Social Security Act and the Federal Unemployment Tax Act to provide for the payment of benefits to eligible individuals when they are unemployed through no fault of their own. Benefits are paid from the Commonwealth's Unemployment Compensation Trust Fund, financed through employer contributions.

In September 1991 the reserves in the fund were exhausted due to the continued high level of unemployment. Between September 1991 and May 1994, benefit payments in excess of contributions were financed through repayable advances from the federal unemployment loan account. Legislation enacted in 1992 significantly increased employer contributions in order to reduce advances from the federal loan account and 1993 contributions exceeded benefit outlays by more than \$200 million. All federal advances were paid in May 1994 and interest on federal advances of \$4.7 million was paid in September. Since that time, the balance in the trust fund has been positive. As of October 31, 1995, the private contributory sector of the Massachusetts Unemployment Trust Fund contained a balance of \$469 million.

The Department of Employment and Training's October 1995 quarterly report indicates that the additional increases in contributions provided by the 1992 legislation and additional legislation in 1994 should result in a balance of \$398 million in the private contributory sector of the Unemployment Compensation Trust Fund by December 31, 1995 and \$1.40 billion by the end of 1999.

**Employment and Unemployment by County.** Employment levels have shown considerable regional variation within Massachusetts. Between 1983 and 1993, employment levels within three Massachusetts counties increased between 16.2 percent and 23.7 percent while employment levels in two counties grew at rates below 1.2 percent. The following map shows the percentage change in the number of people employed within each county in Massachusetts between 1983 and 1993. Because of changes in the Current Population Survey, comparisons between 1994 employment levels and employment levels from earlier years may be misleading; 1993 is the most recent year for which data can be reliably compared to data from earlier years.

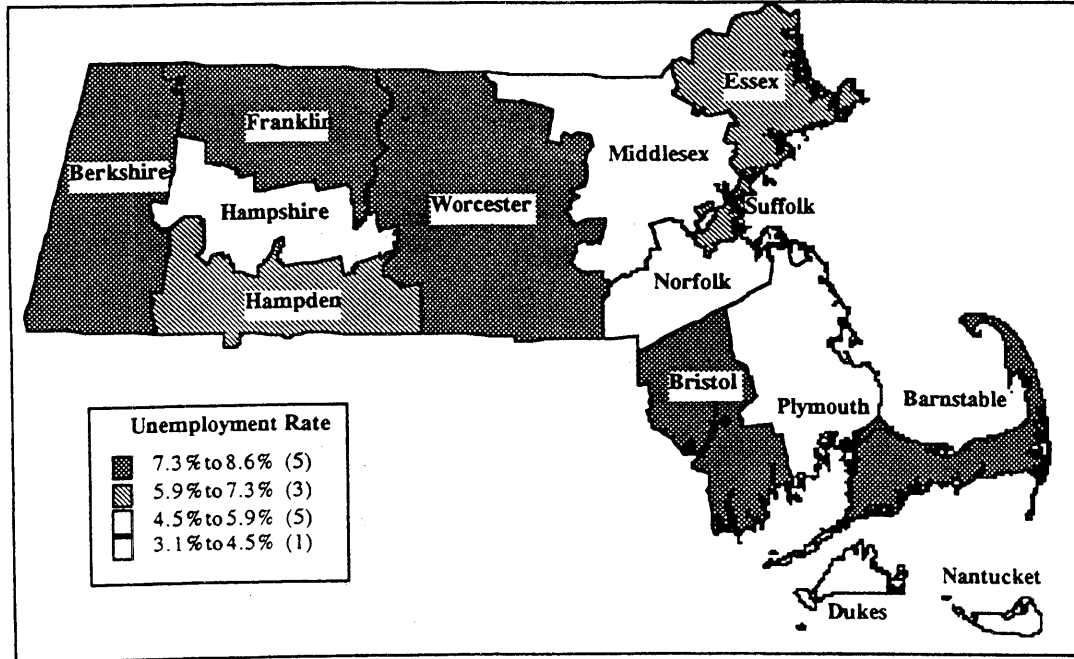
**Percentage Change in Employment by County, 1983-1993**



SOURCE: Massachusetts Department of Employment and Training.

Despite an overall unemployment rate that was lower than the national average of 6.1 percent in 1994, Massachusetts showed considerable intrastate variation in unemployment, with five counties experiencing unemployment rates between 7.3 percent and 8.6 percent and six counties experiencing unemployment rates below 5.9 percent. The following map shows the average annual unemployment rate by county in 1994.

*Unemployment Rate by County, 1994*

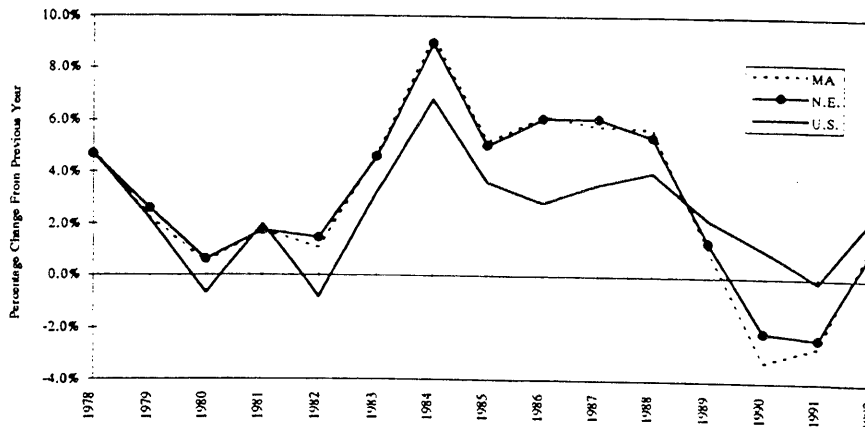


SOURCE: Massachusetts Department of Employment and Training.

## ECONOMIC BASE AND PERFORMANCE

Between 1982 and 1988, the economies of Massachusetts and New England were among the strongest performers in the nation, with growth rates considerably higher than those for the national economy as a whole. Since 1989, however, both Massachusetts and New England have experienced growth rates significantly below the national average. An economic recession in 1990 and 1991 caused negative growth rates in Massachusetts and New England. In 1992, the Gross State Product for Massachusetts grew at a rate of 1.5 percent while the total Gross State Product for the United States grew at a rate of 2.5 percent. The Massachusetts economy has been the strongest in New England, making up an average of 47 percent of New England's total Gross State Product for nearly two decades. Massachusetts' percentage of the United States Gross State Product has varied between 2.5 to 3.0 percent during the same time frame.

*Percentage Change in Real Gross State Product, 1978-1992*



The table below indicates the Gross State Product for Massachusetts, the New England states, and the United States. The United States figure is the sum of the fifty U.S. states.

*Gross State Product, 1977-1992  
(millions of constant 1987 dollars)*

Year	Massachusetts		New England		United States	
	GSP	Percentage Change	GSP	Percentage Change	Total GSP	Percentage Change
1977	\$88,461		\$185,042		\$3,478,517	
1978	\$92,734	4.8%	\$193,750	4.7%	\$3,643,391	4.7%
1979	\$94,824	2.3%	\$198,748	2.6%	\$3,722,513	2.2%
1980	\$95,275	0.5%	\$199,935	0.6%	\$3,697,140	-0.7%
1981	\$96,930	1.7%	\$203,377	1.7%	\$3,769,425	2.0%
1982	\$97,980	1.1%	\$206,324	1.4%	\$3,738,155	-0.8%
1983	\$102,561	4.7%	\$215,813	4.6%	\$3,859,508	3.2%
1984	\$112,021	9.2%	\$235,115	8.9%	\$4,121,329	6.8%
1985	\$117,816	5.2%	\$246,981	5.0%	\$4,270,981	3.6%
1986	\$125,054	6.1%	\$261,912	6.0%	\$4,391,529	2.8%
1987	\$132,276	5.8%	\$277,795	6.1%	\$4,548,182	3.6%
1988	\$139,774	5.7%	\$292,636	5.3%	\$4,731,458	4.0%
1989	\$141,255	1.1%	\$296,520	1.3%	\$4,836,446	2.2%
1990	\$136,701	-3.2%	\$290,314	-2.1%	\$4,888,324	1.1%
1991	\$133,111	-2.6%	\$283,576	-2.3%	\$4,881,756	-0.1%
1992	\$135,079	1.5%	\$286,992	1.2%	\$5,001,445	2.5%

SOURCE: U.S. Department of Commerce, Bureau of Economic Analysis.

Note: New England and United States figures include Massachusetts and New England GSP, respectively.

The commercial base of Massachusetts is anchored by the seventeen 1995 *Fortune* 500 industrial and service firms with headquarters within the state, as the following table indicates. The 1995 *Fortune* 500 combined the traditional industrial 500 ranking with the previously separate service 500 ranking. The *Fortune* 500 firms are ranked according to total revenues in 1994.

### *Massachusetts Companies in the 1995 Fortune 500*

Ranking		Company	Industry	1994 revenues (in millions)
1995	1994			
65	29	Digital Equipment (Maynard)	Computers and Office Equipment	\$13,450.8
109	52	Raytheon (Lexington)	Electronics and Electrical Equipment	10,012.9
128	F-21	Liberty Mutual Ins. Group (Boston)	Insurance (Mutual)	8,985.5
194	99	Gillette (Boston)	Metal Products	5,410.8
209	L-9	John Hancock Mutual Life Ins. (Boston)	Insurance (Mutual)	5,669.1
218	L-11	Mass. Mutual Life Ins. (Springfield)	Insurance (Mutual)	5,332.5
256	B-19	Bank of Boston Corp. (Boston)	Commercial Banks	4,546.8
296	R-35	TJX (Framingham)	Specialist Retailers	3,842.8
301	R-38	Stop & Shop (Quincy)	Food and Drug Stores	3,789.0
310	R-37	Waban (Natick)	Specialist Retailers	3,650.3
313	S-27	Harcourt General (Chestnut Hill)	General Merchandisers	3,640.0
347	S-43	Reebok (Stoughton)	Wholesalers	3,287.6
348	F-37	Allmerica Financial (Worcester)	Insurance (Mutual)	3,273.3
429	176	EG & G (Wellesley)	Scientific, Photographic	2,632.6
480	206	Polaroid (Cambridge)	Scientific, Photographic	2,312.5
491	--	New England Electric Sys. (Westborough)	Electric and Gas Utilities	2,243.0
492	L-22	New England Mutual Life Ins. (Boston)	Insurance (Mutual)	2,238.3

Industry key: B-Banking; F-Financial; L-Life Insurance; R-Retailers; S-Service.

SOURCE: *Fortune*, May 15, 1995.

The composition of the *Fortune* 500 changed dramatically in 1995 with the inclusion of 267 firms from *Fortune's* service 500. Twelve of the seventeen Massachusetts companies are new to the list, while nine companies were eliminated from the list. Eleven of the twelve new firms on the list were from the service 500. The only industrial company added to the list is New England Electric Systems. The companies no longer on the 500 were not necessarily removed due to sagging economic performance but because of the new criteria for the *Fortune* 500.

Several Massachusetts companies on the 1994 list were eliminated from the 1995 list. Following is a list of these companies, their new positions on the *Fortune* 1000, and their respective rankings in the 1994 *Fortune* 500: Cabot (F95-599; F94-263), Thermo Electron (F95-629; F94-309), Wang Laboratories (F95-943; F94-311), Ocean Spray (F95-off; F94-332), Data General (F95-791; F94-348), Kendall International (F95-off; F94-403), EMC (F95-690; F94-412), Stanhome (F95-991; F94-426), Analog Devices (F95-off; F94-468).

Along with the seventeen 1995 *Fortune* 500 companies with headquarters in Massachusetts, seven of *Fortune's* 1995 Top 100 fastest growing companies in the country are based in Massachusetts. In both 1994 and 1995, Massachusetts ranks third among states in number of firms on the list, trailing only California (27 firms) and Texas (12). The 1995 *Fortune* Top 100 firms are ranked according to annual growth rates.



**Massachusetts Companies in the 1995 Fortune Top 100**  
(Fortune Top 100 measures fastest growing U.S. companies)

Ranking		Company	Industry	Annual Growth Rate	Sales
1995	1994				Previous Four Quarters (in Millions)
20	9	Avid Technology (Tewksbury)	Digitized film, video, audio editing	163%	\$203.7
32	—	Primark (Waltham)	On-line data delivery	122%	\$477.0
56	—	Cryk (Gloucester)	Custom promotional materials	92%	\$401.9
68	48	Parametric Technology (Waltham)	Computer software	82%	\$262.8
78	81	Chipcom (Southborough)	Computer equipment	76%	\$267.8
86	70	FTP Software (North Andover)	Computer software	73%	\$93.2
97	64	Pictoretel (Danvers)	Videoconferencing systems	70%	\$255.2

SOURCE: *Fortune*, April 17, 1995.

The current restructuring of the Massachusetts economy due to the economic recovery has brought new business opportunities to many. The incorporation of new businesses in Massachusetts reached a peak in 1986 and declined steadily over the next five years. Since 1992, however, the number of new business incorporations has grown steadily, with new business incorporations in 1994 reaching their highest level since 1989.

According to Dun & Bradstreet, the business failure rate in Massachusetts, which was significantly lower than the national average between 1984 and 1989, increased to a rate slightly higher than that of the United States between 1990 and 1993. In 1994, however, the failure rate for Massachusetts was lower than that for the nation as a whole: 0.4 percent compared to 0.9 percent. The following table shows the total number of existing businesses, business incorporations, and business failures for Massachusetts, New England, and the United States since 1980 (total existing businesses, new business incorporations, and business failures are derived from different and unrelated data sources and survey techniques and should not be compared as if they constitute a self-contained, closed group of data).

**Business Failures and Incorporations, 1980-1994**

Year	Total Existing Businesses			New Business Incorporations			Business Failures			Failure Rate		
	MA	N.E.	U.S.	MA	N.E.	U.S.	MA	N.E.	U.S.	MA	N.E.	U.S.
1980	NA	NA	NA	11,291	25,328	533,520	235	464	11,742	NA	NA	NA
1981	NA	NA	NA	12,625	28,134	581,242	226	553	15,694	NA	NA	NA
1982	NA	NA	NA	11,827	26,484	566,942	331	650	24,908	NA	NA	NA
1983	NA	NA	NA	12,599	28,723	600,420	398	831	31,334	NA	NA	NA
1984	123,021	276,551	4,867,102	14,159	32,027	634,991	513	1,203	52,078	0.4%	0.4%	1.1%
1985	125,551	284,259	4,978,521	15,801	37,943	664,235	683	1,228	57,253	0.5%	0.4%	1.2%
1986	129,464	291,842	5,134,666	17,321	41,940	702,738	725	1,109	61,616	0.6%	0.4%	1.2%
1987	150,714	340,333	5,991,274	17,222	42,027	685,572	633	1,021	61,111	0.4%	0.3%	1.0%
1988	142,307	328,750	5,826,224	16,438	40,251	685,095	555	1,052	57,097	0.4%	0.3%	1.0%
1989	175,227	442,068	7,747,846	14,078	35,299	676,565	771	1,282	50,361	0.4%	0.3%	0.7%
1990	180,471	441,000	7,993,026	12,465	31,383	647,386	1,913	3,087	60,747	1.1%	0.7%	0.8%
1991	218,384	514,000	8,237,383	11,706	28,864	628,604	2,839	5,654	88,140	1.3%	1.1%	1.1%
1992	222,867	531,111	8,824,454	12,197	28,686	666,800	3,031	6,214	97,069	1.4%	1.2%	1.1%
1993	200,889	476,607	7,902,110	12,850	30,233	706,537	2,712	5,339	86,133	1.3%	1.1%	1.1%
1994	213,980	500,933	8,316,279	14,065	30,705	741,657	2,097	3,757	71,520	0.4%	0.8%	0.9%

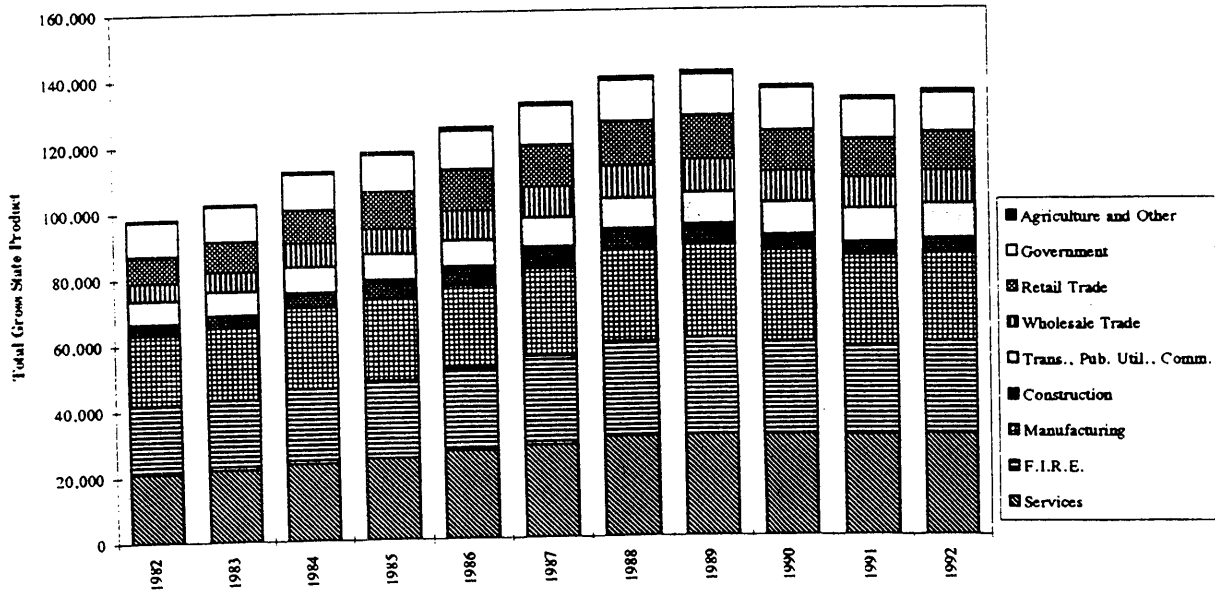
SOURCE: The Dun & Bradstreet Corporation, Department of Economic Analysis.

NA=Data not available for these years.

## Economic Base and Performance – Sector Detail

While the economy of Massachusetts is diversified among several industrial and non-industrial sectors, the three largest sectors of the economy contributed a higher percentage of the total Massachusetts Gross State Product in 1992 than they have in any year since 1982. In 1992, the three largest sectors of the Massachusetts economy—services, manufacturing, and FIRE—contributed 63.5 percent of the total Massachusetts Gross State Product while the remaining six sectors contributed 36.5 percent. In 1982, in contrast, these same three largest sectors contributed 46.5 percent of the total Massachusetts Gross State Product. The data below show the contribution to the Massachusetts real Gross State Product of several industrial and non-industrial sectors.

*Sector Composition of Massachusetts Gross State Product, 1982-1992*  
(millions of 1987 constant dollars)



*Gross State Product by Industry in Massachusetts, 1982-1992*  
(millions of 1987 constant dollars)

<i>Industrial Sector</i>	<i>1982</i>	<i>1983</i>	<i>1984</i>	<i>1985</i>	<i>1986</i>	<i>1987</i>	<i>1988</i>	<i>1989</i>	<i>1990</i>	<i>1991</i>	<i>1992</i>
Agriculture	\$543	\$648	\$640	\$774	\$977	\$999	\$982	\$913	\$916	\$992	\$1,020
Construction	3,491	3,828	4,669	5,511	6,043	6,748	6,747	5,988	4,922	4,072	4,114
Manufacturing	21,059	21,838	24,540	24,884	25,034	26,529	27,595	28,724	27,523	26,984	27,187
Trans., Pub. Util., Comm.	6,827	7,358	7,801	7,966	7,946	8,824	9,039	9,484	9,722	10,352	10,708
Wholesale Trade	5,482	5,970	7,188	7,607	8,921	9,414	9,886	10,079	9,571	9,419	9,881
Retail Trade	8,183	9,199	10,265	11,248	12,699	12,697	13,619	13,493	12,408	11,752	11,932
FIRE	20,946	21,045	22,555	23,566	24,960	26,806	28,840	29,221	28,121	27,457	27,956
Services	21,037	22,051	23,630	25,020	26,831	28,321	30,533	30,891	30,821	30,256	30,705
Government	10,372	10,578	10,675	11,177	11,555	11,842	12,440	12,380	12,627	11,764	11,514
Other	40	46	58	63	88	96	93	82	70	63	62
<b>Total GSP</b>	<b>\$97,980</b>	<b>\$102,561</b>	<b>\$112,021</b>	<b>\$117,816</b>	<b>\$125,054</b>	<b>\$132,276</b>	<b>\$139,774</b>	<b>\$141,255</b>	<b>\$136,701</b>	<b>\$133,111</b>	<b>\$135,079</b>

SOURCE: United States Department of Commerce, Bureau of Economic Analysis.  
Note: "Agriculture" includes Forestry and Fisheries.

*Services.* The services sector has been the largest contributor to the Massachusetts Gross State Product since 1985 and contributed 22.7 percent of the Commonwealth's Gross State Product in 1992. After increasing at yearly rates between 4.8 percent and 7.2 percent between 1983 and 1988, growth in the services sector slowed to a rate of 1.2 percent in 1989 and declined 0.2 percent and 1.8 percent in 1990 and 1991, respectively. In 1992, the services sector grew at a rate of 1.5 percent. The health care industry is the largest contributor to the services sector and continues to play an important role in the Massachusetts economy, contributing 9.5 percent of the Gross State Product in 1992.

*Finance, Insurance, Real Estate.* Since 1987, the FIRE sector has been the second largest contributor to the Massachusetts Gross State Product. In 1992, it contributed 20.7 percent of the Gross State Product. Growth rates between 4.5 percent and 7.6 percent between 1984 and 1988 were followed by slower growth in 1989 (1.3 percent) and negative growth rates of -3.8 percent and -2.4 percent in 1990 and 1991, respectively. The FIRE sector grew at a rate of 1.8 percent in 1992.

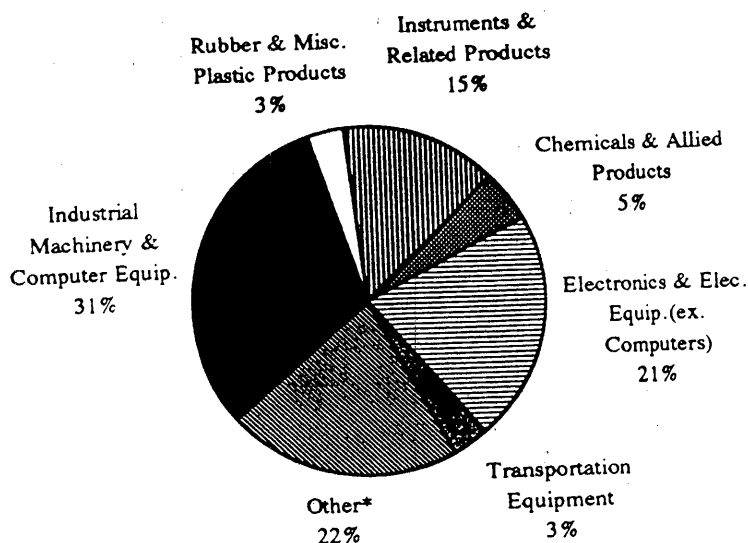
*Manufacturing.* The manufacturing sector was the largest contributor to the Massachusetts Gross State Product in 1982, contributing 21.5 percent of the Gross State Product. Because of more rapid growth in other sectors in the 1980s, this sector was only the third largest contributor in 1992, contributing 20.1 percent of the Gross State Product. Growth in this sector was erratic throughout the 1980s, ranging from 12.4 percent in 1984 to 0.6 percent in 1986. Declines of 4.2 percent and 2.0 percent in 1990 and 1991 were followed by growth of 0.8 percent in 1992.

*Wholesale and Retail Trade.* Taken together, the wholesale and retail trade sectors contributed 16.1 percent of the Massachusetts Gross State Product in 1992, with retail trade contributing 8.8 percent and wholesale trade contributing 7.3 percent. Growth within these sectors varied significantly between 1983 and 1992, with the wholesale trade sector experiencing growth rates as high as 20.4 percent in 1984 and 17.3 percent in 1986 and as low as -5.0 percent in 1990. Growth in the retail trade sector varied between 9.6 percent and 12.9 percent between 1983 and 1986, declined to 0.0 percent in 1987, and resumed a positive growth rate of 7.3 percent in 1988. Both sectors experienced negative growth rates during the recession of the early 1990s. The wholesale trade sector declined 5.0 percent in 1990 and 1.6 percent in 1991 before resuming a positive growth rate of 4.9 percent in 1992. Growth in the retail trade sector declined more severely to rates of -8.0 percent in 1990 and -5.3 percent in 1991 before growing at a rate of 1.5 percent in 1992.

*Trade and International Trade.* A significant portion of what Massachusetts produces is exported internationally. The total value of all international shipments from Massachusetts in 1992 represented 9.0 percent of the total Gross State Product. Massachusetts ranked thirteenth in the United States, and first in New England, with nearly \$13.1 billion in international exports in 1994. However, the rate of growth in the Commonwealth's exports has increased slowly over time in comparison to some other states in the U.S., and has slowed significantly since the late 1980s. In 1994 the value of Massachusetts' exports increased by 7.1 percent over 1993. In the first two quarters of 1995, exports increased 13.8 percent over the first two quarters of 1994. This is an improvement over 1993, when exports increased only 0.3 percent from the previous year, although the 1994 increase still falls short of the U.S. increase of 10.2 percent and the increase over the first two quarters is below the U.S. increase of 14.9 percent. According to the United States Department of Commerce, a large portion of exports from Massachusetts is exported from the greater Boston metropolitan area. In 1993, for example, 73.7 percent of all Massachusetts exports were exported from the Boston Metropolitan area. It is not possible to provide balance of trade comparisons for Massachusetts because import data are not compiled on a state-by-state basis.

Massachusetts' most important exports, as shown in the chart below, are industrial machinery and computer equipment, electronics and electric equipment, and instruments and related products.

## Composition of Massachusetts Exports by Industry Group, 1994



\* Includes textiles, printing & publishing, paper, primary metal industries, and agricultural production.  
 SOURCE: Massachusetts Institute for Social and Economic Research, University of Massachusetts at Amherst.

Massachusetts' five most important trading partners for 1994 were: Canada, which purchased \$3.1 billion worth of products; the United Kingdom, which bought \$1.3 billion; Japan, which purchased \$1.1 billion; Germany, which bought \$907 million; and the Netherlands, which purchased \$717 million worth of products. The fastest growing buyers of Massachusetts exports among its top ten trading partners were: Taiwan, which increased 67.1 percent; Ireland, which increased 28.6 percent; and the United Kingdom, which purchased 24.8 percent more of Massachusetts' exports in 1994 than in 1993.

### Value of International Shipments from Massachusetts, 1988-1994 (by major industry group, in millions)

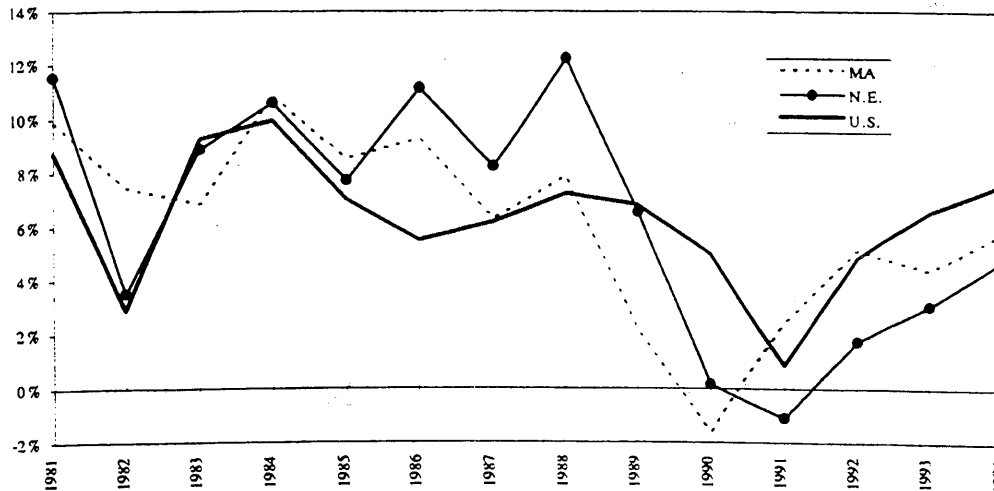
Major Industry Group	1988	1989	1990	1991	1992	1993	1994
Industrial Machinery & Computer Equip.	\$4,496.1	\$4,521.0	\$4,284.1	\$4,460.1	\$4,174.0	\$3,874.0	\$4,065.1
Electronics & Elec. Equip. (ex. Computers)	945.7	1,395.9	2,030.5	2,167.4	2,082.1	2,240.5	2,799.5
Instruments & Related Products	1,604.6	1,636.0	1,871.8	1,796.9	1,848.3	1,867.0	1,897.9
Chemicals & Allied Products	323.3	399.1	479.5	490.3	496.3	534.1	632.4
Transportation Equipment	562.0	433.6	403.0	352.2	479.0	499.1	416.4
Rubber & Misc. Plastic Products	212.4	192.4	214.0	196.7	236.8	373.8	417.1
Textile Mill Products	90.4	123.6	175.9	199.5	257.3	263.3	267.7
Printing & Publishing	59.1	101.8	105.1	141.6	161.5	171.2	136.3
Paper & Allied Products	156.5	175.0	202.9	194.0	243.1	242.8	258.7
Primary Metal Industries	172.3	170.7	182.7	216.5	200.0	211.5	232.9
Agricultural Production	42.2	24.6	34.2	45.2	54.2	48.4	49.9
<b>Total from Above Industries</b>	<b>\$8,664.4</b>	<b>\$9,173.6</b>	<b>\$9,983.9</b>	<b>\$10,260.4</b>	<b>\$10,232.7</b>	<b>\$10,325.6</b>	<b>\$11,173.9</b>
<b>Total from All Industries-Massachusetts</b>	<b>\$9,691.8</b>	<b>\$10,472.0</b>	<b>\$11,586.8</b>	<b>\$11,891.4</b>	<b>\$12,157.6</b>	<b>\$12,194.8</b>	<b>\$13,064.8</b>
<b>Percentage Change</b>	<b>16.1%</b>	<b>8.0%</b>	<b>10.6%</b>	<b>2.6%</b>	<b>2.2%</b>	<b>0.3%</b>	<b>7.1%</b>

SOURCE: Massachusetts Institute for Social and Economic Research, University of Massachusetts at Amherst.

**Retail Sales.** Retail sales growth in the Commonwealth outpaced national sales growth during most of the 1980s, although in more recent years this has not been the case. After dropping significantly below the national average in 1989 and 1990, the rate of retail sales growth in Massachusetts outpaced both New England and the nation in 1991 and 1992. Since 1993, however, retail sales growth in Massachusetts has been slower than retail sales growth for the nation as a whole, although it has been faster than the New England average. While the retail sales component remains a significant contributor to the Massachusetts Gross State Product, it now represents a lower percentage of the Gross State Product (8.9 percent in 1994) than it did in the 1980s, when it contributed between 9.0 and 9.5 percent of the Gross State Product.

According to the Federal Reserve Bank of Boston, retail sales in Massachusetts grew at a rate of 2.7 percent between August 1994 and August 1995. The following chart and table show the annual retail sales activity for Massachusetts and the United States from 1980 through 1994.

**Percentage Change in Retail Sales, 1981-1994**



**Annual Retail Sales, 1980-1994**  
(in millions)

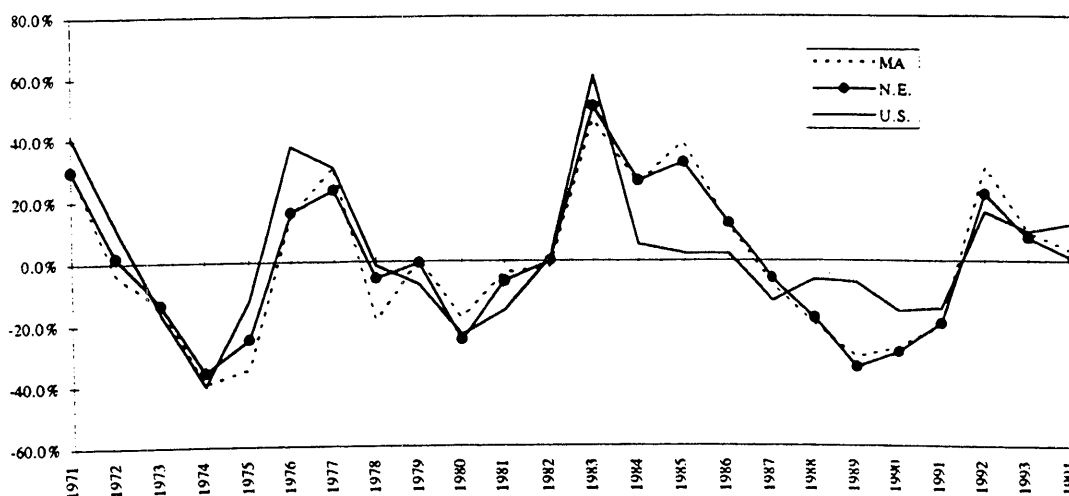
Year	Massachusetts		New England		United States	
	Sales	Percentage Change	Sales	Percentage Change	Sales	Percentage Change
1980	\$23,068		\$51,924		\$954,826	
1981	25,347	9.9%	57,919	11.5%	1,038,309	8.7%
1982	27,231	7.4%	59,949	3.5%	1,068,227	2.9%
1983	29,095	6.8%	65,277	8.9%	1,167,416	9.3%
1984	32,261	10.9%	72,194	10.6%	1,283,753	10.0%
1985	35,014	8.5%	77,765	7.7%	1,373,829	7.0%
1986	38,256	9.3%	86,431	11.1%	1,449,210	5.5%
1987	40,664	6.3%	93,557	8.2%	1,538,637	6.2%
1988	43,868	7.9%	105,028	12.3%	1,649,974	7.2%
1989	44,830	2.2%	111,903	6.5%	1,762,012	6.8%
1990	44,091	-1.6%	112,087	0.2%	1,849,941	5.0%
1991	45,163	2.4%	110,851	-1.1%	1,865,811	0.9%
1992	47,491	5.2%	112,804	1.8%	1,956,175	4.8%
1993	49,576	4.4%	116,265	3.1%	2,083,877	6.5%
1994	52,466	5.8%	121,796	4.8%	2,241,321	7.6%

SOURCES: United States Department of Commerce; Federal Reserve Bank of Boston.

**Construction and Housing.** In 1992 construction activity contributed 3.0 percent of the Massachusetts Gross State Product. Growth within this sector has been more erratic than that in any other sector. With the exception of 1986, growth within this sector was more than twice that of the total Massachusetts Gross State Product between 1983 and 1987, with explosive growth rates of 22.0 percent in 1984 and 18.0 percent in 1985. Beginning in 1988, however, growth within the sector stopped and in 1989, 1990, and 1991 the sector declined at rates of 11.2 percent, 17.8 percent, and 17.3 percent, respectively. In 1992, the sector grew at a rate of 1.0 percent.

The following chart and table show the number of housing permits authorized on an annual basis in Massachusetts, New England, and the United States. Between 1983 and 1986, both Massachusetts and New England experienced strong growth in the number of housing permits authorized. This period was followed by a prolonged decline between 1986 and 1991 during which the number of housing permits authorized in Massachusetts declined by 71.5 percent. Since 1992, however, the number of housing permits authorized in Massachusetts has increased in each year. In 1994, the number of housing permits authorized increased 2.9 percent in Massachusetts, compared to an increase of 0.7 percent for New England and 12.1 percent for the United States.

*Percentage Change in Housing Permits Authorized, 1971-1994*



## Housing Permits Authorized, 1970-1994

Year	Massachusetts		New England		United States	
	Total Permits	Percentage Change	Total Permits	Percentage Change	Total Permits	Percentage Change
1970	39,460		74,230		1,355,000	
1971	51,400	30.3%	96,360	29.8%	1,913,000	41.2%
1972	49,330	-4.0%	98,080	1.8%	2,138,000	11.8%
1973	42,350	-14.1%	84,640	-13.7%	1,783,000	-16.6%
1974	25,580	-39.6%	54,310	-35.8%	1,068,000	-40.1%
1975	16,640	-34.9%	40,690	-25.1%	935,000	-12.5%
1976	19,050	14.5%	47,160	15.9%	1,285,000	37.4%
1977	24,870	30.6%	58,200	23.4%	1,678,000	30.6%
1978	20,090	-19.2%	55,100	-5.3%	1,659,000	-1.1%
1979	20,210	0.6%	54,900	-0.4%	1,534,000	-7.5%
1980	16,473	-18.5%	40,970	-25.4%	1,171,000	-23.7%
1981	15,854	-3.8%	38,300	-6.5%	985,000	-15.9%
1982	15,529	-2.0%	38,370	0.2%	1,000,000	1.5%
1983	22,659	45.9%	57,700	50.4%	1,606,000	60.6%
1984	28,287	24.8%	72,760	26.1%	1,691,000	5.3%
1985	39,251	38.8%	96,080	32.1%	1,733,000	2.5%
1986	43,598	11.1%	107,805	12.2%	1,773,000	2.3%
1987	40,173	-7.9%	101,599	-5.8%	1,542,000	-13.0%
1988	31,954	-20.5%	82,769	-18.5%	1,450,000	-6.0%
1989	21,982	-31.2%	54,129	-34.6%	1,347,000	-7.1%
1990	15,765	-28.3%	38,148	-29.5%	1,127,000	-16.3%
1991	12,435	-21.1%	30,396	-20.3%	954,000	-15.4%
1992	16,209	30.3%	37,000	21.7%	1,106,000	15.9%
1993	17,717	9.3%	39,765	7.5%	1,211,000	9.5%
1994	18,236	2.9%	40,027	0.7%	1,358,000	12.1%

SOURCES: Massachusetts Institute for Social and Economic Research; Federal Reserve Bank of Boston; United States Department of Commerce.

The current recovery in the regional economy is reflected in the housing sector. Significant declines in existing home sales in Massachusetts in 1989 and 1990 (of 12.0 percent and 34.6 percent, respectively) were followed by rapid sales growth between 1991 and 1993, when home sales in Massachusetts increased at a yearly rate substantially higher than the national average. Following this period of rapid growth, the growth in existing home sales slowed to a rate of 7.7 percent in 1994 but grew at a faster rate than New England or the United States. On a seasonally adjusted annual rate basis, existing home sales for the Commonwealth, New England, and the United States appear in the table below.

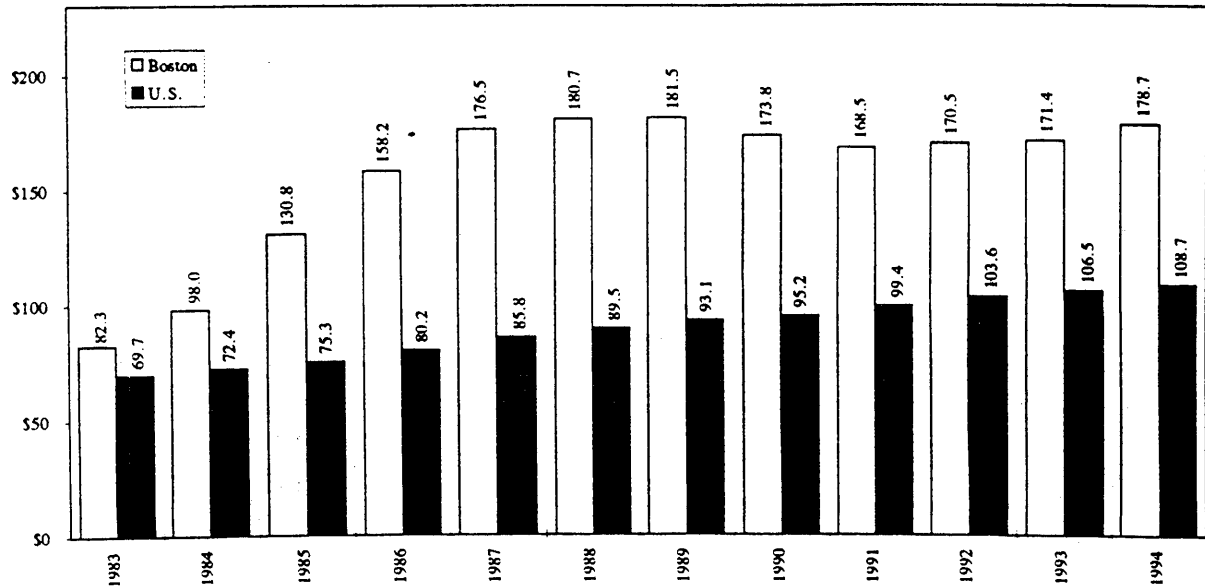
### Existing Home Sales, 1983-1994 (seasonally adjusted annual rates, in thousands)

Year	Massachusetts		New England		United States	
	Sales	Percentage Change	Sales	Percentage Change	Sales	Percentage Change
1983	59.2		141.3		2,925.0	
1984	54.9	-7.3%	140.7	-0.4%	3,092.5	5.7%
1985	60.2	9.7%	157.0	11.6%	3,487.5	12.8%
1986	66.0	9.6%	169.2	7.8%	3,897.5	11.8%
1987	76.4	15.8%	174.5	3.1%	3,977.0	2.0%
1988	76.6	0.3%	178.5	2.3%	3,947.5	-0.7%
1989	67.4	-12.0%	142.8	-20.0%	3,807.5	-3.5%
1990	44.1	-34.6%	NA	NA	3,483.3	-8.5%
1991	49.5	12.2%	NA	NA	3,561.5	2.2%
1992	57.7	16.6%	139.7	NA	3,888.0	9.2%
1993	66.0	14.4%	159.1	13.9%	4,205.0	8.2%
1994	71.1	7.7%	170.1	6.9%	4,420.0	5.1%

SOURCES: Federal Reserve Bank of Boston; National Association of Realtors.  
NA=Not Available.

Single family home prices for the Boston Metropolitan area (not seasonally adjusted) appear below. While Boston housing prices were 18 percent higher than the U.S. average in 1983, by 1987 Boston housing prices as a percentage of the national average had reached a peak of 205.7 percent. Boston home prices remained 64.4 percent above the national average in 1994.

**Average Annual Home Prices, 1983-1994**  
(in thousands of current dollars)



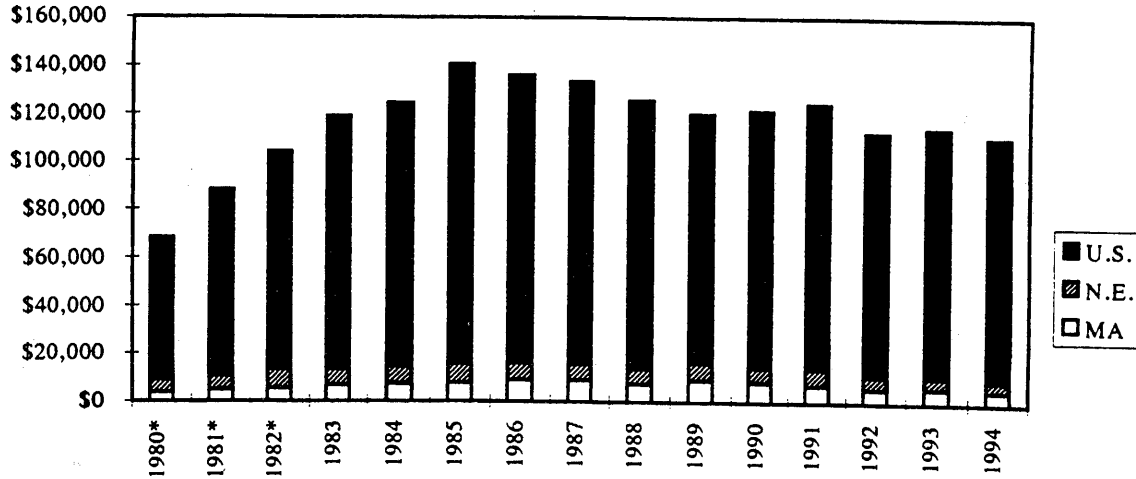
SOURCES: National Association of Realtors; Federal Reserve Bank of Boston.

**Defense.** An estimated 143,400 workers were employed in defense-related industries in 1992, accounting for approximately 5.0 percent of Massachusetts private sector employment. Following a peak in the value of military prime contracts awarded to Massachusetts firms in fiscal 1986 of \$8.7 billion, defense-related contracts declined 17 percent by fiscal 1988 to \$7.2 billion. By fiscal year 1994, the value of defense-related prime contracts had declined to \$5.1 billion. The diversity of Massachusetts companies, particularly in the area of electronics and high technology research and development, has helped dampen the impact of the decline in national defense expenditures on the Massachusetts economy.

The importance of the defense industry to the Massachusetts economy is reflected in the following chart and table, which show the value of Department of Defense prime contract awards between 1980 and 1994. Since 1980, Massachusetts has increased its share of New England contract awards from 42.7 percent of total New England awards to 54.7 percent of such awards in 1994. The net value of prime contract awards in fiscal year 1994 declined in Massachusetts, New England, and the United States. At the same time, the Commonwealth's share of the national total declined to 4.6 percent from a high of 7.3 percent in 1989.



**Net Value of Prime Contract Awards, 1980-1994**  
(in millions)



\* Prime Contract is defined as \$10,000 and above for these years; for remaining years it is defined as \$25,000 and above.

**Net Value of Department of Defense Prime Contract Awards, 1980-1994**  
(in millions)

Fiscal Year	MA	N.E.	U.S.	Percentage MA of N.E.	Percentage MA of U.S.
1980*	\$3,743	\$8,775	\$68,070	42.7%	5.5%
1981*	4,605	10,372	87,761	44.4%	5.2%
1982*	5,317	13,037	103,858	40.8%	5.1%
1983	6,328	12,967	118,744	48.8%	5.3%
1984	7,029	14,249	123,995	49.3%	5.7%
1985	7,714	15,487	140,096	49.8%	5.5%
1986	8,735	15,748	136,026	55.5%	6.4%
1987	8,685	15,606	133,262	55.7%	6.5%
1988	7,212	13,673	125,767	52.7%	5.7%
1989	8,757	16,268	119,917	53.8%	7.3%
1990	8,166	14,271	121,254	57.2%	6.7%
1991	6,933	13,889	124,119	49.9%	5.6%
1992	5,686	11,033	112,285	51.5%	5.1%
1993	5,936	10,779	114,145	55.1%	5.2%
1994	5,106	9,329	110,316	54.7%	4.6%

SOURCE: United States Department of Defense.

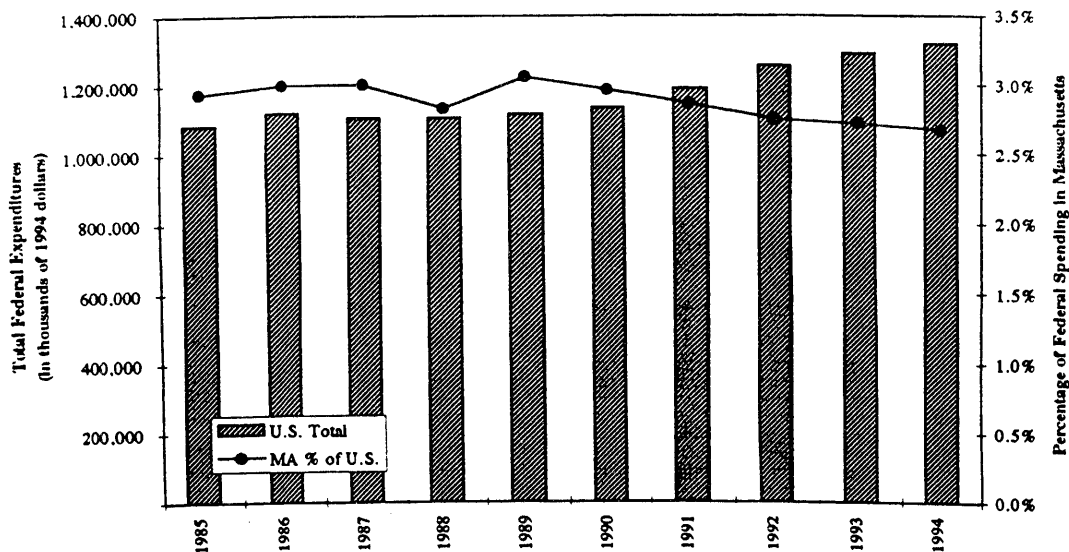
\* Prime Contract is defined as \$10,000 and above for these years; beginning in 1983 it is defined as \$25,000 and above.

**Travel and Tourism.** The travel and tourism industry represents a substantial component of the overall Massachusetts economy. Massachusetts is one of the nation's most popular tourist and travel destinations for both domestic and international visitors. The greater Boston area represents New England's most popular destination, as the site of many popular and historic attractions including the New England Aquarium, Boston's Museum of Fine Arts, Boston's Museum of Science, the U.S.S. Constitution, the Kennedy Library and Museum, and Faneuil Hall Marketplace.

The Massachusetts Office of Travel and Tourism estimates that a total of 25.9 million people visited the Commonwealth in 1994. Of these, 1.5 million were international visitors. It was also estimated that 1993 spending by domestic travelers was \$7.35 billion while international travelers spent \$1.36 billion. The domestic visitor spending represents an 8.1 percent increase over 1992, while international traveler spending increased by 13.3 percent.

**Federal Government Spending in Massachusetts.** Federal government spending contributes a significant amount to the economy of Massachusetts. In fiscal 1994, Massachusetts ranked eighth in the nation in per capita distribution of federal funds, with total spending of \$5,856 per person. According to data compiled by the United States Department of Commerce, Massachusetts' share of total federal spending has declined steadily since 1989 even as total federal spending has increased. In 1994, Massachusetts received 2.7 percent of total federal spending. The following chart shows total federal expenditures and the percentage of federal expenditures in Massachusetts. Total federal spending data were converted to 1994 dollars by MISER using Consumer Price Index data for the United States. Federal spending includes grants to state and local governments, direct payments to individuals, wage and salary employment, and procurement contracts and includes only those expenditures which can be associated with individual states and territories.

**Total Real Federal Expenditures and  
Percentage of Federal Expenditures in Massachusetts, 1985-1994**  
(in thousands of constant 1994 dollars)



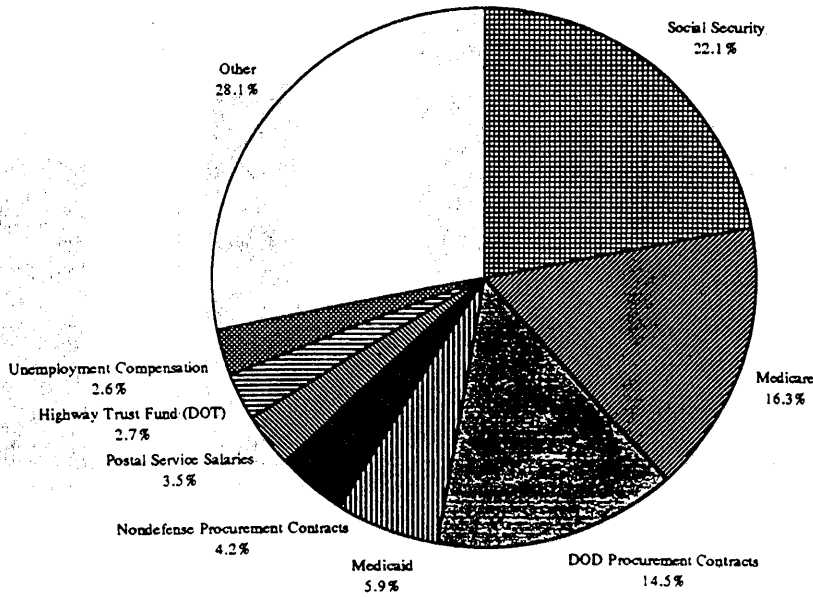
SOURCE: United States Department of Commerce.

A large percentage of federal spending in Massachusetts in 1994 was composed of health care and social programs like Medicare, Medicaid, and Social Security. Massachusetts was above the national average in per capita federal grants to state and local governments, receiving \$1036 per capita compared to a national average of \$811. Per capita federal spending on salaries and wages in 1994 was lower in

Massachusetts than in the rest of the nation (\$515 compared to a national average of \$639) but Massachusetts was above the national average in per capita direct federal payments to individuals (\$2,925 compared to a national average of \$2,618). Within this latter category, Massachusetts ranked ninth in the nation in social security retirement insurance payments (\$902 compared to a national average of \$802) and third in Medicare hospital insurance payments (\$646 compared to a national average of \$457). Massachusetts ranked ninth in per capita procurement contract awards (\$1,094 compared to a national average of \$749) in 1994, a difference which is largely explained by spending in the defense sector, where Massachusetts received almost twice the national average.

The following chart shows the composition of federal spending within Massachusetts in fiscal 1994.

*Composition of Federal Spending in Massachusetts by Program, Fiscal 1994*

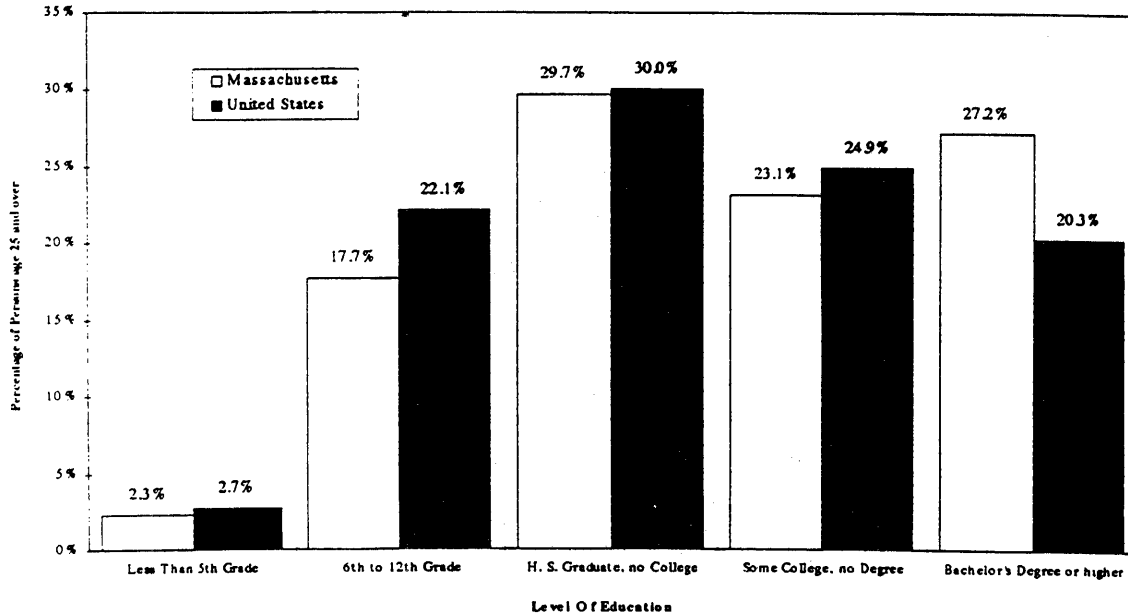


SOURCE: United States Department of Commerce.

## HUMAN RESOURCES AND INFRASTRUCTURE

**Human Resources.** The availability of a skilled and well-educated population is an important resource for Massachusetts. The level of education reached by the population of Massachusetts compares favorably with the level in the United States as a whole. In both Massachusetts and the United States, less than three percent of the population over age 25 received less than a fifth grade education. The most significant difference between Massachusetts and the United States is the percentage of people over age 25 with a Bachelor's Degree or higher: 27.2 percent in Massachusetts as compared to 20.3 percent for the United States as a whole. The following chart shows this difference:

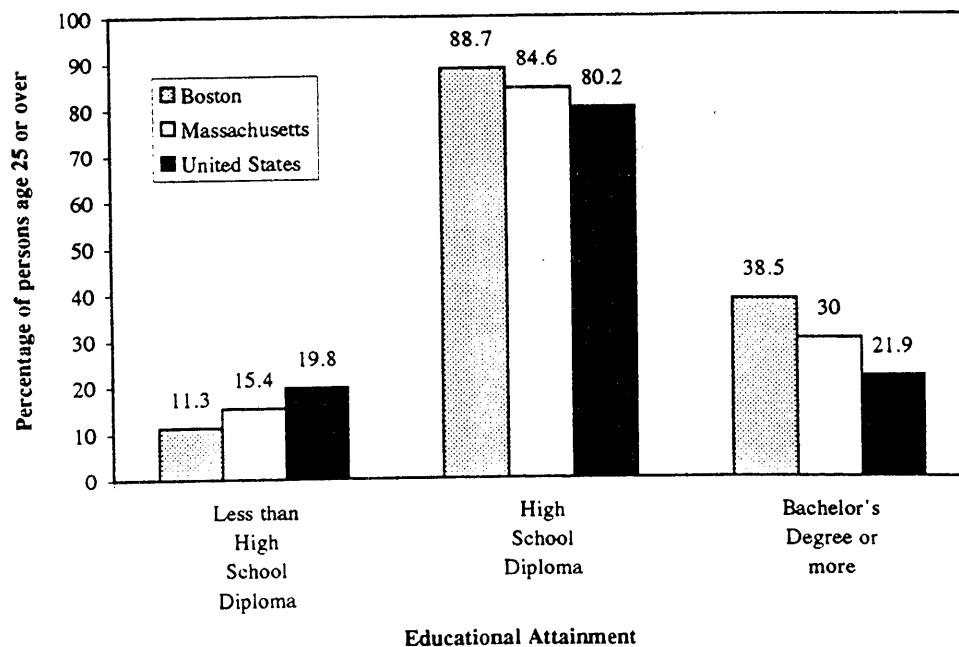
*Educational Attainment, 1990*



SOURCE: United States Department of Commerce, Bureau of the Census.

While the Bureau of the Census develops this detailed evaluation of educational attainment every ten years, the United States Department of Education prepares a less detailed analysis of educational attainment between the years of the national census which is based upon data provided by the Bureau of the Census. This analysis follows a representative sample on the individual (rather than institutional) level of the fifteen largest states and cities in the United States. The most recent analysis for Massachusetts, Boston, and the United States is March 1993. While this is not an exhaustive study, the following chart shows that Massachusetts continues to rank among the highest in educational attainment levels.

## Years of School Completed by Persons Age 25 or Over, March 1993



SOURCE: United States Department of Education.

Both Boston and Massachusetts have a smaller percentage of persons who have not completed high school than the United States. In the other two categories, compared with Massachusetts and the United States, Boston has the highest percentage of the population over 25 with a bachelor's degree or more. Of the fifteen largest cities studied, Boston ranked second in the percentage of persons with a high school diploma. Boston ranked first among cities studied in the percentage of persons with a bachelor's degree or more. Both Boston and Massachusetts ranked above the United States in the percentage of persons with either a high school diploma or a bachelor's degree or more. Among the other fourteen states studied, Massachusetts ranked first in the percentage of its population having received a high school diploma. Massachusetts also ranked first with the highest percentage of persons over 25 with a bachelor's degree or more.

Although spending on education is not necessarily an indication of results, it is important to note that Massachusetts spends more per pupil on primary and secondary education than the national average. In fact, per pupil spending in Massachusetts has been significantly higher than the national average since 1980. The ratio of Massachusetts spending to the national average has varied from 1.13 in 1983-1984 to a high of 1.30 in 1986-1987. Preliminary estimates for the 1993-94 academic year show that Massachusetts spends 20 percent more on public elementary and secondary education than the United States average: \$6,361 per student compared to a national average of \$5,314 per student. While Massachusetts continues to spend more per student than the national average, neither average has increased above 1991-92 spending levels. The following table shows expenditures per pupil for Massachusetts and the United States since the 1979-80 academic year. Data for the 1993-94 academic year are preliminary estimates based on state-reported preliminary data.

*Expenditure Per Pupil in Public Elementary and Secondary Schools, 1980-1994*  
(in current, unadjusted dollars)

<i>Academic Year</i>	<i>Massachusetts</i>	<i>United States</i>	<i>Ratio (MA/U.S.)</i>
1979-80	\$2,819	\$2,272	1.24
1980-81	\$2,940	\$2,502	1.18
1981-82	\$3,137	\$2,726	1.15
1982-83	\$3,378	\$2,955	1.14
1983-84	\$3,595	\$3,173	1.13
1984-85	\$4,026	\$3,470	1.16
1985-86	\$4,562	\$3,756	1.21
1986-87	\$5,145	\$3,970	1.30
1987-88	\$5,471	\$4,240	1.29
1988-89	\$5,972	\$4,645	1.29
1989-90	\$6,237	\$4,962	1.26
1990-91	\$6,366	\$5,245	1.21
1991-92	\$6,408	\$5,421	1.18
1992-93	\$6,141	\$5,170	1.19
1993-94(p)	\$6,361	\$5,314	1.20

SOURCE: United States Department of Education, National Center for Education Statistics.

(p)= preliminary estimates.

Massachusetts is an internationally recognized center for higher education, with 420,127 students in undergraduate, professional and graduate programs in 1993, according to data supplied by the New England Board of Higher Education. The number of foreign students enrolled in Massachusetts colleges and universities in 1993 was 24,327, representing 5.4 percent of total foreign student enrollment in the United States. The Massachusetts public higher education system is composed of universities, state colleges, and community colleges with a combined enrollment of 181,461 students in 1993. In addition, Massachusetts contains a system of private higher education that accounted for 56.8 percent of total enrollment in Massachusetts in 1993. The strength of both public and private colleges and universities as centers for research, teaching, and education contributes to the high quality of the Massachusetts work force and plays a key role in attracting and retaining business and industry within the state.

The pre-eminence of higher education in Massachusetts contributes not only to the quality of its work force, but also to its stature in the nation and the world as a center for basic scientific research and for academic and entrepreneurial research and development. For example, Massachusetts institutions have a large number of Nobel Laureates. The Massachusetts Institute of Technology recently became the first university in the U.S. to receive more than 100 patents in a year. According to data gathered by the National Science Foundation, Massachusetts receives a higher proportion of both federal funding and private industry funding for research and development than the national average. Nationally, private industry funded 6.8 percent of university research and development ("R&D") at doctorate-granting institutions in 1993, compared with 9.5 percent for Massachusetts. In 1993, the federal government provided funding for 71.6 percent of all R&D activities in Massachusetts compared to 60.0 percent for the nation as a whole. Massachusetts received 6.7 percent of total federal spending on R&D in 1993.

The higher education system in Massachusetts is particularly strong in post-graduate, scientific, and technical education. The strength of the Massachusetts higher education system is evidenced by the draw it has upon new students. In the Fall of 1992, 19,354 new students migrated into the Massachusetts higher education system while only 11,854 migrated out of Massachusetts. Twenty-three percent of first time freshmen in Massachusetts in the Fall of 1992 migrated to Massachusetts from other states. The strength of the Commonwealth's educational institutions is also reflected in the large number of degrees awarded. According to a 1993 New England Board of Higher Education analysis of U.S. Department of Education Data, Massachusetts confers an impressive number of mathematics, physical science, and engineering degrees. In the field of mathematics, baccalaureate, masters, and doctorates numbered 533,

92. and 64 respectively. In the physical sciences, 798 baccalaureate, 270 masters, and 345 doctorate degrees were conferred. The numbers of degrees conferred in the engineering field ranked highest with 3,527 baccalaureate, 1,751 masters, and 369 doctorates conferred in 1993.

The diversity of federal funding sources reflects the variety of research and development work performed at Massachusetts educational institutions. According to the National Science Foundation, of the \$854,337 of total 1993 federal obligations for science and engineering support to universities and colleges in Massachusetts, 39.9 percent was from the Department of Health and Human Services, 17.9 percent was from the National Science Foundation, 21 percent was from the Department of Defense, 9.1 percent was from the Department of Energy, 5.9 percent was from the National Aeronautics and Space Administration, and 2.6 percent was from the Department of Agriculture.

New England institutions received 8.8 percent (\$1,717,915) of the total research and development funds (\$19,539,885) awarded in 1993 while Massachusetts received 5.5 percent (\$1,075,820) of the total research and development funds awarded in 1993. More significant is the amount of research and development funds received by Massachusetts compared to the rest of New England. Massachusetts was awarded 62.6 percent of the total research and development funds received by New England institutions.

Massachusetts colleges and universities are also significant employers within the state. The educational services sector includes only private institutions for education; public institutions are included in the government sector. According to the Massachusetts Department of Employment and Training, educational services accounted for 121,800 jobs in May 1995, while in the government sector state and local public education accounted for 170,600 jobs in May 1995.

*Major Infrastructure Projects.* The next decade brings significant work on several major public sector-sponsored construction projects, giving rise in Massachusetts to new economic and employment opportunities. The projects include the depression of the central artery which traverses the City of Boston, and the construction of a third harbor tunnel linking downtown Boston to Logan Airport. The new Central Artery is designed to meet Boston's future traffic demand. It will move an estimated 240,000 vehicles per day with a normal urban rush hour of 2-3 hours. The Central Artery/Tunnel project will also strengthen connections among Boston's air, rail, and seaport terminals. By offering travelers and shippers increased choice and flexibility among these different modes of transportation, the project is contributing to the creation of an integrated, intermodal transportation system for the entire region. Construction of the Third Harbor Tunnel began in 1992 and stretches under Boston Harbor from South Boston to Logan Airport. The tunnel is expected to be open to commercial traffic in late 1995 and to be open to all traffic by 2001. After three years of construction, more than \$2.1 billion in design and construction contracts have been awarded, creating jobs for 9,000 people. These workers are employed by construction companies, engineering firms, suppliers, and in spin-off jobs created by project spending. At the height of construction, nearly 15,000 people will be working as a result of the project. The federal government will take responsibility for about 90 percent of the estimated \$7.7 billion cost of the project. Massport and the Massachusetts Bay Transportation Authority also plan to devote several billion dollars to maintenance and enhancements of the area's port, airport, and mass transportation facilities.

The Massachusetts Water Resources Authority is undertaking capital projects for the construction and rehabilitation of sewage collection and treatment facilities in order to bring wastewater discharges into Boston Harbor into compliance with federal and state pollution control requirements. According to the MWRA 1994 Annual Report, the Boston Harbor Project is over half complete. The harbor cleanup project is estimated to cost \$3.5 billion in 1994 dollars. Work on the project began in 1988 and is expected to be completed in 1999, with the most significant expenditures occurring between 1990 and 1999. The centerpiece of the project is a new sewage treatment plant on Deer Island. The first half of the plant, portions of which became operational in January 1995, is a larger, more effective

primary treatment plant to replace the existing one. The majority of the project's expenditures will be paid for by local communities, in the form of user fees, with federal and state sources making up the difference. According to the Massachusetts Water Resource Authority, in 1994 the project added more than \$500 million into the local economy. Nearly half of the project expenditures to date, \$1.6 billion, have been allocated within metropolitan Boston. The average total employment impact of the project is an estimated 2,400 jobs per year, which includes construction, engineering, and professional services jobs as well as spin-off jobs in other sectors of the economy.



## SUMMARY OF CERTAIN PROVISIONS OF THE SPECIAL OBLIGATION ACT

The following is a brief summary of certain provisions of the Special Obligation Act (referred to in this summary as the "Act"), pursuant to which the 1996 Bonds are being issued. The Act is codified as Section 20 of Chapter 29 of the Massachusetts General Laws. The Act may be amended after the issuance of the 1996 Bonds, but any such amendment must comply with the covenants of the Commonwealth contained in the Trust Agreement, as described in this Official Statement. Although the Act contains certain covenants of the Commonwealth, the Trust Agreement provides that any provision of the Act creating a covenant with the owners of Bonds shall be deemed a covenant under the Trust Agreement only to the extent expressly provided for in, and as limited by, the Trust Agreement. See "Appendix C -- Summary of Certain Provisions of the Trust Agreement." This summary of the Act does not purport to be complete, and reference is made to the Act for a full and complete statement of its terms and provisions.

### Infrastructure Fund

The Act establishes in the Highway Fund a subfund to be known as the Infrastructure Fund, which is to be invested by the State Treasurer and which is deemed to be a part of the Highway Fund. Forty-seven and sixty-two hundredths percent of the receipts paid into the treasury of the Commonwealth and directed by the Gasoline Tax Act to be credited to the Highway Fund for general Highway Fund purposes are directed by the Act to be credited to the Infrastructure Fund. Such receipts, together with investment earnings thereon, are referred to throughout the Act as "special receipts." Expenditures may be made from the Infrastructure Fund, subject to appropriation, only for the following purposes: (i) for the payment of the principal, including sinking fund payments, of and premium, if any, and interest on special obligation bonds of the Commonwealth issued pursuant to the Act for one or more of the purposes for which Highway Fund moneys may be expended, (ii) for the maintenance of, or provision for, any reserves, additional security, insurance or other form of credit enhancement required or provided for in any trust agreement entered into pursuant to the Act to secure such bonds, (iii) for direct expenditures for any such purposes for which Highway Fund moneys may be expended, any such direct expenditures to be made only in compliance with any applicable restrictions relating thereto, including without limitation any coverage requirements contained in any such trust agreement or credit enhancement agreement, and (iv) for capital projects and capital assistance funds for regional transit authorities as described in section twenty-three of chapter eight hundred and eleven of the acts of nineteen hundred and eighty-five.

### Special Obligation Bonds

Bonds issued in accordance with the provisions of the Act are special obligations of the Commonwealth payable from special receipts to the extent available and in any case payable solely from moneys credited to the Highway Fund. Notwithstanding the provisions of any general or special law to the contrary, such special obligation bonds are not general obligations of the Commonwealth. Special obligation bonds may be secured by a trust agreement entered into by the State Treasurer, with the concurrence of the Secretary of Administration and Finance and the Secretary of Transportation and Construction, on behalf of the Commonwealth, which trust agreement may pledge or assign all or any part of moneys credited to the Highway Fund and rights to receive the same, whether existing or coming into existence and whether held or thereafter acquired, and the proceeds thereof. The State Treasurer is also authorized, with the concurrence of the Secretary of Administration and Finance and the Secretary of Transportation and Construction, to enter into additional security, insurance or other forms of credit enhancement which may be secured on a parity or subordinate basis with the special obligation bonds. The Act provides that a pledge in any such trust agreement or credit enhancement agreement is valid and binding from the time such pledge is made without any physical delivery or further act, and the lien of such pledge is valid and binding as against all parties having claims of any kind in tort, contract or otherwise, irrespective of whether such parties have notice thereof. Any such pledge may be perfected by filing the trust agreement or credit enhancement agreement in the records of the State Treasurer, and no filing need be made under the Massachusetts Uniform Commercial Code.

The Act provides that any such trust agreement or credit enhancement agreement may establish provisions defining defaults and establishing remedies and other matters relating to the rights and security of the holders of the special obligation bonds or other secured parties as determined by the State Treasurer, including provisions relating to the establishment of reserves, the issuance of additional or refunding bonds, whether or not secured on a parity basis, the application of receipts, moneys or funds pledged pursuant to such agreement (referred to in the Act as "pledged funds") and other matters deemed necessary or desirable by the State Treasurer for the security of such special obligation bonds, and may also regulate the custody, investment and application of moneys. Any such special obligation bonds are deemed to be investment securities under the Massachusetts Uniform Commercial Code and are made securities in which any public officer, fiduciary, insurance company, financial institution or investment company may properly invest funds and which may be deposited with any public custodian for any purpose for which the deposit of bonds is authorized by law. The Act provides that any such special obligation bonds, their transfer and the income therefrom, including profit on the sale thereof, shall at all times be exempt from taxation by and within the Commonwealth.

In order to increase the marketability of any such special obligation bonds or notes issued by the Commonwealth, and in consideration of the acceptance of payment for any such special obligation bonds or notes, the Commonwealth covenants in the Act with the purchasers and all subsequent holders and transferees of any such special obligation bonds or notes that while any such special obligation bond or note shall remain outstanding, and so long as the principal of or interest on any such special obligation bond or note shall remain unpaid, (i) special receipts shall not be diverted from the purposes identified herein, (ii) no pledged funds shall be diverted from the Highway Fund, (iii) in any fiscal year of the Commonwealth, unless and until an appropriation has been made which is sufficient to pay the principal, including sinking fund payments, of and interest on all such special obligation bonds and notes of the Commonwealth and to provide for or maintain any reserves, additional security, insurance or other form of credit enhancement required or provided for in any trust agreement securing any such bonds or notes, no pledged funds shall be applied to any other use and (iv) so long as such revenues are necessary, as determined by the State Treasurer in accordance with any applicable trust agreement or credit enhancement agreement, for the purposes for which they have been pledged, the rates of the fees and excises directed by the General Laws to be credited to the Highway Fund shall not be reduced below the amount in effect at the time of issuance of any such bond or note.

#### **Limitation on Central Artery/Third Harbor Tunnel Expenditures**

Notwithstanding the provisions of any other general or special law to the contrary, the Act provides that no more than 10% of the net fiscal year receipts in any fiscal year prior to July 1, 2000, of the Gasoline Tax Act may be expended for the construction of the Central Artery/Third Harbor Tunnel project. If, in any such fiscal year, less than 10% of the net fiscal year receipts is expended for such construction, the difference between 10% of the net fiscal year receipts and the amount actually expended on such construction during that fiscal year will be available during that or any subsequent fiscal year for any other construction or reconstruction purpose, or in any subsequent fiscal year for Central Artery/Third Harbor Tunnel construction, provided, however, that amounts of said 10% net fiscal year receipts expended in any fiscal year for purposes other than the Central Artery/Third Harbor Tunnel construction project will be available for expenditure for Central Artery/Third Harbor Tunnel construction in any subsequent fiscal year. If the above-described difference is used in a subsequent year for such Central Artery/Third Harbor Tunnel construction, the total amount used for such Central Artery/Third Harbor Tunnel construction during that subsequent fiscal year may exceed the 10% of net fiscal year receipts permitted by the Act, but the total amount used for such construction may not exceed 20% of the net fiscal year receipts in that subsequent fiscal year. Further, notwithstanding the foregoing, no more than 20% of the special receipts received in any fiscal year may be paid in that or any subsequent fiscal year for debt service on bonds or notes, or portions thereof, issued to finance the Central Artery/Third Harbor Tunnel project, or for direct expenditures on such project, and any trust agreement or credit enhancement agreement entered into by the Commonwealth pursuant to the Act must contain a covenant to that effect.

**SUMMARY OF CERTAIN PROVISIONS OF THE TRUST AGREEMENT**

The Trust Agreement contains terms and conditions relating to the issuance and sale of Special Obligation Bonds under it, including various covenants and security provisions, certain of which are summarized below. For purposes of this summary, all references to "Bonds" shall refer to the Special Obligation Bonds. This summary does not purport to be comprehensive or definitive and is subject to all of the provisions of the Trust Agreement, to which reference is hereby made. Copies of the Trust Agreement are available from Mintz, Levin, Cohn, Ferris, Glovsky and Popeo, P.C., One Financial Center, Boston, MA 02111, Attn: John R. Regier, Bond Counsel to the Commonwealth.

**Definitions**

The following is a summary of certain terms used in the Trust Agreement, in this Appendix C and otherwise used in this Official Statement.

"Act" shall mean the provisions of Section 20 of Chapter 29 of the Massachusetts General Laws, as it may be amended from time to time.

"Accreted Value" shall mean with respect to any Bonds that are Capital Appreciation Bonds, an amount equal to the principal amount of such Capital Appreciation Bonds (determined on the basis of the initial principal amount per \$5,000 at maturity thereof) plus the amount assuming compounding (as set forth in the Applicable Supplemental Trust Agreement) of earnings which would be produced on the investment of such initial amount, beginning on the dated date of such Capital Appreciation Bonds and ending at the maturity date thereof, at a yield which, if produced until maturity, will produce \$5,000 at maturity.

"Additional Bonds" shall mean Bonds of the Commonwealth issued pursuant to the Trust Agreement.

"Additional Pledged Funds" shall mean any fees, duties, excises or license taxes which the Commonwealth may impose and collect relating to registration, operation or use of vehicles on public highways, or to fuels use for propelling such vehicles and subject to the restrictions of Article LXXVIII of the Constitution of the Commonwealth.

"Adjusted Bond Debt Service Requirements" shall mean:

- (i) With respect to Variable Rate Bonds, the aggregate Bond Debt Service Requirements based upon an interest rate equal to the Variable Rate Ceiling; provided, however, if the Commonwealth (1) enters into a Qualified Hedge Agreement requiring the Commonwealth to pay a fixed interest rate or providing for a maximum interest rate on a notional amount, and (2) has made a determination that such Qualified Hedge Agreement was entered into for the purpose of providing substitute interest payments or limiting the potential increase in the interest rate for a particular maturity of Bonds in a principal amount equal to the notional amount of the Qualified Hedge Agreement, then during the term of such Qualified Hedge Agreement and so long as the Hedge Provider under such Qualified Hedge Agreement is not in default, the interest rate on such Bonds shall be based on the fixed interest rate or maximum interest rate, as the case may be, payable by the Commonwealth under such Qualified Hedge Agreement;

- (ii) with respect to Fixed Rate Bonds, if the Commonwealth (1) enters into a qualified Hedge Agreement requiring the Commonwealth to pay a variable interest rate on a notional amount and (2) has made a determination that such Qualified Hedge Agreement was entered into for the purpose of providing substitute interest payments for a particular maturity of Bonds in a principal amount equal to the notional amount of the Qualified Hedge Agreement, then during the term of such Qualified Hedge Agreement and so long as the Hedge Provider under such Qualified Hedge Agreement is not in default, the interest rate on such Bonds shall be determined as if such Bonds bore interest at the Assumed Hedge Rate;
- (iii) with respect to Tender Bonds, the aggregate Bond Debt Service Requirements thereon shall not include amounts payable upon mandatory or optional tender, but shall be deemed to include all periodic Bond Related Costs and other payments to the provider of any Liquidity Facility, and shall not be based upon the terms of any Reimbursement Obligation to such provider except to the extent and for periods during which Bond Related Costs and other payments are required to be made pursuant to such Reimbursement Obligation due to such provider advancing funds;
- (iv) with respect to Bonds that have Credit Enhancement, the aggregate Bond Debt Service Requirements thereon shall be deemed to include all periodic Bond Related Costs and other payments to the provider of the Credit Enhancement, but shall not be based upon the terms of any Reimbursement Obligation to such provider except to the extent and for periods during which Bond Related Costs and other payments are required to be made pursuant to such Reimbursement Obligation due to such provider advancing funds; and
- (v) the amount of any investment earnings and return of principal or projected investment earnings and projected return of principal, as the case may be, allocable to amounts in the Debt Service Reserve Fund, shall be deducted from the Adjusted Bond Debt Service Requirements for the applicable period.

"Advance Refunded Municipal Bonds" shall mean any bonds or other obligations of any state of the United States of America or of any agency, instrumentality or local governmental unit of any such state (i) which are not callable at the option of the obligor or otherwise prior to maturity or as to which irrevocable notice has been given by the obligor to call such bonds or obligations on the date specified in the notice, (ii) which are fully secured as to principal and interest and redemption premium, if any, by a fund consisting only of cash or Government Obligations which is sufficient to pay interest when due, principal of and redemption premium, if any, on such bonds or other obligations described in this definition on the maturity date or dates thereof or on the specified redemption date or dates, as appropriate.

"Applicable Supplemental Trust Agreement" shall mean with respect to any Series of Bonds, the Supplemental Trust Agreement authorizing such Series of Bonds.

"Appreciated Value" shall mean with respect to Deferred Income Bonds until the interest commencement date thereon, an amount equal to the principal amount of such Deferred Income Bond (determined on the basis of the initial principal amount per \$5,000 at the interest commencement date thereof) plus the amount, assuming compounding of earnings which would be produced on the investment of such initial amount, beginning on the dated date of such Deferred Income Bond and ending on the interest commencement date, at a yield which, if produced until the interest commencement date, will produce \$5,000 at the interest commencement date.

"Authorized Officer" shall mean the Treasurer or any designee thereof and any other person authorized by law to perform a duty or sign a document under the Trust Agreement.

"Bond Authorizations" shall mean such provisions of the laws of the Commonwealth enacted in accordance with the applicable provisions of the Constitution of the Commonwealth authorizing bonds for transportation-related purposes or to refund any Bonds or Transportation Bonds which may be issued as special obligation bonds under the provisions of the Act.

"Bonds" shall mean any of the Bonds of the Commonwealth authenticated and delivered under the Trust Agreement.

"Bond Debt Service Requirement" shall mean, for any period of calculation, the aggregate of the interest, principal amount, and Sinking Fund Payments due or to become due other than by reason of redemption at the option of the Commonwealth or the registered owner of any Bonds on all Bonds Outstanding during such period and shall include the scheduled principal and interest portions of the Accreted Value of Capital Appreciation Bonds and the Appreciated Value of Deferred Income Bonds becoming due at maturity or by virtue of Sinking Fund Payments on such Bonds.

"Bond Counsel" shall mean any lawyer or firm of lawyers nationally recognized in the field of municipal finance and selected by the Treasurer.

"Bond Related Costs" shall mean all costs, fees and expenses of the Commonwealth incurred or related to any Liquidity Facility, Credit Enhancement, Reserve Credit Facility, any remarketing or other secondary market transactions, any fees of Bond Counsel, attorneys, financial advisors, Fiduciaries, remarketing agents, rebate consultants, accountants and other advisors retained by the Commonwealth in connection with a Series, and any other fees, charges and expenses that may be lawfully incurred by the Commonwealth to a provider of any Credit Enhancement, Liquidity Facility or Reserve Credit Facility, other than amounts paid as the costs of issuance for a series or to reimburse the provider of any Credit Enhancement, Liquidity Facility or Reserve Credit Facility.

"1992 Bonds" shall mean any outstanding bonds issued pursuant to the 1992 Trust Agreement.

"Capital Appreciation Bonds" shall mean any Bonds as to which interest is payable only at the maturity or prior redemption thereof.

"Code" shall mean the Internal Revenue Code of 1986, as amended.

"Credit Enhancement" shall mean any agreement, including, but not limited to a policy of bond insurance, surety bond, irrevocable letter of credit, credit agreement, credit facility or guaranty arrangement with a bank, trust company, insurance company, surety bonding company, pension fund or other financial institution that provides increased credit on or security for any Series (or portion thereof) of Bonds and, if authorized by a Supplemental Trust Agreement, shall include a Reserve Credit Facility.

"Debt Service Fund Requirement" shall mean, as of any particular date of computation, (i) any unpaid interest due on such Bonds at or before said date and all unpaid interest due on such Bonds at or before said date and all unpaid interest on such Bonds accrued but not due at said date, (ii) the principal amount of any such Bonds matured and unpaid at or before said date, and (iii) with respect to any Principal Installment of any Bonds not included in (ii) above, but payable on the next succeeding Principal Installment payment date other than by reason of redemption at the option of the Commonwealth or the Holder of any Bonds, that portion of such Principal Installment determined by multiplying such Principal Installment by a fraction, the numerator of which shall be the number of days elapsed from and including the immediately preceding Principal Installment payment date, or if there be no such date with respect to such Bonds, the date of issuance thereof, to the date of such calculation and the denominator of which shall be the number of days from and including the immediately preceding Principal

date, or if there be no such date with respect to such Bonds, the date of issuance thereof, to  
next payment date.

"Debt Service Reserve Fund Requirement" shall mean, as of any particular date of computation  
the proviso below, the amount described in (i), (ii) or (iii) below, whichever amount is the smallest:

- (i) ten percent (10%) of the original principal amount of all Series of Bonds Outstanding, provided that if a Series had more than a de minimis amount (as defined in U.S. Treas. Reg. §1.148-1) of original issue discount or premium, the issue price (as so defined) of such Series, net of pre-issuance accrued interest (as so defined), shall be used to measure said ten percent limitation in lieu of the original principal amount;
- (ii) one hundred twenty-five percent (125%) of the average annual aggregate amount of Principal Installments and interest becoming due in any Fiscal Year on all Bonds Outstanding, using the Assumed Rate for any Variable Rate Bonds (or any Reimbursement Obligations issued in connection therewith which are deemed to be Bonds as described in "Credit Enhancement/Liquidity Facilities" below); or
- (iii) fifty percent (50%) of the maximum aggregate amount of Principal Installments and interest becoming due in the current or any future Fiscal Year on all Bonds Outstanding, using the Assumed Rate for any Variable Rate Bonds (or any Reimbursement Obligations issued in connection therewith which are deemed to be Bonds as described in "Credit Enhancement/Liquidity Facilities" below), less, in any such Fiscal Year, any amounts received as payment of accrued interest from the sale of any Bonds which amounts are deposited in the Debt Service Fund;

provided, however, that if the Trustee shall receive the notice described in "Covenant as to Gasoline Taxes and Infrastructure Fund" below, the amount in (iii) above shall become "one hundred percent (100%)" rather than "fifty percent (50%)."

"Defeasance Obligations" shall mean Government Obligations and Advance Refunded Municipal Bonds.

"Fiduciary" shall mean the Trustee or any Paying Agent.

"Fiscal Year" shall mean the period beginning on July 1 of any calendar year and ending on June 30 of the succeeding calendar year or such other period of twelve consecutive calendar months as may be provided by law as the fiscal year of the Commonwealth.

"Funded Debt Service Fund Requirement" shall mean, as of any particular date of computation, an amount equal to the Debt Service Reserve Fund Requirement less the stated and unpaid amounts of all Reserve Credit Facilities and any amount required to reimburse any provider of a Reserve Credit Facility, to the extent provided in a Supplemental Trust Agreement.

"Gasoline Tax" shall mean the excise imposed on fuel (other than aviation fuel) by the provisions of Chapter 64A of the Massachusetts General Laws in effect as of the date of issuance of the Bonds.

"Government Obligations" shall mean direct general obligations of, or obligations the timely payment of principal of and interest on which are unconditionally guaranteed by, the United States of America.

"Hedge Provider" shall mean the counterparty with whom the Commonwealth enters into a Qualified Hedge Agreement.

"Highway Fund" shall mean the Highway Fund of the Commonwealth so designated by Section 34 of Chapter 90 of the Massachusetts General Laws, as amended, or any other fund or account of the Commonwealth or any agency thereof created in replacement thereof.

"Infrastructure Fund" shall mean the subfund of the Highway Fund so designated and established pursuant to the provisions of the Act or any other fund or account of the Commonwealth or any agency thereof created in replacement thereof.

"Liquidity Facility" shall mean any agreement with a bank, trust company, insurance company, surety bonding company, pension fund or financial institution under which it agrees to purchase Tender Bonds.

"Outstanding," when used with reference to Bonds, shall mean all Bonds authenticated and delivered, as of a particular date, except (i) any Bond cancelled by the Commonwealth or a Fiduciary at or before said date, (ii) any Bond in lieu of or in substitution for which another Bond shall have been authenticated and delivered and (iii) Bonds deemed to have been paid as described under "Defeasance".

"Paying Agent" shall mean any paying agent or co-paying agent for a Series of Bonds.

"Permitted Investments" shall mean and include any of the following, if and to the extent the same are at the time legal for investment of Commonwealth funds:

- (i) Government Obligations;
- (ii) Certificates or receipts representing direct ownership of future interest or principal payments on Government Obligations or any obligations of agencies or instrumentalities of the United States of America which are backed by the full faith and credit of the United States, which obligations are held by a custodian in safekeeping on behalf of the holders of such receipts;
- (iii) Direct obligations and fully guaranteed certificates of beneficial interest of the Export-Import Bank of the United States; senior debt obligations of the Federal Home Loan Banks; debentures of the Federal Housing Administration; guaranteed mortgage-backed bonds and guaranteed pass-through obligations of the Government National Mortgage Association; guaranteed Title XI financing of the U.S. Maritime Administration; mortgage-backed securities and senior debt obligations of the Federal National Mortgage Association; obligations of the Student Loan Marketing Association; obligations of the Federal Farm Credit Systems; obligations of the Resolution Trust Corporation and participation certificates and senior debt obligations of the Federal Home Loan Mortgage Corporation or any successor agency to each of the foregoing;
- (iv) All other obligations issued or unconditionally guaranteed as to the timely payment of principal and interest by an agency or person controlled or supervised by and acting as an instrumentality of the United States of America pursuant to authority granted by Congress;
- (v) (a) Interest-bearing time or demand deposits, certificates of deposit, or other similar banking arrangements with any government securities dealer, bank, trust company, savings and loan association, national banking association or

other savings institution (including the Trustee), provided that such deposits, certificates, and other arrangements are fully insured by the Federal Deposit Insurance Corporation or the Federal Savings and Loan Insurance Corporation or (b) interest-bearing time or demand deposits or certificates of deposit with any bank, trust company, national banking association or other savings institution (including the Trustee), provided such deposits and certificates are in or with a bank, trust company, national banking association or other savings institution whose long-term unsecured debt is rated in one of the three highest long-term Rating Categories by each Rating Agency then maintaining a rating on any Bonds, and provided further that with respect to (a) and (b), any such obligations are held by the Trustee or a bank, trust company or national banking association other than the issuer of such obligations, unless the issuer is the Trustee;

- (vi) Repurchase agreements collateralized by securities described in subparagraphs (i), (ii), (iii) or (iv) above with any registered broker/dealer or with any commercial bank, provided that (a) a specific written repurchase agreement governs the transaction, (b) the securities are held, free and clear of any lien, by the Trustee or an independent third party acting solely as agent for the Trustee, and such third party is (1) a Federal Reserve Bank, or (2) a bank which is a member of the Federal Deposit Insurance Corporation and which has combined capital, surplus and undivided profits of not less than \$25 million, and the Trustee shall have received written confirmation from such third party that it holds such securities, free and clear of any lien, as agent for the Trustee, (c) the repurchase agreement has a term of thirty days or less, or the Trustee or the third-party custodian will value the collateral securities no less frequently than monthly and will liquidate the collateral securities if any deficiency in the required collateral percentage is not restored within five business days of such valuation, and (d) the fair market value of the collateral securities in relation to the amount of the repurchase obligation, including principal and interest, is equal to at least 102%;
- (vii) Money market funds rated in the highest short-term Rating Category by each Rating Agency then maintaining a rating on any Bonds;
- (viii) Commercial paper rated in the highest short-term Rating Category by each Rating Agency then maintaining a rating on any Bonds;
- (ix) Advanced-Refunded Municipal Bonds;
- (x) Short-term or long-term obligations the interest on which is excludable from gross income for Federal income tax purposes and that are rated in the three highest rating categories by each Rating Agency then maintaining a rating on any Bonds Outstanding;
- (xi) investment contracts with banks or other financial institutions whose long-term unsecured debt or claims-paying ability is rated in one of the three highest Rating Categories by each Rating Agency then maintaining a rating on any of the Bonds Outstanding, but in no event lower than the Rating Category designated by such Rating Agency for the Bonds.



"Pledged Funds" shall mean and include the following:

- (i) all moneys received or to be received by the Commonwealth from that portion of the Gasoline Tax equal to four and eighty-six hundredths cents (\$.0486) per gallon;
- (ii) all moneys received or to be received by the Trustee from the 1992 Trust Agreement pursuant to the 1992 Trust Agreement;
- (iii) immediately upon the discharge and release of the lien of the 1992 Trust Agreement in accordance with the "Defeasance" section thereof, all moneys received or to be received by the Commonwealth from that portion of the Gasoline Tax equal to two cents (\$.02) per gallon, together with any other amounts then constituting "Pledged Funds" within the meaning of the 1992 Trust Agreement; and
- (iv) to the extent permitted in the Trust Agreement such Addition Pledged Funds as the Commonwealth may by a subsequent Supplemental Trust Agreement pledge to the Trustee as security for the Bonds.

"Principal Installment" shall mean (i) the principal amount of Outstanding Bonds of a Series which mature on a single future date, reduced by the aggregate principal amount of such Outstanding Bonds which would at or before said future date be retired by reason of the payment when due and application of Sinking Fund Payments payable at or before said future date for the retirement of such Outstanding Bonds, plus (ii) the amount of any Sinking Fund Payment payable on said future date for the retirement of any Outstanding Bonds of said Series.

"Qualified Hedge Agreement" shall mean an interest rate exchange, cap, floor or collar agreement between the Commonwealth and a Hedge Provider based upon a notional amount where (a) the Hedge Provider, or the person who guarantees the obligation of the Hedge Provider to make any payments due to the Commonwealth, has unsecured long-term obligations rated, or (b) the hedge agreement itself is rated, in each case as of the date the hedge agreement is entered into, by each Rating Agency then maintaining a rating on the Bonds Outstanding in a Rating Category, with respect to each such Rating Agency, at least equal to "A," but in no event lower than the Rating Category designated by such Rating Agency for the Bonds Outstanding subject to such hedge agreement.

"Rating Agency" shall mean Moody's Investors Service, Standard & Poor's Corporation and Fitch Investors Service and their successors or assigns.

"Rating Categories" shall mean rating categories as published by a Rating Agency in its written compilations of ratings and any written supplement or amendment thereto and any such Rating Category shall be determined on the generic rating without regard to any modifiers and, unless otherwise specified in the Trust Agreement or an Applicable Supplemental Trust Agreement, shall be long term ratings.

"Reserve Credit Facility" shall mean one or more of the following which may be deposited in the Debt Service Reserve Fund:

- (i) an irrevocable, unconditional and unexpired letter of credit or other financial commitment issued by a banking institution the unsecured long-term obligations of which are rated, by each Rating Agency then maintaining a rating on the Bonds Outstanding, at least equal to "A," but in no event lower than the Rating Category designated by such Rating Agency for the Bonds Outstanding, or, if

any such Rating Agency does not maintain a rating on such banking institution, it shall confirm that the deposit of the Reserve Credit Facility shall not result in a reduction of its rating on the Bonds Outstanding, or

- (ii) an irrevocable and unconditional policy or policies of insurance in full force and effect and issued by a municipal bond insurer having a rating, from each Rating Agency then maintaining a rating on the Bonds Outstanding, at least equal to "A," but in no event lower than the Rating Category designated by such Rating Agency for the Bonds Outstanding, or, if any such Rating Agency does not maintain a rating on such insurer, it shall confirm that the deposits of the Reserve Credit Facility shall not result in a reduction of its rating on Bonds Outstanding,

in each case providing for the payment of sums for the payment of Principal Installments and interest on Bonds in the manner provided under "Debt Service Reserve Fund and Reserve Account" below.

"Sinking Fund Payment" shall mean the amount of money required by any Supplemental Trust Agreement to be paid by the Commonwealth on a single future date for the retirement of any Outstanding Bonds of said Series which mature after said future date, but does not include any amount payable by the Commonwealth by reason of the redemption of Bonds at the election of the Commonwealth.

"Tax Exempt Bonds" shall mean any Bonds accompanied by a Bond Counsel's opinion upon the original issuance thereof that the interest on such Bonds is not includable in the gross income of the holder thereof for Federal income tax purposes.

"Transportation Bonds" shall mean bonds issued from time to time by the Commonwealth pursuant to the Act, other than Bonds issued under the Trust Agreement.

"1992 Trust Agreement" shall mean the Trust Agreement dated as of June 1, 1992 between the Commonwealth and the 1992 Trustee relating to Special Obligation Revenue Bonds issued pursuant to the provisions of Section 20 of Chapter 29 of the Massachusetts General Laws, as such agreement may be amended and supplemented from time to time.

### **The Pledge**

There are pledged for the payment of principal and Redemption Price of and interest on the Bonds (i) the Pledged Funds and all rights to receive the same, whether existing or coming into existence and whether held or thereafter acquired and including any proceeds thereof, (ii) all amounts, securities and Reserve Credit Facilities and any investment earnings with respect thereto, in all Funds and Accounts established by or pursuant to the Trust Agreement other than the Rebate Fund, and (iii) any amounts payable to the Commonwealth by a Hedge Provider pursuant to a Qualified Hedge Agreement. The full faith and credit of the Commonwealth has not been pledged to the payment of the Bonds.

The Commonwealth may in any Supplemental Trust Agreement pledge additional portions of the Gasoline Tax or any Additional Pledged Funds or portions thereof which the Commonwealth may lawfully pledge to the payment of amounts due under the Trust Agreement. From and after the date of such Supplemental Trust Agreement such amounts shall be deemed part of the Pledged Funds under the Trust Agreement. No amounts may be pledged which are subject to any other lien or pledge unless such lien or pledge is made expressly subordinate to the pledge created under the Trust Agreement.

## **Trust Agreement to Constitute Contract**

The Trust Agreement constitutes a contract between the Commonwealth and the registered owners from time to time of the Bonds, and the pledge made therein and the covenants and agreements therein set forth to be performed by or on behalf of the Commonwealth shall be for the equal benefit, protection and security of the registered owners of any and all of the Bonds, all or which, regardless of the time or times of their issue or maturity, shall be of equal rank without preference, priority or distinction of any of the Bonds over any other thereof, except as otherwise expressly provided in or permitted by the Trust Agreement.

## **Authorization of Bonds**

The Commonwealth is authorized to issue one or more Series of Bonds under the Trust Agreement, which Bonds may be issued without limitation as to amount except as provided in the Trust Agreement with respect to Additional Bonds or as limited by law. The Bonds may be issued as Fixed Rate Bonds, Variable Rate Bonds, Tender Bonds, Capital Appreciation Bonds, Deferred Income Bonds or Discount Bonds or any combination thereof.

The Commonwealth may issue Bonds ("Variable Rate Bonds") which provide for a variable, adjustable, convertible or other similar rates of interest, not fixed as to percentage at the date of issue for the term thereof. Variable Rate Bonds shall not exceed fifteen percent (15%) of the aggregate principal amount of all Bonds Outstanding. Any Variable Rate Bonds shall bear a ceiling (the "Variable Rate Ceiling") on the interest payable thereunder. Upon the date of issuance of any Variable Rate Bonds, an Authorizing Officer will determine the interest rate (the "Assumed Rate") which is the average interest rate expected to be paid on such Variable Rate Bonds for the balance of the Fiscal Year in which such Bonds are issued. Not later than fifteen (15) business days after the commencement of each Fiscal Year thereafter, an Authorizing Officer will establish an Assumed Rate for such Variable Rate Bonds which shall be the Assumed Rate thereof for such Fiscal Year.

The Commonwealth may provide that any Series of Bonds may include an option exercisable by the registered owners thereof to have such Bonds ("Tender Bonds") either repurchased or redeemed prior to the maturity thereof. Any Tender Bonds must be secured at all times by a Liquidity Facility providing for the repurchase or payment of any tender price of Tender Bonds which have not been remarketed upon tender of such Bonds and any accrued and unpaid interest due on such Bonds upon the tender date thereof. The provider of any such Liquidity Facility shall have a rating on its short term obligations within the highest Rating Category from each Rating Agency then maintaining a rating on the Bonds Outstanding.

The Commonwealth may issue Bonds ("Discount Bonds") which either bear a zero stated rate of interest or bear a stated rate of interest such that such Bonds are sold at a price less than the aggregate principal amount thereof in order to provide such yield thereon as deemed appropriate and desirable thereon by the Commonwealth. The Commonwealth may provide for the determination of the "principal amount" and "interest" payable on such Bonds.

## **Additional Bonds**

One or more Series of Additional Bonds may be issued for the purpose of (i) paying all or a portion of the cost of any Project including the refunding of any Transportation Bonds, (ii) the making of deposits in the Debt Service Fund and the Debt Service Reserve Fund, (iii) the payment of the costs of issuance of such Bonds, (iv) the payment of the principal of and interest and premium, if any, on notes issued in anticipation of such Bonds, or (v) any combination of the foregoing.

Additional Bonds may be issued only upon the delivery, among other items, of the following:

- (i) A Bond Counsel's opinion with respect to the validity of the Additional Bonds and the enforceability of the pledge under the Trust Agreement;

- (ii) A certificate or certificates of the Commissioner of Revenue or the Comptroller setting forth the amount of Pledged Funds received by the Commonwealth for each month for the eighteen (18) month period ending with the last full month immediately preceding the issuance of the Additional Bonds;
- (iii) One of the following certificates as determined by the Treasurer:
  - (A) A certificate of an Authorized Officer showing that the amount of Pledged Funds received by the Treasurer during any twelve (12) consecutive months out of such eighteen (18) month period referred to in subparagraph (ii) above was not less than two hundred percent (200%) of the maximum aggregate Adjusted Bond Debt Service Requirement due in the then current or any future Fiscal Year on Bonds Outstanding including the proposed Additional Bonds, or
  - (B) if the Commonwealth shall pledge an additional portion of the Gasoline Tax or any other Additional Pledged Funds which amounts shall have been collected by the Commonwealth for at least twelve (12) consecutive months of the eighteen (18) month period described in subparagraph (ii) above, (x) a certificate of the Comptroller and/or the Commissioner of Revenue showing Pledged Funds for eighteen (18) consecutive months immediately preceding the month in which the Additional Bonds are issued, calculated on the basis that Pledged Funds shall include such Additional Pledged Funds for such period, and (y) a certificate of an Authorized Officer showing that the Pledged Funds calculated as provided in subparagraph (ii) above for any twelve (12) consecutive months during the eighteen (18) month period described in (x) above shall be not less than two hundred percent (200%) of the maximum aggregate Adjusted Bond Debt Service Requirement during the then current Fiscal Year or any future Fiscal Year on all Bonds Outstanding including the proposed Additional Bonds, or
  - (C) if the Commonwealth shall pledge an additional portion of the Gasoline Tax or any other Additional Pledged Funds, which Additional Pledged Amounts have not been collected by the Commonwealth during at least twelve (12) consecutive months of the eighteen (18) month period described in subparagraph (ii) above, a certificate of an Authorized Officer showing that the amount of any Pledged Funds projected to be received by the Commonwealth after giving effect to any such Additional Pledged Funds during the first full Fiscal Year immediately succeeding the issuance of the proposed Additional Bonds will not be less than two hundred percent (200%) of the maximum aggregate Adjusted Bond Debt Service Requirement due in the then current or in any future Fiscal Year on Bonds Outstanding including the proposed Additional Bonds;
- (iv) If the Commonwealth shall deliver a certificate described in (iii)(B) above, which shall include as a basis for calculation of Pledged Funds any Additional Pledged Funds, other than an additional portion of the Gasoline Tax or a certificate pursuant to (iii)(C) above, confirmation from each Rating Agency maintaining a rating on Bonds Outstanding that the issuance of such Additional Bonds shall not adversely affect their rating in effect on Bonds Outstanding;
- (v) A certificate of the Secretary of Administration and Finance that the amount of such Additional Bonds are within the limitations established by the Capital Spending Plan in effect as of the date of issuance of such Additional Bonds.

## **Refunding Bonds**

One or more Series of Refunding Bonds may be issued for the purpose of refunding all or any part of the Bonds of one or more Series Outstanding upon delivery, among other items, of the following:

- (i) An opinion of Bond Counsel as described above under "Additional Bonds;"
- (ii) A certificate of an Authorized Officer setting forth the Adjusted Bond Debt Service Requirement for each Fiscal Year in which Bonds are or will be Outstanding (a) computed immediately prior to the delivery of such Refunding Bonds and (b) computed immediately after the delivery of such Refunding Bonds, and showing that the Adjusted Bond Debt Service Requirement in each Fiscal Year in which Bonds will be Outstanding as computed in (b) of this paragraph will not be greater than the Adjusted Bond Debt Service Requirement in each such Fiscal Year as computed in (a) of this paragraph; provided that, in lieu of such certificate, the Comptroller or Commissioner of Revenue and an Authorized Officer may deliver to the Trustee certificates satisfying the conditions described under "Additional Bonds;" and
- (iii) An amount of money or Defeasance Obligations sufficient to effect payment at maturity or redemption of the Bonds to be refunded.

## **Bond Anticipation Notes**

The Commonwealth may, to the extent authorized by law, issue notes (and renewals thereof) in anticipation of a Series of Bonds. The proceeds of such notes or such Series of Bonds may be pledged for the payment of the principal of and interest on such notes. The Commonwealth may also pledge the Pledged Funds to the payment of such notes on a subordinated basis. Prior to the issuance of any such notes, the Treasurer shall certify to the Trustee that he reasonably expects that all applicable requirements pertaining to the issuance of the Series of Bonds in anticipation of which such notes are to be issued can be satisfied.

## **Creation of Liens; Other Indebtedness**

The Commonwealth may not issue any bonds, notes or other evidences of indebtedness, other than the Bonds, secured by a pledge of or other lien on the Pledged Funds or any other moneys, securities and funds held or set aside by the Commonwealth or by the Fiduciaries under the Trust Agreement, and shall not otherwise create or cause to be created any lien or charge on such Pledged Funds, moneys, securities and funds. The Trust Agreement permits the issuance of other indebtedness (and renewals thereof), including bond anticipation notes, secured by a subordinate lien on Pledged Funds, and other indebtedness secured by a lien on that portion of the Gasoline Tax or any other amounts not included as Pledged Funds.

## **Credit Enhancement/Liquidity Facilities**

The Commonwealth may obtain or cause to be obtained Credit Enhancement or a Liquidity Facility providing for payment of all or a portion of the principal, premium, or interest due or to become due on such Bonds or providing for the purchase of such Bonds or a portion thereof. In connection therewith the Commonwealth may agree with the issuer of such Credit Enhancement or Liquidity Facility to reimburse such issuer directly for amounts paid under the terms of such Credit Enhancement or Liquidity Facility, together with interest thereon. Such reimbursement obligation may be subject to a lien on Pledged Funds on a parity with the lien created under the Trust Agreement. A reimbursement obligation relating to a Liquidity Facility securing Variable Rate Bonds may be subject to a lien on Pledged Funds only to the extent that it is subordinate to the lien created under the Trust Agreement.

## **Qualified Hedge Agreements**

The Commonwealth may from time to time enter into Qualified Hedge Agreements with a Hedge Provider with respect to all or a portion of the Bonds of any Series Outstanding. The obligations of the Commonwealth thereunder may be secured by a pledge of the Pledged Funds; provided, however, that such security shall be expressly subordinate to the security for the Bonds Outstanding.

Any amounts paid to the Commonwealth pursuant to a Qualified Hedge Agreement shall be deposited in the Revenue Account. Any amounts payable by the Commonwealth under a Qualified Hedge Agreement may be payable from the Infrastructure Fund from amounts after funding of amounts in the various Funds and Accounts under the Trust Agreement. Upon the issuance of any Additional Bonds or Refunding Bonds, the Authorized Officer shall set an interest rate (the "Assumed Hedge Rate") which the Authorized Officer reasonably determines will be the average interest rate which will be payable for the next succeeding twelve consecutive months on the notional amount under any Qualified Hedge Agreement establishing a variable interest rate for Fixed Rate Bonds.

## **Establishment of Funds and Accounts**

The following funds and accounts shall be established and shall be held by the Trustee:

- (i) Redemption Fund;
- (ii) Debt Service Fund;
- (iii) Debt Service Reserve Fund;
- (iv) Bond Related Costs Funds; and
- (v) Rebate Fund.

Such funds, except the Rebate Fund, are subject to the pledge created under the Trust Agreement.

The Treasurer shall establish a Revenue Account and Reserve Account to be maintained as part of the Infrastructure Fund which are to be held by the Treasurer so long as Bonds shall remain Outstanding. Such Accounts shall be deposited with the Trustee and shall be subject to the pledge created under the Trust Agreement.

## **Bond Proceeds**

The Treasurer shall apply the proceeds of any Bonds to the payment of the costs of issuance of the related Series of Bonds, to the extent permitted by law, to pay the cost of Projects for which such Bonds have been issued or to pay notes issued in anticipation of such Bonds. Any balance remaining after payment of such amounts shall be paid by the Treasurer to the Trustee and deposited in the Redemption Fund and applied to the redemption of Bonds of the related Series.

## **Revenue Account**

The Commissioner of Revenue shall deliver to the Trustee within eight (8) business days after the end of the month, commencing with the end of the month immediately following the month in which the Bonds are issued, a certificate stating the amount of Pledged Funds collected by the Commonwealth during such month. Such amount shall be paid by the Treasurer to the Trustee within the two (2) business days thereafter from amounts credited to the Infrastructure Fund, or from amounts otherwise credited to the Highway Fund if the amounts credited to the Infrastructure Fund are less than the Pledged Funds calculated as described above, and deposited by the Trustee in the Revenue Account and applied as set forth below.

Immediately upon receipt thereof, the Trustee shall deposit in the Revenue Account any Pledged Funds received from the 1992 Trustee pursuant to the 1992 Trust Agreement, to be applied as set forth below.

So long as the Act shall require that the expenditure of amounts in the Infrastructure Fund are subject to appropriation for the purposes described below, at the beginning of each Fiscal Year after the adoption of the operating budget for the Commonwealth for such Fiscal Year, the Secretary of Administration and Finance and the Treasurer shall certify to the Trustee the amount appropriated for such Fiscal Year for payment of the following amounts:

- (i) the Bond Debt Service Requirement for such Fiscal Year;
- (ii) that portion of the Debt Service Reserve Fund Requirement, if any, required to be funded for such Fiscal Year;
- (iii) the Bond Related Costs, if any, for such Fiscal Year; and
- (iv) the Rebate Fund Requirement, if any, for such Fiscal Year.

If amounts are appropriated for such purpose as an aggregate sum, such sum shall be allocated in the order set forth above for the amounts set forth above and such certificate shall set forth such allocation. To the extent additional amounts are appropriated during a Fiscal Year for any such purpose, the officials described above shall also certify to the Trustee the amount of any such supplemental appropriation. The aggregate amounts appropriated for each such purpose as provided in the Trust Agreement shall be referred to as an "Appropriated Amount" for such purpose.

#### **Flow of Funds**

On the last business day of each calendar month beginning with the second month immediately following the month in which the Bonds are delivered, the Trustee shall transfer from amounts available in the Revenue Account to the following Funds and in the following order:

- (i) To the Debt Service Fund, an amount which together with other amounts on deposit in such fund, will equal the Debt Service Fund Requirement calculated as of the next succeeding interest payment date or Principal Installment payment date, as the case may be; provided, however, that the aggregate amount deposited therein during a Fiscal Year shall not exceed the Appropriated Amount during such Fiscal Year for such purpose unless the Treasurer shall certify to the Trustee that deposits of such amounts shall not then be subject to appropriation;
- (ii) To the Debt Service Reserve Fund, an amount equal to one-thirty-sixth (1/36th) of the Funded Debt Service Reserve Fund Requirement (including any amounts required to be deposited in preceding months for which amounts were not available) until the amount on deposit therein equals the Funded Debt Service Reserve Fund Requirement; provided, however, that if notice shall have been given to the Trustee pursuant to "Covenant as to Gasoline Taxes and Infrastructure Fund" below of a change in the amount of the Debt Service Reserve Fund Requirement, the foregoing provision shall apply to the amount of the Funded Debt Service Reserve Fund Requirement calculated without regard to such notice and the Trustee shall, in addition, deposit an amount equal to one-twelfth (1/12th) of the difference between the Funded Debt Service Reserve Fund Requirement prior to such notice and the revised Funded Debt Service Reserve Fund Requirement (including any amounts required to be deposited in preceding months for which amounts were not available) until the amount on deposit therein equals the revised Funded Debt Service

Reserve Fund Requirement; provided, further, that the aggregate amount deposited in the Debt Service Reserve Fund during a Fiscal Year shall not exceed the Appropriated Amount during such Fiscal Year for such purpose unless the Treasurer shall certify in writing to the Trustee that any deposits of any such amounts shall not be subject to appropriation;

- (iii) To the Reserve Account, any amount set forth in subparagraph (ii) above in excess of the Appropriated Amount for such purpose for such Fiscal Year; provided, however, that such amounts deposited in the Reserve Account shall be transferred to the Debt Service Reserve Fund upon the delivery of a certificate by the Secretary of Administration and Finance and the Treasurer to the Trustee to the effect that an appropriation is then in effect permitting such deposit in the Debt Service Reserve Fund;
- (iv) To the Bond Related Costs Fund, at such times and in such amounts, if any, as necessary to pay Bond Related Costs; provided, however, that the aggregate amount deposited therein during a Fiscal Year shall not exceed the Appropriated Amount during such Fiscal Year unless the Treasurer shall certify to the Trustee that deposits of such amounts shall not then be subject to appropriation;
- (v) To the Rebate Fund, the amount of the Rebate Fund Requirement, if any, determined in accordance with an Applicable Supplemental Trust Agreement; provided, however, that the aggregate amount deposited therein during a Fiscal Year shall not exceed the Appropriated Amount during such Fiscal Year unless the Treasurer shall certify to the Trustee that deposits of such amounts shall not then be subject to appropriation.

Upon deposit of the amounts described above and so long as there shall be Appropriated Amounts sufficient to pay the amounts set forth in subparagraph (i) above (if such appropriations shall be required by the Act or other provisions of law), the balance on deposit in the Revenue Account (less any amounts required to be deposited pursuant to subparagraphs (iv) and (v) above for which Appropriated Amounts are insufficient) shall be transferred by the Trustee on the last business day of each month to the Treasurer free and clear of the lien granted under the Trust Agreement and may be thereupon applied to any purpose permitted by law.

### **Debt Service Fund**

The Trustee shall pay out of the Debt Service Fund to the respective Paying Agents for any Bonds (i) the amount required for the interest and Principal Installments payable on the interest payment date and (ii) the amount required for the payment of interest and Redemption Price on the Bonds then to be redeemed. Amounts accumulated in the Debt Service Fund with respect to any Sinking Fund Payment (together with amounts accumulated therein with respect to interest on the Bonds for which such Sinking Fund Payment was established) may be applied prior to the forty-fifth (45th) day preceding the due date of such Sinking Fund Payment, to (i) the purchase of Bonds of the Series and maturity for which such Sinking Fund Payment was established, at prices not exceeding the applicable sinking fund Redemption Price plus interest on such Bonds to the first date on which such Bonds could be redeemed (or in the case of a Sinking Fund Payment due on the maturity date, the principal amount thereof plus interest to such date), such purchases to be made in such manner as the Treasurer shall arrange, or (ii) the redemption of such Bonds then redeemable by their terms. The applicable Redemption Price or principal amount (in the case of maturing Bonds) of any Bonds so purchased or redeemed shall be deemed to constitute part of the Debt Service Fund until such Sinking Fund Payment date for the purpose of calculating the amount of such Fund.

In satisfaction, in whole or in part, of any amount required to be paid into the Debt Service Fund which is attributable to a Sinking Fund Payment, there may be delivered on behalf of the Commonwealth to the Trustee Bonds of the Series and maturity entitled to such payment. All Bonds so delivered to the Trustee in satisfaction of



a Sinking Fund Payment shall reduce the amount thereof by the amount of the aggregate of the sinking fund Redemption Prices of such Bonds.

### **Redemption Fund**

The Commonwealth may deposit in the Redemption Fund any moneys, including Pledged Funds, not otherwise required by the Trust Agreement to be deposited or applied. If at any time the amount on deposit and available therefor in the Debt Service Fund is insufficient to pay the principal and Redemption Price of and interest on the Bonds then due, the Trustee shall withdraw from the Redemption Fund and deposit in the Debt Service Fund the amount necessary to meet the deficiency (other than amounts held therein for the redemption of Bonds for which a notice of redemption shall have been given). Subject to the foregoing, amounts in each account in the Redemption Fund may be applied by the Commonwealth to the redemption of Bonds at prices not exceeding the applicable Redemption Prices (plus accrued interest) had such Bonds been redeemed (or, if not then subject to redemption, at the applicable Redemption Prices when next subject to redemption), such purchase to be paid for by the Trustee at such times and in such manner as arranged and directed by an Authorized Officer.

### **Debt Service Reserve Fund and Reserve Account**

If at any time the amounts on deposit and available therefor in the Debt Service Fund, the Bond Related Costs Fund, or the Redemption Fund are insufficient to pay the principal, the Redemption Price of, and interest on the Bonds then due, the Trustee shall withdraw from the Debt Service Reserve Fund and deposit in the Debt Service Fund the amount necessary to meet the deficiency. If the amounts transferred from the Debt Service Reserve Fund are insufficient to pay such deficiency, the Trustee shall withdraw from the Reserve Account the amount necessary to meet the balance of such deficiency; provided, however, that the aggregate of such amount deposited therein from the Reserve Account shall not in any Fiscal Year, together with all other amounts deposited in the Debt Service Fund (other than from the Debt Service Reserve Fund) during such Fiscal Year, exceed the Appropriated Amount for the purpose of paying the principal, the Redemption Price of, and interest due on the Bonds Outstanding during such Fiscal Year. Amounts so withdrawn from the Debt Service Reserve Fund shall be derived, first, from cash or Permitted Investments on deposit therein and, second, from draws or demands on Reserve Credit Facilities held as a part thereof upon the terms and conditions set forth in any such Reserve Credit Facility or as set forth in the Applicable Supplemental Trust Agreement setting forth such Reserve Credit Facility.

If any draws are made from Reserve Credit Facilities and cash or Permitted Investments, amounts paid into the Debt Service Reserve Fund to replenish such amounts shall be paid first pro rata to the providers of the Reserve Credit Facilities to the extent of draws thereunder and then deposited in the Debt Service Reserve Fund.

If on any interest payment date, the amount on deposit in the Debt Service Reserve Fund and the Reserve Account is in excess of the Funded Debt Service Reserve Fund Requirement (calculated as of such interest payment date after the payment of the amount due on such date for the interest and Principal Installments on all Bonds Outstanding) the Trustee shall transfer such excess, first from the Reserve Account and then from the Debt Service Reserve Fund, to the Treasurer free and clear of the lien granted under the Trust Agreement and such amount may be thereupon applied to any purpose permitted by law.

Whenever the Trustee shall determine that the amount of cash and Permitted Investments on deposit in the Debt Service Reserve Fund and Reserve Account, together with all other funds available for the purpose, is equal to or in excess of the Redemption Price of all Bonds Outstanding, the Trustee, at the direction of an Authorized Officer, shall transfer the balance of such cash and Permitted Investments from the Debt Service Reserve Fund and Reserve Account to the Redemption Fund in connection with the redemption of all Bonds Outstanding; provided, however, that such amount deposited therein from the Reserve Account, together with all other amounts deposited therein (other than from the Debt Service Reserve Fund) during such Fiscal Year, shall not in such Fiscal Year exceed the Appropriated Amount for the purpose of paying the Redemption Price of all Bonds Outstanding during such Fiscal Year.

At any time, the Trustee shall, upon the written direction of an Authorized Officer, transfer any amount in the Debt Service Reserve Fund or the Reserve Account to the Bond Related Costs Fund in exchange for one or more Reserve Credit Facilities with aggregate stated and unpaid amounts not less than the amount so transferred; provided, however, that the aggregate amount so transferred from the Reserve Account during a Fiscal Year, together with amounts transferred to the Bond Related Costs Fund from the Revenue Account, shall not exceed the Appropriated Amount during such Fiscal Year unless the Treasurer shall certify to the Trustee that deposits of such amounts shall not then be subject to appropriation.

### **Bond Related Costs Fund**

The amount on deposit and available in the Bond Related Costs Fund shall be applied by the Trustee to the payment of Bond Related Costs at the times and in the amounts as directed from time to time by an Authorized Officer.

If at any time the amount on deposit and available therefor in the Debt Service Fund is insufficient to pay the principal and Redemption Price of and interest on the Bonds then due, the Trustee shall withdraw from the Bond Related Costs Fund, after withdrawal of amounts described above, and deposit in the Debt Service Fund the amount necessary to meet such deficiency; provided, however, that the aggregate of such amount deposited therein shall not in any Fiscal Year, together with all other amounts deposit therein during such Fiscal Year, exceed the Appropriated Amount for the purpose of paying the principal and Redemption Price of and interest due on the Bonds Outstanding during such Fiscal Year.

Upon the certification of an Authorized Officer and all Fiduciaries that all Bond Related Costs have been paid, any balance in the Bond Related Costs Fund shall be paid by the Trustee to the Treasurer free and clear of the lien created under the Trust Agreement and such amounts shall be applied to any purpose permitted by law.

### **Investments**

Except as otherwise described below under "Defeasance", money held for the credit of any Fund or Account under the Trust Agreement shall be invested in Permitted Investments which shall mature or be redeemable at the option of the holder thereof, on such dates and in such amounts as may be necessary to provide moneys to meet the payments required to be made from such Funds and Accounts. Amounts on deposit in the Debt Service Fund, the Debt Service Reserve Fund or the Reserve Account may only be invested in Permitted Investments of the type described in subparagraphs (i), (ii), (iii), (iv), (vi), (vii), (ix) or (xi) of the definition of Permitted Investments. Amounts on deposit in the Debt Service Reserve Fund or the Reserve Account may not be invested in any such Permitted Investments which mature or are otherwise not redeemable at the option of the holder for a period of more than five (5) years after the purchase thereof. Any income from Permitted Investments may be transferred to the Rebate Fund to the extent required by an Applicable Supplemental Trust Agreement.

In computing the amount in any Fund or Account for any purpose, Permitted Investments shall be valued at amortized cost. Unless otherwise provided in the Trust Agreement, Permitted Investments in any fund or account thereunder shall be valued at least once in each Fiscal Year on the last day thereof. Notwithstanding the foregoing, Permitted Investments in the Debt Service Reserve Fund shall be valued at amortized cost for all purpose of the Trust Agreement unless and until a withdrawal from such Fund shall be required, in which event such investments shall thereafter be valued at amortized cost or market, whichever is lower, until the balance in such Fund, on the basis of such valuation, shall equal the Funded Debt Service Fund Requirement.

### **Powers as to Bonds and Pledge**

The Commonwealth represents in the Trust Agreement that it is duly authorized under the Act and all applicable laws to create and issue Bonds thereunder and to enter into the Trust Agreement and to pledge the Pledged Funds and other moneys, securities and funds purported to be pledged by the Trust Agreement in the

manner and to the extent therein provided. The Commonwealth covenants that the Pledged Funds and other moneys, securities and funds so pledged are and will be free and clear of any pledge, lien, charge or encumbrance thereon with respect thereto prior to, or of equal rank with, the pledge created by the Trust Agreement except to the extent expressly permitted thereby. The Commonwealth agrees at all times, to the extent permitted by law, to defend, preserve and protect the pledge of the Pledged Funds and other moneys, securities and funds pledged under the Trust Agreement and all the rights of the Bondholders under the Trust Agreement against all claims and demands of all persons whomsoever.

#### **Extension of Payment of Bonds**

The Commonwealth agrees not to directly or indirectly extend or asset to the extension of the maturity of any of the Bonds or the time of payment of claims for interest by the purchaser or funding of such Bonds or claims for interest or by any other arrangement and in case the maturity of any of the Bonds or the time for payment of claims for interest shall be extended, such Bonds or claims for interest shall not be entitled in case of any default under the Trust Agreement to the benefit of the Trust Agreement or to any payment out of any assets of the Commonwealth or the funds (except funds held in trust for the payment of particular Bonds or claims for interest pursuant to the Trust Agreement) held by the Fiduciaries, except subject to the prior payment of the principal of all Bonds issued and Outstanding the maturity of which has not been extended and of such portion of the accrued interest on the Bonds as shall not be represented by such extended claims for interest. The Commonwealth may issue Refunding Bonds and such issuance shall not be deemed to constitute an extension of maturity of Bonds.

#### **Covenant as to Gasoline Taxes and Infrastructure Fund**

So long as any Bonds are Outstanding, the Commonwealth covenants to maintain that portion of the Gasoline Tax credited to the Highway Fund at all times at a rate of not less than six and eighty-six hundredths cents (\$.0686) per gallon or at such higher rate as may be established in a Supplemental Trust Agreement in connection with the pledge of Additional Pledged Funds. In addition, the Commonwealth covenants not to limit or alter the rights vested in the Commonwealth to collect the Pledged Funds and to deposit such amounts as provided in the Trust Agreement and not to impair the rights and remedies of the Trustee and Bondholders under the Trust Agreement and under the Act with respect to the Pledged Funds. Without limiting the generality of the foregoing, the Commonwealth agrees not to issue any additional bonds under the 1992 Trust Agreement except refunding bonds with debt service requirements less than or equal to the debt service requirements on the refunded bonds in each Fiscal Year. Any provisions of the Act creating covenants with Bondholders shall be deemed a covenant with the Bondholders under the Trust Agreement only to the extent expressly provided in the Trust Agreement and as limited thereby.

As soon as practicable after the end of each Fiscal Year, but not later than the penultimate business day of August following the end of such Fiscal Year, an Authorized Officer shall deliver to the Trustee a certificate, based upon an accounting by the Comptroller or the Commissioner of Revenue setting forth the amount of Pledged Funds for such Fiscal Year and the Adjusted Bond Debt Service Requirement for all Bonds Outstanding during such Fiscal Year. Such certificate shall also demonstrate whether the amount of Pledged Funds received by the Treasurer during any twelve (12) consecutive months out of the eighteen (18) month period ended at the end of such Fiscal Year was not less than two hundred percent (200%) of the maximum aggregate Adjusted Bond Debt Service Requirement due in the then current or any future Fiscal Year on Bonds Outstanding. If the certificate demonstrates that such amount was less than two hundred percent (200%) of such requirement as aforesaid, such certificate shall contain a notice to the Trustee that the definition of "Debt Service Reserve Fund Requirement" shall immediately be modified in accordance with the proviso at the end of said definition.

Unless otherwise permitted by law, no more than twenty percent (20%) of amounts to be credited to the Infrastructure Fund under the Act and received in any Fiscal Year shall be paid in such Fiscal Year or any subsequent Fiscal Year for any principal or interest on any bonds or notes or portions thereof, including any Bonds

Outstanding, issued to finance the central artery/third harbor tunnel project, so-called, or for direct expenditures on such project.

No provisions of the Trust Agreement shall prohibit the Commonwealth from applying amounts credited to the Infrastructure Fund, other than any Pledged Funds, calculated as of any date after the date of the Trust Agreement for any purposes permitted by law.

### **Capital Spending Plan**

The Secretary of Administration and Finance shall at the date of delivery of the 1994 Bonds file with the Trustee the capital spending plan (the "Capital Spending Plan") of the Commonwealth then in effect and shall thereafter, so long as any Bonds shall remain Outstanding, file with the Trustee any amendments or supplements thereto and any subsequent Capital Spending Plan prepared for the Commonwealth.

### **Accounts and Report**

As soon as it shall become available, the Treasurer shall file for each Fiscal Year during which Bonds shall be Outstanding with the Trustee the Comprehensive Annual Financial Report of the Commonwealth prepared by the Comptroller, including a report on the financial statements contained therein by an independent public accountant or firm of accountants.

### **Tax Covenants; Rebate Fund**

The Commonwealth shall take, or require to be taken, such action as may from time to time be required to assure the continued exclusion from the federal gross income of holders of any Series of Tax Exempt Bonds. The Commonwealth shall not permit the investment or application of the proceeds of any Series of Tax Exempt Bonds, including any funds considered proceeds within the meaning of Section 148 of the Code, to be used to acquire any investment property the acquisition of which, would cause such indebtedness to be "arbitrage bonds" within the meaning of said Section 148. The Commonwealth shall establish within the Rebate Fund a separate account within the Rebate Fund for such Series and may provide in the Applicable Supplemental Trust Agreement for the deposits of amounts therein to pay "rebate" on the investment of amounts under the Trust Agreement in accordance with Section 148(f) of the Code. Funds on deposit in the Rebate Fund shall be applied as set forth in the Applicable Supplemental Trust Agreement. The Rebate Fund and the amounts on deposit therein shall not be deemed Pledged Funds under the Trust Agreement.

### **Events of Default**

One or more of the following events shall constitute an Event of Default under the Trust Agreement:

- (i) if default shall be made in the payment of the principal or Redemption Price of any Bond when due, whether at maturity or by call for mandatory redemption or redemption at the option of the Commonwealth or any registered owner, or otherwise, or in the payment of any Sinking Fund Payment when due; or
- (ii) if default shall be made in the payment of any installment of interest on any Bond when due; or
- (iii) if default shall be made by the Commonwealth in the performance or observance of the covenants, agreements and conditions on its part described under the first paragraph of "Covenant as to Gasoline Taxes and Infrastructure Fund" above; or

- (iv) if default shall be made by the Commonwealth in the performance or observance of any other of the covenants, agreements or conditions on its part provided in the Trust Agreement or in the Bonds and such default shall continue for a period of thirty (30) days after written notice thereof shall be given to the Commonwealth by the Trustee or given to the Commonwealth and the Trustee by the registered owners of a majority in principal amount of the Bonds Outstanding; provided that if such default cannot be remedied within such thirty (30) day period, it shall not constitute an Event of Default hereunder if corrective action is instituted by the Commonwealth within such period and diligently pursued until the default is remedied.

#### **Application of Revenues and Other Moneys after Default**

During the continuance of an Event of Default, the Trustee shall apply the moneys, securities and funds held by the Trustee, including any Pledged Funds and the income therefrom, as follows and in the following order;

- (i) to the payment of the reasonable and proper charges and expenses of the Fiduciaries and of any counsel selected by a Fiduciary;
- (ii) to the payment of the interest and principal amount or Redemption Price then due on the Bonds, as follows:
  - (a) unless the principal amount of all of the Bonds shall have become due and payable,

First: To the payment to the persons entitled thereto to all installments of interest then due in the order of the maturity of such installments maturity, and, if the amount available shall not be sufficient to pay in full all installments maturing on the same date, then to the payment thereof ratably, according to the amounts due thereon, to the persons entitled thereto, without any discrimination or preference; and

Second: To the payment to the persons entitled thereto of the unpaid principal amount or Redemption Price of any Bonds which shall become due, whether at maturity or by call for redemption, in the order of their due dates, and, if the amount available shall not be sufficient to pay in full all the Bonds due on any date, then to the payment thereof ratably, according to the amounts of principal or Redemption Price due on such date, to the persons entitled thereto, without any discrimination or preference; and

- (b) if the principal of all the Bonds shall have become due and payable, to the payment of the principal amount and interest then due and unpaid upon the Bonds without preference or priority of principal over interest or of interest over principal, or of any instalment of interest over any other instalment of interest, or of any Bond over any other Bond, ratably, according to the amounts due respectively for principal amount and interest, to the persons entitled thereto, without any discrimination or preference;
- (iii) To the payment of any person entitled to the payment of any Bond Related Cost ratably in accordance with the amount of such Bond Related Costs.

The proceeds of any Credit Enhancement or Liquidity Facility shall be applied by the Trustee in the manner provided in the Supplemental Trust Agreement authorizing such Credit Enhancement or Liquidity Facility.

### **Proceedings Brought by Trustee**

If an Event of Default shall happen and shall not have been remedied, then and in every such case, the Trustee may proceed to protect and enforce its rights and the rights of the registered owners of the Bonds under the Trust Agreement by a suit or suits in equity or at law. The registered owners of a majority in principal amount of the Bonds Outstanding may direct the time, method and place of conducting any proceeding for any remedy available to the Trustee, provided that the Trustee shall have the right to decline to follow any such direction if the Trustee in good faith shall determine that the action or proceeding so directed would involve the Trustee in personal liability or be unjustly prejudicial to the Bondholders not parties to such direction.

Regardless of the happening of an Event of Default, the Trustee shall have power to, but unless requested in writing by the registered owners of a majority in principal amount of the Bonds then Outstanding and furnished with reasonable security and indemnity, shall be under no obligation to, institute and maintain such suits and proceedings as it may deem necessary or expedient to prevent any impairment of the security under the Trust Agreement, or necessary or expedient to preserve or protect its interest and the interests of the Bondholders.

Nothing contained in the Trust Agreement is intended to preclude the Trustee upon the occurrence of an Event of Default thereunder from asserting any and all remedies it may have at law or equity with respect to the Pledged Funds and other amounts held as security thereunder, including asserting any rights it may have as Trustee thereunder as a secured party with respect to all security granted thereunder notwithstanding any requirements contained in the Trust Agreement with respect to Appropriated Amounts.

### **Restriction on Bondholders' Action**

No registered owner of any Bond shall have any right to institute any suit, action or proceeding at law or in equity for the enforcement of any provision of the Trust Agreement or for any remedy under the Trust Agreement, unless such registered owner shall have previously given to the Trustee written notice of the happening of any Event of Default and the registered owners of at least twenty-five percent (25%) in principal amount of Bonds then Outstanding shall have filed a written request with the Trustee, and shall have offered it reasonable opportunity, to exercise the powers granted in the Trust Agreement in its own name, and unless such registered owners shall have offered to the Trustee adequate security and indemnity against the costs, expenses and liabilities to be incurred thereby, and the Trustee shall have refused to comply with such request within a reasonable time.

### **No Right of Acceleration**

Neither the Bondholders nor the Trustee shall have any right to accelerate the payment of principal or interest due on any Bonds Outstanding upon the occurrence of any Event of Default.

### **Responsibility of Fiduciaries**

The duties and obligations of the Fiduciaries shall be determined by the express provisions of the Trust Agreement. No Fiduciary shall be under any responsibility or duty with respect to the issuance of the Bonds for value or the application of the proceeds thereof or the application of any moneys paid to the Commonwealth or any other Fiduciary. No Fiduciary shall be under any obligation or duty to perform any act which would involve it in expense or liability or to institute or defend any suit in respect thereof, or to advance any of its own moneys, unless properly indemnified. No Fiduciary shall be liable in connection with the performance of its duties under the Trust Agreement except for its own negligence or bad faith nor shall any Fiduciary be liable for any action taken or omitted by it in good faith and believed by it to be authorized or within the discretion or rights or powers conferred upon it by the Trust Agreement.

## **Compensation**

The Commonwealth shall pay to each Fiduciary from time to time reasonable compensation for all services rendered under the Trust Agreement, including reasonable expenses, charges, counsel fees and other disbursements, and each Fiduciary shall have a lien therefor on any and all funds at any time held by it thereunder. Amounts unpaid more than thirty (30) days after they are billed to the Treasurer shall bear interest at the "base rate" of the Trustee in effect from time to time. The Commonwealth shall indemnify and save each Fiduciary harmless against any liabilities which it may incur in the exercise and performance of its powers and duties thereunder, and which are not due to its negligence or bad faith.

## **Resignation of Trustee**

The Trustee may at any time resign and be discharged of the duties and obligations created by the Trust Agreement by giving not less than sixty (60) days' written notice to the Treasurer and giving not less than thirty (30) days' written notice to each Bondholder and Paying Agent specifying the date when such resignation shall take effect, and such resignation shall take effect upon the day specified in such notice provided a successor shall have been appointed, unless previously a successor shall have been appointed by the Treasurer or the Bondholders as provided in the Trust Agreement, in which event such resignation shall take effect immediately on the appointment of such successor.

## **Removal of Trustee**

The Trustee may be removed at any time by an instrument or concurrent instruments in writing, filed with the Trustee, and signed by the registered owners of a majority in principal amount of the Bonds then Outstanding or their attorneys-in-fact duly authorized, excluding any Bonds held by or for the account of the Commonwealth. Except during the existence of an Event of Default, the Treasurer may remove the Trustee at any time for cause or upon not less than ninety (90) days, prior written notice to the Trustee for such other reason as shall be determined in the sole discretion of the Treasurer.

## **Appointment of Successor Trustee**

In case at any time the Trustee shall resign or shall be removed or shall become incapable of acting, or shall be adjudged a bankruptcy or insolvent, or if a receiver, liquidator or conservator of the Trustee, or of its property, shall be appointed, or if any public officer shall take charge or control of the Trustee, or of its property or affairs, a successor may be appointed by the registered owners of a majority in principal amount of the Bonds then excluding any Bonds held by or on the account of the Commonwealth. Pending such appointment, the Treasurer by a written instrument signed by an Authorized Officer and delivered to the predecessor Trustee shall forthwith appoint a Trustee to fill such vacancy until a successor Trustee shall be appointed by the Bondholders. Any Trustee appointed in succession to the Trustee shall be a bank or trust company organized under the laws of the Commonwealth, or a national banking association doing business and having its principal place of business in the Commonwealth, having a capital and surplus aggregating at least fifty million dollars (\$50,000,000), if there be such a bank or trust company or national banking association willing and able to accept the office on reasonable and customary terms and authorized by law to perform all duties imposed upon it by the Trust Agreement.

## **Supplemental Trust Agreement Effective upon Filing**

The Commonwealth and the Trustee may at any time and from time to time enter into supplements or amendments to the Trust Agreement for any one or more of the following purposes:

- (i) to cure any ambiguity, inconsistency or formal defect or omission in the Trust Agreement;

- (ii) to close the Trust Agreement against, or provide limitations and restrictions contained in the Trust Agreement on, the original issuance of Bonds;
- (iii) to add to the covenants and agreements of the Commonwealth contained in the Trust Agreement other covenants and agreements thereafter to be observed for the purpose of further securing the Bonds;
- (iv) to surrender any right, power or privilege reserved to or conferred upon the Commonwealth by the Trust Agreement;
- (v) to authorize Bonds of a Series and, in connection therewith, specify and determine any matters and things relative to such Bonds not contrary to or inconsistent with the Trust Agreement;
- (vi) to authorize any Credit Enhancement, Liquidity Facility, or Reserve Credit Facility;
- (vii) to exercise any provision in the Trust Agreement or to make such determinations thereunder as expressly provided therein to be exercised or determined in a Supplemental Trust Agreement;
- (viii) to confirm, as further assurance, any pledge under and the subjection to any lien or pledge created or to be created by the Trust Agreement of the Pledged Funds; and
- (ix) for any other purpose, provided that such Supplemental Trust Agreement does not prejudice in any material respect the right of the registered owner of any Bond Outstanding at the date such Supplemental Trust Agreement becomes effective.

#### **Powers of Amendment**

Any modification or amendment of the Bonds or of the Trust Agreement may be made by a Supplemental Trust Agreement, with the written consent (i) of the registered owners of at least a majority in the principal amount of all Bonds Outstanding at the time such consent is given, or (ii) in case less than all of the several Series of Bonds then Outstanding are affected by the modification or amendment, of the registered owners of at least a majority in principal amount of the Bonds of each Series so affected and Outstanding at the time such consent is given, and (iii) in case the modification or amendment changes the amount or date of any Sinking Fund Payment, of 100% of the registered owners of the Bonds of the particular Series and maturity entitled to such Sinking Fund Payment Outstanding at the time such consent is given; provided, however, that, if such modification or amendment will, by its terms, not take effect so long as any Bonds of any specified like Series and maturity remain Outstanding, the vote or consent of the registered owners of such Bonds shall not be required and such Bonds shall not be deemed to be Outstanding for the purpose of any calculation of Outstanding Bonds; and provided, further, that no such modification or amendment shall permit a change in the terms of redemption or maturity of the principal amount of any Outstanding Bond or of any installment of interest thereon or a reduction in the principal amount or the Redemption Price thereof or the rate of interest thereon or the method for determining such rate or terms of any Credit Enhancement or Liquidity Facility relating to a Bond without the consent of the registered owner of such Bond, or shall change or modify any of the rights or obligations of any Fiduciary without its written assent thereto, or shall reduce the percentages of the principal amount of Bonds the consent of which is required to effect any such modification or amendment.



## **Defeasance**

If the Commonwealth shall pay or cause to be paid, or there shall otherwise be paid, to the registered owners of the Bonds then Outstanding, the principal amount and interest and Redemption Price, if any, to become due thereon, at the times and in the manner stipulated therein and in the Trust Agreement then the pledge of any Pledged Funds or other moneys and securities pledged by the Trust Agreement and all other rights granted by the Trust Agreement shall be discharged and satisfied.

Bonds or interest installments for the payment or redemption of which moneys shall be held by the Fiduciaries, whether at or prior to the maturity or the redemption date of such Bonds, shall be deemed to have been paid if (i) in case any of said Bonds are to be redeemed on any date prior to their maturity, an Authorized Officer shall have given to the Trustee irrevocable instructions to provide notice of redemption on said date of such Bonds, (ii) there shall have been deposited with the Trustee either moneys in an amount which shall be sufficient, or Defeasance Obligations not subject to redemption or otherwise called for redemption for which amounts have been placed in escrow, in each case the principal of and interest on which when due will provide moneys which, together with any other deposited amounts, shall be sufficient, as certified by a firm of independent public accountants, to pay when due the principal amount or Redemption Price, if applicable, and interest due and to become due on said Bonds on and prior to the redemption date or maturity date thereof, as the case may be. Any cash received from the principal or interest payments on such Defeasance Obligations deposited with the Trustee, if not then needed for such purpose, may, to the extent practicable, be reinvested in Defeasance Obligations or, in lieu of such reinvestment at the time of receipt, the Commonwealth may direct the Trustee to enter into one or more forward purchase agreements providing for the purchase of Defeasance Obligations at future dates, as provided in the Trust Agreement.

For purposes of determining whether Variable Rate Bonds shall be deemed to have been paid prior to the maturity or redemption date thereof, as the case may be, by the deposit of moneys, or Defeasance Obligations and moneys, if any, the interest to come due on such Variable Rate Bonds on or prior to the maturity date or redemption date thereof, as the case may be, shall be calculated at the Variable Rate Ceiling if in effect with respect to such Bonds.

Tender Bonds shall be deemed to have been paid only if, in addition to satisfying the requirements described above, there shall have been deposited with the Trustee moneys in an amount which shall be sufficient to pay when due the maximum amount of principal of and premium, if any, and interest on such Bonds which could become payable to the registered owners of such Bonds upon the exercise of any options provided to the registered owners of such Bonds; provided, however, that if, at the time a deposit is made with the Trustee pursuant to the provisions above, the options originally exercisable by the registered owners of Tender Bonds are no longer exercisable, such Bonds shall not be considered Tender Bonds.

## **Unclaimed Funds**

Any moneys held by the Fiduciary in trust for the payment and discharge of any Bonds which remain unclaimed for three (3) years after the date when such bonds have become due and payable, either at their stated maturity dates or by call for earlier redemption, if such moneys were held by the Fiduciary at such date, or for three (3) years after the date of deposit of such moneys if deposited with the Fiduciary after the said date when such Bonds become due and payable, shall be paid to the Commonwealth as its absolute property and free from trust, and the Fiduciary shall thereupon be released and discharged with respect thereto and the Bondholders shall look only to the Commonwealth for the payment of such Bonds.

## **No Recourse on the Bonds**

No recourse shall be had for the payment of the principal or Redemption Price of or the interest on the Bonds or for any claim based thereon or on the Trust Agreement against any official, agent, representative or

employee of the Commonwealth or any person executing the Bonds. No official, agent, representative or employee of the Commonwealth shall be held personally liable to any purchaser or holder of any Bond under or upon such Bond, or under or upon the Trust Agreement or any Supplemental Trust Agreement relating to Bonds, or, to the extent permitted by law, because of the sale or issuance or attempted sale or issuance of Bonds, or because of any act or omission in connection with the investment or management of the Pledged Funds, funds or moneys of the Commonwealth, or otherwise in connection with the management of its affairs, excepting solely for things wilfully done or omitted to be done with an intent to defraud.

T3/605563.1

PROPOSED FORM OF OPINION OF BOND COUNSEL

*Upon the delivery of the Bonds, Bond Counsel proposes to deliver to the Underwriters an opinion in substantially the following form:*

Mintz, Levin, Cohn, Ferris, Glovsky and Popeo, P.C.  
One Financial Center  
Boston, Massachusetts 02111

701 Pennsylvania Avenue, N.W.  
Washington, D.C. 20004  
Telephone: 202/434-7300  
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Telephone: 617/542-6000  
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[To the Underwriters]

Re: The Commonwealth of Massachusetts \$150,000,000 Special Obligation Revenue Bonds, 1996 Series A.

We have acted as bond counsel in connection with the issuance by The Commonwealth of Massachusetts (the "Commonwealth") of \$150,000,000 Special Obligation Revenue Bonds, 1996 Series A, dated March 1, 1996 (the "Bonds"). We have examined Section 20 of Chapter 29 of the Massachusetts General Laws, as amended (the "Act"), Chapter 33 of the Acts of 1991, as amended, and other applicable statutes. We have also examined an executed counterpart of the Trust Agreement dated as of June 1, 1994 (the "Trust Agreement") between the Commonwealth and Fleet Bank of Massachusetts, N. A., as trustee (the "Trustee"), as supplemented by a Supplemental Trust Agreement dated as of March 19, 1996 (the "Supplemental Trust Agreement" and, collectively with the Trust Agreement, the "Agreement"), and such certified proceedings and other papers as we have deemed necessary to render this opinion. Reference is made to the Trust Agreement dated as of June 1, 1992, as supplemented by a First Supplemental Trust Agreement dated June 10, 1992 and by a Second Supplemental Trust Agreement dated June 28, 1994 (as supplemented, the "1992 Agreement"), between the Commonwealth and Fleet Bank of Massachusetts, N. A., as trustee (the "1992 Trustee"). Capitalized terms not otherwise defined herein are used herein as defined in the Trust Agreement.

The Bonds are issued pursuant to the Trust Agreement. Bonds issued under the Trust Agreement, including the Bonds, are payable from and secured by a pledge of (i) all moneys received or to be received by the Commonwealth from that portion of the excise imposed on fuel (other than aviation fuel) by the provisions of Chapter 64A of the Massachusetts General Laws in effect as of the date hereof (the "Gasoline Tax") equal to four and eighty-six hundredths cents per gallon, (ii) all moneys received or to be received by the Trustee from the 1992 Trustee pursuant to the 1992 Agreement, (iii) immediately upon the discharge and release of the lien of the 1992 Agreement, all moneys received or to be received by the Commonwealth from that portion of the Gasoline Tax equal to two cents per gallon, together with any other amounts then constituting "Pledged Funds" within the meaning of the 1992 Agreement, and (iv) any additional portions of the Gasoline Tax or other funds which may be pledged by the Commonwealth in accordance with the provisions of the Trust Agreement (collectively, the "Pledged Funds").

As to questions of fact material to our opinion, we have relied upon the representations of the Commonwealth contained in the certified proceedings and other certifications of public officials furnished to us without undertaking to verify the same by independent investigation.

Based upon the foregoing, we are of opinion, under existing law, as follows:

1. The Commonwealth has the right and power under the Act to enter into the Trust Agreement and the Supplemental Trust Agreement, and each has been duly and lawfully executed on behalf of the Commonwealth by the Treasurer and Receiver-General of the Commonwealth, with the concurrence of the Secretary of the Executive Office for Administration and Finance of the Commonwealth and the Secretary of the Executive Office of Transportation and Construction of the Commonwealth.
2. The Trust Agreement and the Supplemental Trust Agreement have been duly authorized, executed and delivered by the Commonwealth, are in full force and effect and constitute valid and binding obligations of the Commonwealth enforceable upon the Commonwealth in accordance with the respective terms thereof. No other authorization for the Agreement is required.
3. Pursuant to the Act, the Trust Agreement creates the valid pledge which it purports to create of the Pledged Funds, rights, moneys, securities, credit facilities and funds held under the Trust Agreement, in the manner and to the extent provided in the Agreement, for the security of the Bonds on a parity with other bonds (if any) to be issued under the Trust Agreement, subject to no prior lien granted under the Act.
4. The Bonds have been duly authorized, executed and delivered by the Commonwealth and are valid and binding special obligations of the Commonwealth, enforceable in accordance with the terms thereof and the terms of the Agreement and are entitled to the benefits of the Act, as provided under the Trust Agreement, and the Agreement. The Bonds are not general obligations of the Commonwealth, and the full faith and credit of the Commonwealth are not pledged to the payment thereof. The Bonds are payable solely from the sources provided therefor in the Agreement.
5. (a) Interest on the Bonds is excluded from gross income for federal income tax purposes. This opinion is subject to the condition that the Commonwealth comply with all requirements of the Internal Revenue Code of 1986, as amended, that must be satisfied subsequent to the issuance of the Bonds in order that interest thereon be, or continue to be, excluded from gross income for federal income tax purposes. The Commonwealth has covenanted to comply with each such requirement. Failure to comply with certain of such requirements could cause the inclusion of interest on the Bonds in gross income for federal income tax purposes to be retroactive to the date of issuance of the Bonds.  
  
(b) While interest on the Bonds is not an item of tax preference for purposes of the alternative minimum tax imposed under federal tax law on individuals and corporations, interest on the Bonds will be included in the "adjusted current earnings" of corporate holders of the Bonds and therefore will be taken into account in computing the alternative minimum tax imposed on certain corporations.  
  
(c) We express no opinion regarding other federal tax consequences arising with respect to the Bonds.
6. The Bonds, their transfer and the income therefrom, including profit on the sale thereof, shall at all times be exempt from taxation by and within the Commonwealth, although the Bonds and the interest thereon may be included in the measure of estate and inheritance taxes and of certain corporate excise and franchise taxes.
7. For federal and Massachusetts tax purposes, interest includes original issue discount, which with respect to a Bond is equal to the excess, if any, of the stated redemption price at maturity of such Bond over the initial offering price thereof to the public, excluding underwriters and other intermediaries, at which price a substantial amount of all Bonds with the same maturity was sold. Original issue discount accrues *actuarially* over the term of a Bond.

It is to be understood that the rights of the holders of the Bonds and the enforceability of the Bonds and the Agreement may be subject to bankruptcy, insolvency, reorganization, moratorium and other similar laws affecting creditors' rights heretofore or hereafter enacted, to the extent constitutionally applicable, and that the enforcement thereof may also be subject to the exercise of judicial discretion in appropriate cases.

Very truly yours,

Mintz, Levin, Cohn, Ferris, Glovsky and Popeo, P.C.

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Municipal Bond Insurance Policy

AMBAC Indemnity Corporation  
 c/o CT Corporation Systems  
 44 East Mifflin St., Madison, Wisconsin 53703  
 Administrative Office:  
 One State Street Plaza, New York, NY 10004  
 Telephone: (212) 668-0340

Issuer:

Policy Number:

Bonds:

Premium:

**AMBAC Indemnity Corporation (AMBAC) A Wisconsin Stock Insurance Company**

in consideration of the payment of the premium and subject to the terms of this Policy, hereby agrees to pay to the United States Trust Company of New York, as trustee, or its successor (the "Insurance Trustee"), for the benefit of Bondholders that portion of the principal and interest on the above-described debt obligations (the "Bonds") which shall become Due for Payment but shall be unpaid by reason of Nonpayment by the Issuer.

AMBAC will make such payments to the Insurance Trustee within one (1) business day following notification to AMBAC of Nonpayment. Upon a Bondholder's presentation and surrender to the Insurance Trustee of such unpaid Bonds or appurtenant coupons, uncanceled and in bearer form and free of any adverse claim, the Insurance Trustee will disburse to the Bondholder the face amount of principal and interest which is then Due for Payment but is unpaid. Upon such disbursement, AMBAC shall become the owner of the surrendered Bonds and coupons and shall be fully subrogated to all of the Bondholders' rights to payment.

In cases where the Bonds are issuable only in a form whereby principal is payable to registered Bondholders or their assigns, the Insurance Trustee shall disburse principal to a Bondholder as aforesaid only upon presentation and surrender to the Insurance Trustee of the unpaid Bond, uncanceled and free of any adverse claim, together with an instrument of assignment, in form satisfactory to the Insurance Trustee, duly executed by the Bondholder or such Bondholder's duly authorized representative, so as to permit ownership of such Bond to be registered in the name of AMBAC or its nominee. In cases where the Bonds are issuable only in a form whereby interest is payable to registered Bondholders or their assigns, the Insurance Trustee shall disburse interest to a Bondholder as aforesaid only upon presentation to the Insurance Trustee of proof that the claimant is the person entitled to the payment of interest on the Bond and delivery to the Insurance Trustee of an instrument of assignment in form satisfactory to the Insurance Trustee, duly executed by the claimant Bondholder or such Bondholder's duly authorized representative, transferring to AMBAC all rights under such Bond to receive the interest in respect of which the insurance disbursement was made. AMBAC shall be subrogated to all the Bondholders' rights to payment on registered Bonds to the extent of the insurance disbursements so made.

In the event the trustee or paying agent for the Bonds has notice that any payment of principal of or interest on a Bond which has become Due for Payment and which is made to a Bondholder by or on behalf of the Issuer of the Bonds has been deemed a preferential transfer and therefore recovered from its registered owner pursuant to the United States Bankruptcy Code in accordance with a final, nonappealable order of a court of competent jurisdiction, such registered owner will be entitled to payment from AMBAC to the extent of such recovery if sufficient funds are not otherwise available.

As used herein, the term "Bondholder" means any person other than the Issuer who, at the time of Nonpayment, is the owner of a Bond or of a coupon appertaining to a Bond. As used herein, "Due for Payment", when referring to the principal of Bonds, is when the stated maturity date or a mandatory redemption date for the application of a required sinking fund installment has been reached and does not refer to any earlier date on which payment is due by reason of call for redemption (other than by application of required sinking fund installments), acceleration or other advancement of maturity; and, when referring to interest on the Bonds, is when the stated date for payment of interest has been reached. As used herein, "Nonpayment" means the failure of the Issuer to have provided sufficient funds to the paying agent for payment in full of all principal of and interest on the Bonds which are Due for Payment.

This Policy is noncancelable. The premium on this Policy is not refundable for any reason, including payment of the Bonds prior to maturity. This Policy does not insure against loss of any prepayment or other acceleration payment which at any time may become due in respect of any Bond, other than at the sole option of AMBAC, nor against any risk other than Nonpayment.

In witness whereof, AMBAC has caused this Policy to be affixed with a facsimile of its corporate seal and to be signed by its duly authorized officers in facsimile to become effective as its original seal and signatures and binding upon AMBAC by virtue of the counter-signature of its duly authorized representative.

*[Signature]*  
 President



*[Signature]*  
 Secretary

Effective Date:

UNITED STATES TRUST COMPANY OF NEW YORK acknowledges that it has agreed to perform the duties of Insurance Trustee under this Policy.

Authorized Representative

*[Signature]*  
 Authorized Officer

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Commonwealth of Massachusetts  
Special Obligation Revenue Bonds  
1996 Series A

Continuing Disclosure Undertaking

[to be included in bond form]

On behalf of the Commonwealth, the Treasurer and Receiver-General of the Commonwealth hereby undertakes for the benefit of the owners of the Bonds to provide to each nationally recognized municipal securities information repository (each, a "NRMSIR") within the meaning of Rule 15c2-12 of the Securities and Exchange Commission (the "Rule") and to the state information depository for the Commonwealth, if any (the "SID"), within the meaning of the Rule, no later than 270 days after the end of each fiscal year of the Commonwealth, commencing with the fiscal year ending June 30, 1996, (i) the annual financial information described below relating to such fiscal year, together with audited financial statements of the Commonwealth for such fiscal year if audited financial statements are then available, provided, however, that if audited financial statements of the Commonwealth are not then available, such audited financial statements shall be delivered to each NRMSIR and the SID when they become available (but in no event later than 350 days after the end of such fiscal year) or (ii) notice of the Commonwealth's failure, if any, to provide any such information. The annual financial information to be provided as aforesaid shall include financial information and operating data, in each case updated through the last day of such fiscal year unless otherwise noted, relating to the following information contained in the Commonwealth's Official Statement dated March 19, 1996 (the "Official Statement") relating to the Commonwealth's Special Obligation Revenue Bonds, 1996 Series A, and in each case substantially in the same level of detail as is found in the referenced section of the Official Statement:

Financial Information and Operating Data Category	Reference to Official Statement for Level of Detail
1. Summary presentation of actual gasoline sales on a ten-year comparative basis, concluding with the prior fiscal year.	"COMMONWEALTH GASOLINE TAX - Historical Information Regarding Gasoline Tax"
2. Summary presentation of actual Gasoline Tax receipts on a ten-year comparative basis, concluding with the prior fiscal year.	"COMMONWEALTH GASOLINE TAX - Historical Information Regarding Gasoline Tax"
3. Summary presentation of actual monthly Gasoline Tax receipts for the two most recently completed fiscal years.	"COMMONWEALTH GASOLINE TAX - Historical Information Regarding Gasoline Tax"
4. Aggregate annual fiscal year debt service requirements for special obligation bonds issued under the 1994 trust agreement, beginning with the current fiscal year.	"DEBT SERVICE REQUIREMENTS - Total Debt Service"
5. Summary presentation of actual Highway Fund revenues on a ten-year comparative basis, concluding with the prior fiscal year.	"FINANCING THE COMMONWEALTH HIGHWAY SYSTEM - Legal Framework for Financing the Highway System"

Any or all of the items listed above may be included by reference to other documents, including official statements pertaining to debt issued by the Commonwealth, which have been submitted to each NRMSIR. If the document incorporated by reference is a Final Official Statement within the meaning of the Rule, it will also be available from the Municipal Securities Rulemaking Board ("MSRB"). The Commonwealth's annual financial statements for each fiscal year shall consist of (i) combined financial statements prepared in accordance with a basis of accounting that demonstrates compliance with the Massachusetts General Laws and other applicable state finance laws, if any, in effect from time to time and (ii) general purpose financial statements prepared in accordance with generally accepted accounting principles in effect from time to time. Such financial statements shall be audited by a firm of certified public accountants appointed by the Commonwealth.

On behalf of the Commonwealth, the Treasurer and Receiver-General of the Commonwealth hereby further undertakes for the benefit of the owners of the Bonds to provide in a timely manner to the MSRB and to the SID notice of any of the following events with respect to the Bonds (numbered in accordance with the provisions of the Rule), if material:

- (i) principal and interest payment delinquencies;
- (ii) non-payment related defaults;
- (iii) unscheduled draws on debt service reserves reflecting financial difficulties;
- (iv) unscheduled draws on credit enhancements reflecting financial difficulties;
- (v) substitution of credit or liquidity providers, or their failure to perform;
- (vi) adverse tax opinions or events affecting the tax-exempt status of the Bonds;
- (vii) modifications to rights of Bondholders;
- (viii) giving of notice of optional redemption of Bonds;
- (ix) defeasances;
- (x) release, substitution or sale of property securing repayment of the Bonds; and
- (xi) rating changes.

Nothing herein shall preclude the Commonwealth from disseminating any information in addition to that required hereunder. If the Commonwealth disseminates any such additional information, nothing herein shall obligate the Commonwealth to update such information or include it in any future materials disseminated.

To the extent permitted by law, the foregoing provisions of this Bond related to the above-described undertakings to provide information shall be enforceable against the Commonwealth in accordance with the terms thereof by any owner of a Bond, including any beneficial owner acting as a third-party beneficiary (upon proof of its status as a beneficial owner reasonably satisfactory to the Treasurer and Receiver-General). To the extent permitted by law, any such owner shall have the right, for the equal benefit and protection of all owners of Bonds, by mandamus or other suit or proceeding at law or in equity, to enforce its rights against the Commonwealth and to compel the Commonwealth and any of its officers, agents or employees to perform and carry out their duties under the foregoing provisions as aforesaid. The failure to comply with the above-described undertakings shall not constitute an Event of Default under the Trust Agreement, and the sole remedy in connection with such undertakings shall be limited to an action to compel specific performance of the obligations of the Commonwealth in connection with such undertakings and shall not include any rights to monetary damages. The Commonwealth's obligations

in respect of such undertakings shall terminate if no Bonds remain outstanding (without regard to an economic defeasance) or if the provisions of the Rule concerning continuing disclosure are no longer effective, whichever occurs first. The provisions of this Bond relating to such undertakings may be amended by the Treasurer and Receiver-General of the Commonwealth, without the consent of, or notice to, any owners of the Bonds, (a) to comply with or conform to the provisions of the Rule or any amendments thereto or authoritative interpretations thereof by the Securities and Exchange Commission or its staff (whether required or optional), (b) to add a dissemination agent for the information required to be provided by such undertakings and to make any necessary or desirable provisions with respect thereto, (c) to add to the covenants of the Commonwealth for the benefit of the owners of Bonds, (d) to modify the contents, presentation and format of the annual financial information from time to time as a result of a change in circumstances that arises from a change in legal requirements, or (e) to otherwise modify the undertakings in a manner consistent with the provisions of state legislation establishing the SID or otherwise responding to the requirements of the Rule concerning continuing disclosure; provided, however, that in the case of any amendment pursuant to clause (d) or (e), (i) the undertaking, as amended, would have complied with the requirements of the Rule at the time of the offering of the Bonds, after taking into account any amendments or authoritative interpretations of the Rule, as well as any change in circumstances, and (ii) the amendment does not materially impair the interests of the owners of the Bonds, as determined either by a party unaffiliated with the Commonwealth (such as Commonwealth disclosure counsel or Commonwealth bond counsel) or by the vote or consent of owners of a majority in outstanding principal amount of the Bonds affected thereby at or prior to the time of such amendment.

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1-2. NAME OF ISSUER AND DESCRIPTION OF ISSUE : THE COMMONWEALTH OF MASSACHUSETTS  
SPECIAL OBLIGATION REVENUE BONDS  
1996 SERIES A

3. STATE : MA

4. DATED DATE : 03/01/1996

5. DATE OF FINAL MATURITY OF OFFERING : 06/01/2016 6. DATE OF SALE : 03/19/1996

7. PAR VALUE OF OFFERING : \$ 150,000,000

8. PAR AMOUNT UNDERWRITTEN (if there is no underwriting syndicate): \$

9. AMENDED OR STICKERED OS? NO NUMBER OF SERIES IN OS :  
(Enter Y or N) (Fill out one form for each series)

10. CHECK ALL THAT APPLY:

- a.  At the option of the holder thereof, all securities in this offering may be tendered to the issuer of such securities or its designated agent for redemption or purchase at par value of more at least as frequently as every nine months until maturity, earlier redemption, or purchase by the issuer or its designated agent.
- b.  At the option of the holder thereof, all securities in this offering may be tendered to the issuer of such securities or its designated agent for redemption or purchase at par value of more at least as frequently as every two years until maturity, earlier redemption, or purchase by the issuer or its designated agent.
- c.  This offering is exempt from SEC rule 15c2-12 under section (c)(1) of that rule. Section (c)(1) of SEC rule 15c2-12 states that an offering is exempt from the requirements of the rule if the securities offered have authorized denominations of \$100,000 or more and or sold to no more than 35 persons each of whom the participating underwriter believes: (1) has the knowledge and expertise necessary to evaluate the merits and risks of the investment; and (2) is not purchasing for more than one account, with a view toward distributing the securities.

11. MANAGING UNDERWRITER : Merrill Lynch & Co.

16. CUSIP NUMBERS (and corresponding maturity dates)

06/01/1997	576004BP9	06/01/1998	576004BQ7
06/01/1999	576004BR5	06/01/2000	576004BS3
06/01/2001	576004BT1	06/01/2002	576004BU8
06/01/2003	576004BV6	06/01/2004	576004BW4
06/01/2005	576004BX2	06/01/2006	576004BY0
06/01/2007	576004BZ7	06/01/2008	576004CA1
06/01/2009	576004CB9	06/01/2010	576004CC7
06/01/2011	576004CD5	06/01/2012	576004CE3
06/01/2013	576004CF0	06/01/2014	576004CG8
06/01/2015	576004CH6	06/01/2016	576004CJ2

17. MSRB rule G-34 requires that CUSIP numbers be assigned to each new issue of municipal securities unless the issue is ineligible for CUSIP number assignment under the eligibility criteria of the CUSIP Service Bureau.

Check here if the issue is ineligible for CUSIP number assignment.

State the reason why the issue is ineligible for CUSIP number assignment:

18. Submit two copies of the completed form along with the official statement to: Municipal Securities Rulemaking Board, 1640 King Street, Suite 300, Alexandria, VA 22314. Incomplete submissions will be returned for correction.

