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PIONEER MUNICIPAL HIGH INCOME TRUST
Form N-CSR
June 27, 2005

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UNITED STATES
SECURITIES AND EXCHANGE COMMISSION
Washington, D.C. 20549

FORM N-CSR

CERTIFIED SHAREHOLDER REPORT OF REGISTERED
MANAGEMENT INVESTMENT COMPANIES

Investment Company Act file number 811-21321

Pioneer Municipal High Income Trust
(Exact name of registrant as specified in charter)

60 State Street, Boston, MA 02109
(Address of principal executive offices) (ZIP code)

Dorothy E. Bourassa, Pioneer Investment Management, Inc.,
60 State Street, Boston, MA 02109
(Name and address of agent for service)

Registrant's telephone number, including area code: (617) 742-7825

Date of fiscal year end: April 30

Date of reporting period: May 1, 2004 through April 30, 2005

Form N-CSR is to be used by management investment companies to file reports with the Commission not later than 10 days after the transmission to stockholders of any report that is required to be transmitted to stockholders under Rule 30e-1 under the Investment Company Act of 1940 (17 CFR 270.30e-1). The Commission may use the information provided on Form N-CSR in its regulatory, disclosure review, inspection, and policymaking roles.

A registrant is required to disclose the information specified by Form N-CSR, and the Commission will make this information public. A registrant is not required to respond to the collection of information contained in Form N-CSR unless the Form displays a currently valid Office of Management and Budget ("OMB") control number. Please direct comments concerning the accuracy of the information collection burden estimate and any suggestions for reducing the burden to Secretary, Securities and Exchange Commission, 450 Fifth Street, NW, Washington, DC 20549-0609. The OMB has reviewed this collection of information under the clearance requirements of 44 U.S.C. ss. 3507.

ITEM 1. REPORTS TO SHAREOWNERS.

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PIONEER

MUNICIPAL
HIGH
INCOME
TRUST

Annual
Report

4/30/05

[LOGO] PIONEER
Investments (R)

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Pioneer Municipal High Income Trust

LETTER TO SHAREOWNERS 4/30/05

Dear Shareowner,

U.S. stocks moved higher early in 2005, with the Standard & Poor's 500 Stock Index and the Dow Jones Industrial Average advancing to three-year highs in early March. But from then on, soaring prices for heating oil and gasoline, plus the steady ratcheting up of interest rates by the Federal Reserve Board overwhelmed sentiment and caused stocks to retrace their gains. By the end of April, the Dow Industrials, the S&P 500 and the tech-heavy NASDAQ composite were in negative territory for the year.

With investors less welcoming of risk and the economy giving mixed signals, value stocks were more resilient than growth stocks. In addition, large-capitalization stocks held up better than small- and mid-sized issues that might be more vulnerable in an economic "soft patch," in the phrase of Federal Reserve Board Chairman Alan Greenspan.

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Determined to prevent damaging inflation, the Fed has repeatedly raised short-term interest rates. As a result, bond returns were modestly negative in most sectors. Fixed-income investors also became more risk-averse; high-yield and other corporate sectors retrenched after a run of stellar performance while Treasuries and mortgage-backed securities showed small declines, with long-term issues showing positive. Municipal revenue bonds trended higher even against a backdrop of heavy new issuance by states and localities.

Higher U.S. interest rates enhanced the dollar's appeal and brought at least a pause in its long, sharp drop. But the stronger dollar muted returns for U.S. investors in overseas markets. Globally, economies rich in metals and other industrial commodities continued to thrive on heavy demand from China and elsewhere. Meanwhile, growth in Japan may have stalled, and Europe's expansion moved ahead slowly.

We believe that the U.S. economy and corporate earnings will continue to grow at a moderate pace. Oil prices have receded from their record highs, but high energy costs and rising interest rates may be in the headlines for a while. Looking beyond present concerns, Pioneer's global investment experts continue to find stocks and bonds with attractive long-term potential for our domestic and international funds.

Expanding your opportunities

This period was like all others; different classes of investments delivered different returns. That's why allocating your portfolio across several investment categories is one way to seek wider opportunities. Pioneer's disciplined approach and growing range of products are designed to help you achieve this important objective. For thoughtful guidance on how to align your portfolio with your goals, contact your financial professional.

Please consider a fund's investment objective, risks, charges and expenses carefully before investing. The prospectus contains this and other information about each fund and should be read carefully before you invest or send money. To obtain a prospectus and for other information on any Pioneer fund, contact your financial advisor, call 1-800-225-6292 or visit our web site at www.pioneerfunds.com.

Respectfully,

/s/ Osbert M. Hood

Osbert M. Hood, President
Pioneer Investment Management, Inc.

Any information in this shareholder report regarding market or economic trends or the factors influencing the Trust's historical or future performance are statements of the opinion of Trust management as of the date of this report. These statements should not be relied upon for any other purposes. Past performance is no guarantee of future results, and there is no guarantee that market forecasts discussed will be realized.

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Pioneer Municipal High Income Trust

PORTFOLIO SUMMARY 4/30/05

Portfolio Diversification

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(As a percentage of total investment portfolio)

[The following table was depicted as a pie chart in the printed material.]

| | |
|---------------------------|-------|
| Health Revenue | 23.4% |
| Airport Revenue | 18.1% |
| Insured | 13.3% |
| Tobacco Revenue | 10.4% |
| Education Revenue | 7.5% |
| Pollution Control Revenue | 6.8% |
| Development Revenue | 6.2% |
| Power Revenue | 4.4% |
| General Obligation | 3.0% |
| Transportation Revenue | 1.6% |
| Other | 1.5% |
| Facilities Revenue | 1.4% |
| Gaming Revenue | 1.2% |
| Housing Revenue | 1.0% |
| Utilities Revenue | 0.2% |

Portfolio Maturity

(Effective life as a percentage of long-term holdings)

[The following table was depicted as a pie chart in the printed material.]

| | |
|------------|-------|
| 0-1 Years | 6.5% |
| 1-3 years | 4.2% |
| 3-6 years | 33.8% |
| 6-8 years | 34.1% |
| 8-10 years | 6.4% |
| 10+ years | 15.0% |

Quality Distribution

(As a percentage of holdings; based on S&P ratings.)

[The following table was depicted as a pie chart in the printed material.]

| | |
|-----------------|-------|
| AAA | 18.1% |
| AA | 4.7% |
| A | 3.8% |
| BBB | 22.8% |
| BB & Lower | 49.6% |
| Cash Equivalent | 1.0% |

The portfolio is actively managed and current holdings may be different.

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Pioneer Municipal High Income Trust

 PERFORMANCE UPDATE 4/30/05

Share Prices and Distributions

| | | |
|------------------|---------|---------|
| Market Value | | |
| per Common Share | 4/30/05 | 4/30/04 |
| | \$14.33 | \$13.70 |

| | | |
|------------------|---------|---------|
| Net Asset Value | | |
| per Common Share | 4/30/05 | 4/30/04 |
| | \$15.62 | \$14.76 |

| | | | |
|--------------------|-----------|---------------|---------------|
| Distributions | | | |
| per Common Share | Income | Short-Term | Long-Term |
| (5/1/04 - 4/30/05) | Dividends | Capital Gains | Capital Gains |
| | \$1.07 | \$0.0509 | \$0.0400 |

10 Largest Holdings

(As a percentage of long-term holdings)*

| | | |
|-----|---|-------|
| 1. | Greenville County School District, 5.5%, 12/1/28 | 3.74% |
| 2. | Allegheny County Hospital Development Authority Revenue, 9.25%, 11/15/30 | 3.34 |
| 3. | Minneapolis/St. Paul Metropolitan Airports, 7.0%, 4/1/25 | 2.78 |
| 4. | Tobacco Settlement Financing Corp., 6.75%, 6/1/39 | 2.62 |
| 5. | New Jersey Economic Development Authority Revenue, 6.25%, 9/15/29 | 2.49 |
| 6. | Gila County Industrial Development Authority, 5.55%, 1/1/27 | 2.47 |
| 7. | Birmingham Alabama General Obligation, 5.0%, 12/1/32 | 2.40 |
| 8. | Metropolitan Pier & Exposition Authority Dedicated State Tax Revenue, 0.0%, 6/15/22 | 2.36 |
| 9. | Oklahoma Development Finance Authority Revenue, 5.625%, 8/15/29 | 2.03 |
| 10. | Johnson City Health & Educational Facilities Board Hospital Revenue, 7.5%, 7/1/33 | 1.92 |

*This list excludes temporary cash and derivative instruments. The portfolio is actively managed, and current holdings may be different.

Pioneer Municipal High Income Trust

 PERFORMANCE UPDATE 4/30/05

Investment Returns

 The mountain chart on the right shows the change in value of a \$10,000 investment made in common shares of Pioneer Municipal High Income Trust, compared to that of the Lehman Brothers Municipal Bond Index and Lehman Brothers Non-Investment Grade Municipal Bond Index.

 Cumulative Annual Total Returns
 (As of April 30, 2005)

| Period | Net Asset Value | Market Price |
|----------------------------|-----------------|--------------|
| Life-of-Trust (7/21/03) | 24.00% | 8.67% |
| 1 Year | 14.67 | 13.34 |

 Value of \$10,000 Investment+

[The following table was depicted as a mountain chart in the printed material.]

| | Pioneer Municipal High Income Trust | Lehman Brothers Municipal Bond Index | Lehman Brothers Non-Investment Grade Municipal Bond Index |
|------|--|---|--|
| | ----- | ----- | ----- |
| 7/03 | \$10,000 | \$10,000 | \$10,000 |
| | 11,023 | 10,441 | 11,014 |
| 4/05 | 10,868 | 11,153 | 12,399 |

Call 1-800-225-6292 or visit www.pioneerfunds.com for the most recent month-end performance results. Current performance may be lower or higher than the performance data quoted.

Performance data shown represents past performance. Past performance is no guarantee of future results. Investment return and market price will fluctuate, and your shares may trade below net asset value ("NAV"), due to such factors as interest rate changes, and the perceived credit quality of borrowers.

Total investment return does not reflect broker sales charges or commissions. All performance is for common shares of the Trust.

Closed-end funds, unlike open-end funds, are not continuously offered. There is a one-time public offering and once issued, shares of closed-end funds are sold in the open market through a stock exchange and frequently trade at prices lower

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than their NAV. NAV is total assets less total liabilities, which includes preferred shares, divided by the number of common shares outstanding.

When NAV is lower than market price, dividends are assumed to be reinvested at the greater of NAV or 95% of the market price. When NAV is higher, dividends are assumed to be reinvested at market price.

The performance table and graph do not reflect the deduction of fees and taxes that a shareowner would pay on Trust distributions or the redemption of Trust shares.

Index comparison begins July 31, 2003. The Lehman Brothers Municipal Bond Index is a broad measure of the municipal bond market. Lehman Brothers Non-Investment Grade Municipal Bond Index totals over \$26 billion in market value and maintains over 1300 securities. Municipal bonds in this index have the following requirements: maturities of one year or greater, sub investment grade (below Baa or non-rated), fixed coupon rate, dated date greater than 12-31-90, deal size over \$20 million, maturity size of at least \$3 trillion. Index returns are calculated monthly, assume reinvestment of dividends and, unlike Trust returns, do not reflect any fees, expenses or sales charges. You cannot invest directly in an Index.

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Pioneer Municipal High Income Trust

PORTFOLIO MANAGEMENT DISCUSSION 4/30/05

Over the 12-month period ended April 30, 2005, shareowners in Pioneer Municipal High Income Trust participated in the solid performance of municipal bonds. In particular, shareowners were rewarded with a relatively high level of tax-free income. In the following interview, David Eurkus, a member of the management team for the Trust, reviews the Trust's investment process, strategy and outlook.

Q: How did the Trust perform during the 12-month period ended April 30, 2005?

A: For the period, Pioneer Municipal High Income Trust produced a total return of 14.67% at net asset value and 13.34% at market price. As of April 30, 2005, the Trust was selling at a discount to market price to net asset value of 8.3%. The Lehman Brothers Municipal Bond Index, which tracks the performance only of investment-grade bonds, returned 6.81%. The Lehman Brothers Non-Investment Grade Municipal Bond Index returned 12.58% for the same period. At the end of the period, the Trust held 109 issues in various states and the District of Columbia. On April 30, 2005, the Trust's 30-day SEC yield was 7.73%.

Call 1-800-225-6292 or visit www.pioneerfunds.com for the most recent month-end performance results. Current performance may be lower or higher than the performance data quoted.

The performance data quoted represents past performance, which is no guarantee of future results. Investment return and principal value will fluctuate, and shares, when redeemed, may be worth more or less than their original cost.

Q: What was the investment environment like during the 12-month period?

A: Despite rising short-term interest rates and higher oil prices, economic growth continued to improve, although at a more moderate pace at the end of

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the fiscal year than at the beginning. In June 2004, the Federal Reserve began to reverse its accommodative monetary policy by raising the Federal funds rate, the overnight lending rate for banks that influences other short-term rates. The Fed raised rates seven times between June 2004 and April 30, 2005, each time by a quarter percentage point. By the end of April 2005, the Federal funds rate was 2.75%, up sharply from the 1.00% of 12 months ago. The Fed's actions caused the yield curve to flatten, which means that yields on securities with short-term maturities rose and prices declined; however, yields on

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Pioneer Municipal High Income Trust

PORTFOLIO MANAGEMENT DISCUSSION 4/30/05

(continued)

securities with long-term maturities remained relatively stable or declined, which boosted prices. (The yield curve shows the relationship between bond yields and maturity lengths.)

Q: What strategies contributed to the Trust's outperformance?

A: Sector allocation, the mix of investment-grade and high-yield bonds and duration provided the biggest benefit to performance. In terms of sector allocation, the Trust was diversified among securities in a variety of areas that are fundamental to the growth of the U.S. economy. The areas primarily included healthcare, education, public power, energy and transportation. As the economy continued to expand, those segments of the economy also improved.

Approximately 50% of the portfolio's net assets were invested in investment-grade securities, those rated BBB or better. About 30% of net assets were invested in below investment-grade issues, those rated BB and lower; and about 20% of net assets were in non-rated securities. On April 30, 2005, the average quality of the portfolio was BBB+.

We use a leveraging strategy as a way to generate additional income. Early in the fiscal year, historically low interest rates enabled the Trust to borrow funds at low rates and invest those funds in high-yield bonds. We sought bonds that, in our opinion, were undervalued and whose prices were likely to go up in an improving economic environment. The Trust not only benefited from the income that higher-yielding bonds produced, but it was also helped by the price appreciation that those bonds provided as they increased in value. The Trust's relatively long duration of 8.16 years was also instrumental in boosting the value of high-yield bonds, because as yields on such bonds declined their prices rose. (Measured in years, duration measures a bond's price sensitivity to interest-rate changes.)

Q: Were there disappointments?

A: There were no big disappointments. However, rapidly rising oil prices caused some erosion in the performance of the air transportation sector, as the cost of jet fuel substantially increased the airlines' operating costs. News reports about the potential bankruptcies of some high profile airlines also had a negative influence on the transportation area of the market. The volatility in the sector, however, did not materially affect the Trust's performance.

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Pioneer Municipal High Income Trust

Q: What is your outlook?

A: We believe economic growth will continue, but at a more moderate pace than in the past. While there may be some inflationary pressure, we do not expect it to be significant. The Federal Reserve has already indicated that it will continue raising rates at a measured pace. It is our opinion that this type of backdrop will be supportive for the bonds in the Trust. We expect to keep the Trust well diversified in a combination of below investment-grade and investment-grade bonds in a variety of economic sectors.

Investments in high yield or lower-rated securities are subject to greater-than-average risk. When interest rates rise, the prices of fixed income securities in the Trust will generally fall. Conversely, when interest rates fall the prices of fixed income securities in the Trust will generally rise. Investments in the Trust are subject to possible loss due to the financial failure of underlying securities and their inability to meet their debt obligations. These risks may increase share price volatility.

Any information in this shareowner report regarding market or economic trends or the factors influencing the Trust's historical or future performance are statements of the opinion of Trust management as of the date of this report. These statements should not be relied upon for any other purposes. Past performance is no guarantee of future results, and there is no guarantee that market forecasts discussed will be realized.

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Pioneer Municipal High Income Trust

SCHEDULE OF INVESTMENTS 4/30/05

| Principal Amount | S&P/Moody's Ratings (unaudited) | | Value |
|------------------|---------------------------------|--|-------------|
| | | TAX EXEMPT OBLIGATIONS - 125.6% of Net Assets | |
| | | Alabama - 3.5% | |
| \$10,000,000 | AAA/Aaa | Birmingham Alabama General Obligation, 5.0%, 12/1/32 | \$ 10,415,3 |
| 1,500,000 | BBB/NR | Camden Alabama Industrial Development Board, 6.125%, 12/1/24 | 1,658,1 |
| | | | ----- |
| | | | \$ 12,073,4 |
| | | | ----- |
| | | Arizona - 7.4% | |
| 5,000,000 | B+/Ba1 | Apache County Industrial Development Authority, 5.85%, 3/1/28 | \$ 5,000,7 |
| 5,000,000 | B+/Ba1 | Apache County Industrial Development Authority, 5.875%, 3/1/33 | 5,000,8 |
| 11,630,000 | BB-/Ca | Gila County Industrial Development Authority, 5.55%, 1/1/27 | 10,721,2 |
| 3,000,000 | NR/NR | Maricopa County Industrial Development Authority, 7.875%, 4/1/27 | 3,088,4 |

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| | | | |
|-----------|----------|---|-------------------------------|
| 1,000,000 | NR/Baa3 | Pima County Industrial Development Authority, 7.25%, 7/1/31 | 1,077,9 |
| 500,000 | NR/Baa2 | Yavapai County Industrial Development Authority, 6.0%, 8/1/33 | 528,9 |
| | | | ----- \$ 25,418,1 ----- |
| | | California - 12.2% | |
| 7,270,000 | A/A3 | California State General Obligation, 5.25%, 2/1/28 | \$ 7,708,9 |
| 5,000,000 | A/A3 | California State General Obligation, 5.25%, 4/1/34 | 5,306,8 |
| 5,150,000 | BBB/Baa3 | Golden State Tobacco Securitization Corp., 7.8%, 6/1/42 | 5,943,7 |
| 7,000,000 | BBB/Baa3 | Golden State Tobacco Securitization Corp., 7.875%, 6/1/42 | 8,112,9 |
| 4,000,000 | AAA/Aaa | Palm Desert Financing Authority Tax Allocation Revenue, 5.0%, 4/1/30 | 4,170,0 |
| 3,000,000 | AAA/Aaa | San Diego Unified School District, 5.0%, 7/1/25 | 3,255,3 |
| 2,500,000 | AAA/Aaa | University of California Revenue, 5.0%, 5/15/25 | 2,653,6 |
| 5,000,000 | B+/NR | Valley Health System Hospital Revenue, 6.5%, 5/15/25 | 5,006,6 |
| | | | ----- \$ 42,158,1 ----- |

The accompanying notes are an integral part of these financial statements.

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Pioneer Municipal High Income Trust

| Principal Amount | S&P/Moody's Ratings (unaudited) | | Value |
|---------------------|---------------------------------------|--|---------------------------------|
| | | Connecticut - 4.1% | |
| \$ 2,000,000 | NR/NR | Bridgeport Senior Living Facility Revenue, 7.25%, 4/1/35 | \$ 2,065,960 |
| 2,205,000 | BB/Ba1 | Connecticut State Health & Educational Facilities Authority Revenue, 5.375%, 7/1/17 | 2,132,191 |
| 4,800,000 | BB/Ba1 | Connecticut State Health & Educational Facilities Authority Revenue, 5.5%, 7/1/27 | 4,438,320 |
| 5,000,000 | BB+/NR | Mohegan Tribe Indians Gaming Authority, 6.25%, 1/1/31 | 5,412,200 |
| | | | ----- \$ 14,048,671 ----- |
| | | District of Columbia - 3.7% | |
| 5,000,000 | BBB/Baa3 | District of Columbia Tobacco Settlement Financing Corp., 6.5%, 5/15/33 | \$ 5,287,800 |
| 7,325,000 | BBB/Baa3 | District of Columbia Tobacco Settlement Financing Corp., 6.75%, 5/15/40 | 7,649,424 |
| | | | ----- \$ 12,937,224 ----- |
| | | Florida - 3.3% | |
| 2,000,000 | NR/NR | Beacon Lakes Community Development, | |

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| | | | |
|-----------|-----------|--|---------------|
| | | 6.9%, 5/1/35 | \$ 2,106,780 |
| 1,650,000 | BBB-/Baa2 | Polk County Industrial Development Revenue, 5.85%, 12/1/30 | 1,688,676 |
| 2,000,000 | NR/NR | Seminole Tribe Convention-A, 8.95%, 10/1/33 | 2,246,860 |
| 5,000,000 | NR/Baa2 | Tallahassee Health Facilities Revenue, 6.375%, 12/1/30 | 5,336,600 |
| | | | ----- |
| | | | \$ 11,378,916 |
| | | | ----- |
| 1,325,000 | NR/NR | Georgia - 1.1% Brunswick & Glynn County Development Authority Revenue, 7.25%, 1/1/35 | \$ 1,395,357 |
| 5,500,000 | C/Ca | Fulton County Development Authority Revenue, 6.95%, 11/1/12 | 2,310,055 |
| | | | ----- |
| | | | \$ 3,705,412 |
| | | | ----- |
| 5,000,000 | BB+/Ba3 | Idaho - 1.5% Power County Industrial Development Corp., 6.45%, 8/1/32 | \$ 5,139,200 |
| | | | ----- |

The accompanying notes are an integral part of these financial statements.

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Pioneer Municipal High Income Trust

SCHEDULE OF INVESTMENTS 4/30/05

(continued)

| Principal Amount | S&P/Moody's Ratings (unaudited) | | Va |
|---------------------|---------------------------------------|---|----------|
| \$ 1,000,000 | NR/NR | Illinois - 4.1% Centerpoint Intermodal Center, 8.0%, 6/15/23 (144A) | \$ 97 |
| 3,810,000 | C/C | Chicago Illinois O'Hare International Airport, 6.45%, 5/1/18 | 1,41 |
| 1,500,000 | NR/NR | Illinois Health Facilities Authority Revenue, 6.9%, 11/15/33 | 1,53 |
| 16,880,000 (a) | AAA/Aaa | Metropolitan Pier & Exposition Authority Dedicated State Tax Revenue, 0.0%, 6/15/22 | 10,23 |
| | | | ----- |
| | | | \$ 14,15 |
| | | | ----- |
| 1,000,000 | BBB+/Baa1 | Indiana - 1.6% Indiana State Development Finance Authority Revenue, 5.6%, 12/1/32 | \$ 1,03 |
| 4,300,000 | BBB-/Ba3 | Indiana State Development Finance Authority Revenue, 5.75%, 10/1/11 | 4,54 |
| | | | ----- |
| | | | \$ 5,57 |
| | | | ----- |
| 2,335,000 | AAA/Aaa | Massachusetts - 6.7% Massachusetts Health & Educational Facilities Authority Revenue, 5.0%, 7/15/35 | \$ 2,42 |

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| | | | |
|-----------|----------|--|----------|
| 7,050,000 | AAA/Aaa | Massachusetts Health & Educational Facilities Authority Revenue, 5.125%, 7/15/37 | 7,40 |
| 1,000,000 | AA/Aa3 | Massachusetts Health & Educational Facilities Authority Revenue, 5.25%, 10/15/33 | 1,06 |
| 3,500,000 | BBB/Baa3 | Massachusetts Health & Educational Facilities Authority Revenue, 6.25%, 7/1/22 | 3,75 |
| 5,000,000 | BBB-/NR | Massachusetts Health & Educational Facilities Authority Revenue, 6.75%, 10/1/33 | 5,46 |
| 75,000 | BB/NR | Massachusetts State Development Finance Agency, 5.25%, 10/1/18 | 6 |
| 3,055,000 | AA-/Aa3 | Massachusetts State Housing Finance Agency, 5.25%, 12/1/33 | 3,14 |
| | | | ----- |
| | | | \$ 23,32 |
| | | | ----- |

The accompanying notes are an integral part of these financial statements.
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Pioneer Municipal High Income Trust

| Principal Amount | S&P/Moody's Ratings (unaudited) | | Value |
|------------------|---------------------------------|--|--------------|
| | | Michigan - 4.6% | |
| \$ 1,500,000 | BBB-/NR | John Tolfree Health System Corp., 6.0%, 9/15/23 | \$ 1,457,32 |
| 2,000,000 | B/Ba3 | Michigan State Hospital Finance Authority Revenue, 5.5%, 8/15/23 | 1,839,68 |
| 4,010,000 | BBB-/Ba1 | Michigan State Hospital Finance Authority Revenue, 6.0%, 2/1/24 | 3,884,64 |
| 2,000,000+ | NR/NR | Michigan State Hospital Finance Authority Revenue, 6.4%, 1/1/15 | 2,086,22 |
| 7,690,000 | NR/NR | Wayne Charter County Michigan Special Airport Facilities Revenue, 6.75%, 12/1/15 | 6,727,21 |
| | | | ----- |
| | | | \$ 15,995,08 |
| | | | ----- |
| | | Minnesota - 4.4% | |
| 1,675,000 | BB/NR | Duluth Economic Development Authority Health Care Facilities Revenue, 7.25%, 6/15/32 | \$ 1,758,54 |
| 13,260,000 | NR/NR | Minneapolis/St. Paul Metropolitan Airports, 7.0%, 4/1/25 | 12,067,13 |
| 1,430,000 | BB+/Ba1 | St. Paul Housing & Redevelopment Authority, 6.625%, 11/1/17 | 1,437,46 |
| | | | ----- |
| | | | \$ 15,263,14 |
| | | | ----- |
| | | Mississippi - 0.9% | |
| 3,000,000 | BBB-/Ba1 | Mississippi Business Finance Corp. Pollution Control Revenue, 5.9%, 5/1/22 | \$ 3,041,46 |
| | | | ----- |
| | | Missouri - 1.2% | |
| 5,500,000 | NR/B3 | St. Louis Industrial Development Authority Revenue, 7.25%, 12/15/35 | \$ 4,152,66 |

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| | | | |
|-----------|-----------|---|-------------|
| 1,000,000 | BBB-/Baa2 | Nevada - 1.4% Clark County Industrial Development Revenue, 5.45%, 3/1/38 | \$ 1,063,12 |
| 1,850,000 | B-/NR | Clark County Industrial Development Revenue, 5.5%, 10/1/30 | 1,807,82 |
| 2,000,000 | NR/NR | Nevada State Department of Business & Industry, 7.25%, 1/1/23 | 2,095,10 |
| | | | \$ 4,966,04 |
| 3,000,000 | AAA/Aaa | New Hampshire - 0.9% Manchester School Facilities Revenue, 5.125%, 6/1/28 | \$ 3,172,92 |

The accompanying notes are an integral part of these financial statements.

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Pioneer Municipal High Income Trust

SCHEDULE OF INVESTMENTS 4/30/05

(continued)

| Principal Amount | S&P/Moody's Ratings (unaudited) | | Value |
|------------------|---------------------------------|---|--------------|
| \$ 2,000,000 | B/Caa2 | New Jersey - 8.7% New Jersey Economic Development Authority Revenue, 6.25%, 9/15/19 | \$ 1,696,34 |
| 13,350,000 | B/Caa2 | New Jersey Economic Development Authority Revenue, 6.25%, 9/15/29 | 10,799,34 |
| 1,000,000 | B/Caa2 | New Jersey Economic Development Authority Revenue, 6.4%, 9/15/23 | 847,20 |
| 6,150,000 | B/Caa2 | New Jersey Economic Development Authority Revenue, 7.0%, 11/15/30 | 5,394,65 |
| 10,750,000 | BBB/Baa3 | Tobacco Settlement Financing Corp., 6.75%, 6/1/39 | 11,372,74 |
| | | | \$ 30,110,29 |
| 3,700,000++ | NR/NR | New Mexico - 1.5% New Mexico Hospital Equipment Loan Council, 6.4%, 6/1/16 | \$ 3,900,35 |
| 1,350,000 | BBB-/NR | Santa Fe Educational Facilities Revenue, 5.75%, 10/1/28 | 1,367,56 |
| | | | \$ 5,267,91 |
| 2,000,000 | A/NR | New York - 5.8% New York City Industrial Development Agency, 5.375%, 6/1/23 | \$ 2,081,36 |
| 5,625,000 | CCC/Caa2 | New York City Industrial Development Agency, 6.9%, 8/1/24 | 4,092,18 |
| 5,000,000 | AAA/Aaa | New York City Trust Cultural Resources Revenue, 5.125%, 7/1/31 | 5,245,65 |
| 2,000,000 | NR/NR | Suffolk County Industrial Development Agency, | |

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| | | | | |
|-----------|---------|---------------|--|--------------|
| | | 7.25%, 1/1/30 | | 2,049,30 |
| 6,000,000 | AAA/Aaa | | Triborough Bridge & Tunnel Authority Revenue, 5.25%, 11/15/30 | 6,443,82 |
| | | | | \$ 19,912,31 |
| 4,600,000 | NR/NR | | North Carolina - 0.9% Charlotte North Carolina Special Facilities Revenue, 7.75%, 2/1/28 | \$ 3,220,00 |

The accompanying notes are an integral part of these financial statements.
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Pioneer Municipal High Income Trust

| Principal Amount | S&P/Moody's Ratings (unaudited) | | V |
|---------------------|---------------------------------------|---|---------|
| \$ 3,000,000+ | AAA/Aaa | Oklahoma - 6.2% Oklahoma Development Finance Authority Revenue, 5.625%, 8/15/19 | \$ 3,3 |
| 8,000,000+ | AAA/Aaa | Oklahoma Development Finance Authority Revenue, 5.625%, 8/15/29 | 8,8 |
| 4,100,000 | B-/Caa2 | Tulsa Municipal Airport Revenue, 5.65%, 12/1/35 | 3,8 |
| 1,225,000 | B-/Caa2 | Tulsa Municipal Airport Revenue, 6.25%, 6/1/20 | 1,0 |
| 4,350,000 | B-/Caa2 | Tulsa Municipal Airport Revenue, 7.35%, 12/1/11 | 4,2 |
| | | | \$ 21,2 |
| 1,000,000 | NR/NR | Oregon - 4.6% Klamath Falls Electric Revenue, 5.75%, 1/1/13 | \$ 1,0 |
| 7,000,000 | NR/NR | Klamath Falls Electric Revenue, 6.0%, 1/1/25 | 7,0 |
| 7,500,000 | NR/NR | Western Generation Agency Cogeneration Project Revenue, 7.125%, 1/1/21 | 7,6 |
| | | | \$ 15,7 |
| 1,550,000 | NR/Baa1 | Pennsylvania - 5.7% Allegheny County Hospital Development Authority Revenue, 5.125%, 5/1/25 | \$ 1,4 |
| 12,300,000 | B/B1 | Allegheny County Hospital Development Authority Revenue, 9.25%, 11/15/30 | 14,5 |
| 1,000,000 | BB-/NR | Columbia County Hospital Authority Health Care Revenue, 5.9%, 6/1/29 | 8 |
| 1,000,000 | BBB/Ba2 | Hazleton Health Services Authority Hospital Revenue, 5.625%, 7/1/17 | 9 |
| 1,280,000 | NR/B2 | Langhorne Manor Borough Higher Education & Health Authority Revenue, 7.35%, 7/1/22 | 1,2 |
| 500,000 | BBB+/NR | Pennsylvania Higher Educational Facilities Authority Revenue, 5.4%, 7/15/36 | 5 |
| | | | \$ 19,5 |

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| | | | |
|------------|-----------|---|---------|
| 4,250,000 | BBB/Baa2 | South Carolina - 7.9% Georgetown County Environmental Improvement Revenue, 5.95%, 3/15/14 | \$ 4,7 |
| 15,000,000 | AA-/Aa3 | Greenville County School District, 5.5%, 12/1/28 | 16,2 |
| 5,850,000 | BBB+/Baa1 | South Carolina Jobs Economic Development Authority Revenue, 6.375%, 8/1/34 | 6,4 |
| | | | ----- |
| | | | \$ 27,4 |
| | | | ----- |

The accompanying notes are an integral part of these financial statements.

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Pioneer Municipal High Income Trust

SCHEDULE OF INVESTMENTS 4/30/05

(continued)

| Principal Amount | S&P/Moody's Ratings (unaudited) | | Value |
|---------------------|---------------------------------------|---|--------------|
| | | Tennessee - 3.7% | |
| \$ 7,000,000 | BBB+/Baa2 | Johnson City Health & Educational Facilities Board Hospital Revenue, 7.5%, 7/1/33 | \$ 8,319,640 |
| 4,480,000 | NR/Baa3 | Knox County Health Educational & Housing Facilities Board Hospital Revenue, 6.375%, 4/15/22 | 4,615,789 |
| | | | ----- |
| | | | \$12,935,429 |
| | | | ----- |
| | | Texas - 9.1% | |
| 7,500,000 | CCC/Caa2 | Alliance Airport Authority Special Facilities Revenue, 7.5%, 12/1/29 | \$ 5,868,900 |
| 1,345,000 | NR/Baa3 | Bexar County Housing Finance Corp., 8.0%, 12/1/36 | 1,400,683 |
| 2,500,000 | BBB-/Ba2 | Brazos River Authority Revenue, 5.375%, 4/1/19 | 2,598,300 |
| 1,000,000 | CCC/Caa2 | Dallas-Fort Worth International Airport Revenue, 6.0%, 11/1/14 | 796,260 |
| 5,000,000 | CCC/Caa2 | Dallas-Fort Worth International Airport Revenue, 6.15%, 5/1/29 | 4,625,400 |
| 485,000 | C/Ca | Dallas-Fort Worth International Airport Revenue, 6.25%, 11/1/13 | 185,202 |
| 7,750,000 | C/Ca | Dallas-Fort Worth International Airport Revenue, 7.125%, 11/1/26 | 2,851,302 |
| 2,800,000 | C/Ca | Dallas-Fort Worth International Airport Revenue, 7.6%, 11/1/11 | 1,267,224 |
| 7,715,000 | C/Ca | Dallas-Fort Worth International Airport Revenue, 7.625%, 11/1/21 | 3,090,783 |
| 4,000,000 | NR/NR | Decatur Hospital Authority Revenue, 7.0%, 9/1/25 | 4,300,160 |
| 1,000,000 | BB/NR | Georgetown Health Facilities Development Corp., 6.25%, 8/15/29 | 1,021,230 |
| 3,750,000 | B-/Caa2 | Houston Airport System Special Facilities Revenue, 5.7%, 7/15/29 | 2,738,775 |
| 500,000 | BBB/Baa2 | Sabine River Authority Pollution Control Revenue, 6.15%, 8/1/22 | 548,970 |
| | | | ----- |
| | | | \$31,293,189 |

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| | | | |
|-----------|-------|---|--------------|
| 1,500,000 | A-/A3 | Vermont - 0.5% Vermont Educational & Health Buildings Financing Agency Revenue, 6.0%, 10/1/28 | \$ 1,692,315 |
|-----------|-------|---|--------------|

The accompanying notes are an integral part of these financial statements.
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Pioneer Municipal High Income Trust

| Principal Amount | S&P/Moody's Ratings (unaudited) | | Value |
|---------------------|---------------------------------------|--|------------------|
| | | Virginia - 1.4% | |
| \$ 1,000,000 | BBB/Baa3 | Peninsula Ports Authority, 6.0%, 4/1/33 | \$ 1,078,270 |
| 4,000,000 | BB/NR | Pocahontas Parkway Association of Virginia Toll Road Revenue, 5.5%, 8/15/28 | 3,912,800 |
| | | | \$ 4,991,070 |
| | | Washington - 5.5% | |
| 4,710,000 | AAA/Aaa | Spokane Public Facilities District Hotel/ Motel Tax & Sales, 5.75%, 12/1/27 | \$ 5,370,107 |
| 7,025,000 | BBB/Baa3 | Tobacco Settlement Authority Washington, 6.625%, 6/1/32 | 7,332,836 |
| 14,315,000 | AAA/Aaa | Washington State General Obligation, 0.0%, 6/1/22 | 6,353,856 |
| | | | \$ 19,056,799 |
| | | Wyoming - 1.5% | |
| 5,000,000 | BB+/Ba3 | Sweetwater County Solid Waste Disposal Revenue, 6.9%, 9/1/24 | \$ 5,064,850 |
| | | TOTAL TAX-EXEMPT OBLIGATIONS (Cost \$402,542,704) | \$ 434,069,539 |
| | | Shares | |
| | | TAX-EXEMPT MONEY MARKET MUTUAL FUND - 1.3% of Net Assets | |
| 4,415,959 | | BlackRock Provident Institutional Municipal Fund | \$ 4,415,959 |
| | | TOTAL TAX-EXEMPT MONEY MARKET MUTUAL FUND (Cost \$4,415,959) | \$ 4,415,959 |
| | | TOTAL INVESTMENTS IN SECURITIES - 126.9% (Cost \$406,958,663) (b) (c) | \$ 438,485,498 |
| | | OTHER ASSETS AND LIABILITIES - 2.3% | \$ 8,069,088 |
| | | PREFERRED SHARES AT REDEMPTION VALUE - (29.2)% | \$ (101,000,000) |

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NET ASSETS APPLICABLE TO COMMON
 SHAREOWNERS - 100.0%

 \$ 345,554,586
 =====

The accompanying notes are an integral part of these financial statements.

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Pioneer Municipal High Income Trust

 SCHEDULE OF INVESTMENTS 4/30/05

(continued)

NR Security not rated by S&P or Moody's.

(144A) Security is exempt from registration under Rule 144A of the Securities Act of 1933. Such securities may be resold normally to qualified institutional buyers in a transaction exempt from registration. At April 30, 2005 the value of these securities amounted to \$970,880 or 0.3% of net assets applicable to common shareowners.

+ Prerefunded bonds have been collateralized by U.S. Treasury securities which are held in escrow to pay interest and principal on the tax exempt issue and to retire the bonds in full at the earliest refunding date.

++ Prerefunded bonds have been collateralized by cash sufficient to pay interest and principal on the tax exempt issue and to retire the bonds in full at the earliest refunding date.

(a) Indicates a security that has a zero coupon that remains in effect until a predetermined date at which time the stated coupon rate becomes effective until final maturity.

(b) The concentration of investments by type of obligation/market sector is as follows:

| | |
|---------------------------|--------|
| Insured | 13.3% |
| General Obligation | 3.0 |
| Revenue Bonds: | |
| Health Revenue | 23.4 |
| Airport Revenue | 18.1 |
| Tobacco Revenue | 10.4 |
| Education Revenue | 7.5 |
| Pollution Control Revenue | 6.8 |
| Development Revenue | 6.2 |
| Power Revenue | 4.4 |
| Transportation Revenue | 1.6 |
| Other | 1.5 |
| Facilities Revenue | 1.4 |
| Gaming Revenue | 1.2 |
| Housing Revenue | 1.0 |
| Utilities Revenue | 0.2 |
| | ----- |
| | 100.0% |
| | ===== |

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- (c) At April 30, 2005, the net unrealized gain on investments based on cost for federal income tax purposes of \$406,015,616 was as follows:

| | |
|---|---------------------|
| Aggregate gross unrealized gain for all investments in which there is an excess of value over tax cost | \$40,728,2 |
| Aggregate gross unrealized loss for all investments in which there is an excess of tax cost over value | (8,258,34 ----- |
| Net unrealized gain | \$32,469,8 ===== |
| For financial reporting purposes net unrealized gain on investments was \$31,526,835 and cost of investments aggregated \$406,958,663 | |

Purchases and sales of securities (excluding temporary cash investments) for the year ended April 30, 2005, aggregated \$106,430,127 and \$111,957,123, respectively.

The accompanying notes are an integral part of these financial statements.
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Pioneer Municipal High Income Trust

STATEMENT OF ASSETS AND LIABILITIES 4/30/05

ASSETS:

| | |
|--|------------------------|
| Investments in securities, at value (cost \$406,958,663) | \$438,485,498 |
| Cash | 6,910 |
| Receivables - | |
| Investment securities sold | 337,284 |
| Interest | 9,010,484 |
| Unrealized appreciation on interest rate swaps | 817,307 |
| Prepaid expenses | 31,118 |
| Total assets | \$448,688,601 ----- |

LIABILITIES:

| | |
|---|-----------------------|
| Dividends payable to common shareowners | \$ 1,769,671 |
| Due to affiliate | 232,922 |
| Administration fee payable | 25,481 |
| Accrued expenses | 105,941 |
| Total liabilities | \$ 2,134,015 ----- |

PREFERRED SHARES AT REDEMPTION VALUE:

| | |
|--|------------------------|
| \$25,000 liquidation value per share applicable to 4,040 shares | \$101,000,000 ----- |
|--|------------------------|

NET ASSETS APPLICABLE TO COMMON SHAREOWNERS:

| | |
|-------------------------------------|---------------|
| Paid-in capital | \$315,162,552 |
| Undistributed net investment income | 203,603 |

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| | |
|--|---------------|
| Accumulated net realized loss on investments and interest rate swaps | (2,155,711) |
| Net unrealized gain on investments | 31,526,835 |
| Net unrealized gain on interest rate swaps | 817,307 |
| | ----- |
| Net assets applicable to common shareowners | \$345,554,586 |
| | ----- |
| NET ASSET VALUE PER SHARE: | |
| No par value, (unlimited number of shares authorized) | |
| Based on \$345,554,586/22,120,893 common shares | \$ 15.62 |
| | ===== |

The accompanying notes are an integral part of these financial statements.

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Pioneer Municipal High Income Trust

STATEMENT OF OPERATIONS

For the Year Ended 4/30/05

| | | |
|---|--------------|--------------|
| INVESTMENT INCOME: | | |
| Interest | | \$28,607,920 |
| | | ----- |
| EXPENSES: | | |
| Management fees | \$ 2,592,674 | |
| Administration fees and reimbursements | 355,109 | |
| Transfer agent fees and expenses | 53,029 | |
| Auction agent fees | 267,788 | |
| Custodian fees | 17,571 | |
| Registration fees | 23,750 | |
| Professional fees | 47,890 | |
| Printing expense | 19,537 | |
| Trustees' fees | 11,243 | |
| Miscellaneous | 41,506 | |
| | ----- | |
| Total expenses | | \$ 3,430,097 |
| Less fees paid indirectly | | (14) |
| | | ----- |
| Net expenses | | \$ 3,430,083 |
| | | ----- |
| Net investment income | | \$25,177,837 |
| | | ----- |
| REALIZED AND UNREALIZED GAIN (LOSS) ON INVESTMENTS AND INTEREST RATE SWAPS: | | |
| Net realized gain (loss) from: | | |
| Investments | \$ 803,500 | |
| Interest rate swaps | (544,847) | \$ 258,653 |
| | ----- | ----- |
| Change in net unrealized gain on: | | |
| Investments | \$20,940,595 | |
| Interest rate swaps | (319,493) | \$20,621,102 |
| | ----- | ----- |
| Net gain on investments and interest rate swaps | | \$20,879,755 |
| | | ----- |
| DIVIDENDS AND DISTRIBUTIONS TO PREFERRED | | |

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| | | |
|---|----------------|----------------|
| SHAREOWNERS FROM: | | |
| Net investment income | \$ (1,444,764) | |
| Net realized gains | (90,681) | |
| | ----- | |
| Total distributions | | \$ (1,535,445) |
| | | ----- |
| Net increase in net assets applicable to common shareowners resulting from operations | | \$44,522,147 |
| | | ----- |

The accompanying notes are an integral part of these financial statements.

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Pioneer Municipal High Income Trust

STATEMENTS OF CHANGES IN NET ASSETS

For the Year Ended 4/30/05 and the Period from 7/21/03
(Commencement of Operations) to 4/30/04

| | Year Ended 4/30/05 | 7/21/03 to 4/30/04 |
|---|-----------------------|--------------------------|
| FROM OPERATIONS: | | |
| Net investment income | \$ 25,177,837 | \$ 17,506,653 |
| Net realized gain (loss) on investments and interest rate swaps | 258,653 | (1,231,658) |
| Net unrealized gain on investments and interest rate swaps | 20,621,102 | 11,723,040 |
| Dividends and distributions to preferred shareowners from: | | |
| Net investment income | (1,444,764) | (539,580) |
| Net realized gains | (90,681) | - |
| | ----- | ----- |
| Net increase in net assets applicable to common shareowners resulting from operations | \$ 44,522,147 | \$ 27,458,455 |
| | ----- | ----- |
| DIVIDENDS AND DISTRIBUTIONS TO COMMON SHAREOWNERS FROM: | | |
| Net investment income (\$1.07 and \$0.72 per share, respectively) | \$ (23,669,356) | \$ (15,907,493) |
| Net realized gains (\$0.09 and \$0.00 per share, respectively) | (2,011,719) | - |
| | ----- | ----- |
| Total distributions to common shareowners | \$ (25,681,075) | \$ (15,907,493) |
| | ----- | ----- |
| FROM TRUST SHARE TRANSACTIONS: | | |
| Net proceeds from the issuance of common shares | \$ - | \$293,662,500 |
| Net proceeds from underwriters' over-allotment option exercised | - | 21,487,500 |
| Reinvestment of distributions | - | 1,673,643 |
| Changes in estimated common share offering costs charged to paid-in capital | 123,849 | (660,000) |
| Preferred share offering costs charged to paid-in capital | - | (1,224,943) |

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| | | |
|--|---------------|---------------|
| | ----- | ----- |
| Net increase in net assets applicable to common shareowners resulting from Trust share transactions | \$ 123,849 | \$314,938,700 |
| | ----- | ----- |
| Net increase in net assets applicable to common shareowners | \$ 18,964,921 | \$326,489,662 |
| NET ASSETS APPLICABLE TO COMMON SHAREOWNERS: | | |
| Beginning of period | 326,589,665 | 100,003 |
| | ----- | ----- |
| End of period (including undistributed net investment income of \$203,603 and \$998,979, respectively) | \$345,554,586 | \$326,589,665 |
| | ===== | ===== |

The accompanying notes are an integral part of these financial statements.

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Pioneer Municipal High Income Trust

FINANCIAL HIGHLIGHTS

| | Year Ended 4/30/05 |
|---|-----------------------|
| Per Common Share Operating Performance | |
| Net asset value, beginning of period | \$ 14.76 |
| | ----- |
| Increase (decrease) from investment operations:(a) | |
| Net investment income | \$ 1.14 |
| Net realized and unrealized gain on investments and interest rate swaps | 0.95 |
| Dividends and distributions to preferred shareowners: | |
| Net investment income | (0.07) |
| Net realized gains | 0.00 (d) |
| | ----- |
| Net increase from investment operations | \$ 2.02 |
| Dividends and distributions to common shareowners: | |
| Net investment income | (1.07) |
| Net realized gains | (0.09) |
| Changes in estimated offering costs charged to paid in capital with respect to: | |
| Common shares | 0.00 (d) |
| Preferred shares | - |
| | ----- |
| Net increase in net asset value | \$ 0.86 |
| | ----- |
| Net asset value, end of period(e) | \$ 15.62 |
| | ===== |
| Market value, end of period(e) | \$ 14.33 |
| | ----- |
| Total return(f) | 13.34% |
| Ratios to average net assets of common shareowners | |
| Net expenses(g) | 1.04% |
| Net investment income before preferred share dividends(g) | 7.60% |
| Preferred share dividends | 0.43% |
| Net investment income available to common shareowners | 7.17% |

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| | |
|---|-----------|
| Portfolio turnover | 25% |
| Net assets of common shareowners, end of period (in thousands) | \$345,555 |
| Preferred shares outstanding (in thousands) | \$101,000 |
| Asset coverage per preferred share, end of period | \$110,533 |
| Average market value per preferred share | \$ 25,000 |
| Liquidation value per preferred share | \$ 25,000 |
| Ratios to average net assets of common shareowners before reimbursement of organization expenses and expense reductions | |
| Net expenses(g) | 1.04% |
| Net investment income before preferred share dividends(g) | 7.60% |
| Preferred share dividends | 0.43% |
| Net investment income available to common shareowners | 7.17% |

- (a) The per share data presented above is based upon the average common shares outstanding for the periods presented.
- (b) Trust shares were first publicly offered on July 18, 2003.
- (c) Net asset value immediately after the closing of the first public offering was \$14.30.
- (d) Amount is less than \$0.01 per share.
- (e) Net asset value and market value are published in Barron's on Saturday, The Wall Street Journal on Monday and The New York Times on Monday and Saturday.
- (f) Total investment return is calculated assuming a purchase of common shares at the current market value on the first day and a sale at the current market value on the last day of the periods reported. Dividends and distributions, if any, are assumed for purposes of this calculation to be reinvested at prices obtained under the Trust's dividend reinvestment plan. Total investment return does not reflect brokerage commissions. Total investment return less than a full period is not annualized. Past performance is not a guarantee of future results.
- (g) Ratios do not reflect the effect of dividend payments to preferred shareowners.
- (h) Annualized.

The information above represents the audited operating performance data for a share of common stock outstanding, total investment return, ratios to average net assets of common shareowners and other supplemental data for the periods indicated. This information has been determined based upon financial information provided in the financial statements and market value data for the Trust's common shares.

The accompanying notes are an integral part of these financial statements.

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Pioneer Municipal High Income Trust

NOTES TO FINANCIAL STATEMENTS 4/30/05

1. Organization and Significant Accounting Policies

Pioneer Municipal High Income Trust (the "Trust") was organized as a Delaware statutory trust on March 13, 2003. Prior to commencing operations on July 21, 2003, the Trust had no operations other than matters relating to its organization and registration as a diversified, closed-end management investment company under the Investment Company Act of 1940, as amended, and the sale and issuance to Pioneer Investment Management, Inc. ("PIM"), the Trust's investment adviser and a wholly owned indirect subsidiary of UniCredito Italiano S.p.A. ("UniCredito Italiano"), of 6,981 shares of beneficial interest at an aggregate purchase price of \$100,003. The investment objective of the Trust is to seek a high level of current income exempt from regular federal income tax and the

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Trust may seek capital appreciation to the extent that it is consistent with its primary investment objective.

The Trust may invest in municipal securities with a broad range of maturities and credit ratings, including both investment grade and below investment grade municipal securities.

The Trust invests in below investment grade (high-yield) municipal securities. Debt securities rated below investment grade are commonly referred to as "junk bonds" and are considered speculative. These securities involve greater risk of loss, are subject to greater price volatility, and are less liquid, especially during periods of economic uncertainty or change, than higher rated debt securities.

The Trust's financial statements have been prepared in conformity with U.S. generally accepted accounting principles that require the management of the Trust to, among other things, make estimates and assumptions that affect the reported amounts of assets and liabilities, the disclosure of contingent assets and liabilities at the date of the financial statements, and the reported amounts of income, expenses and gains and losses on investments during the reporting period. Actual results could differ from those estimates. The following is a summary of significant accounting policies followed by the Trust in the preparation of its financial statements, which are

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Pioneer Municipal High Income Trust

NOTES TO FINANCIAL STATEMENTS 4/30/05

(continued)

consistent with those policies generally accepted in the investment company industry:

A. Security Valuation

Security transactions are recorded as of trade date. Securities are valued at prices supplied by independent pricing services, which consider such factors as Treasury spreads, yields, maturities and ratings. Valuations may be supplemented by dealers and other sources, as required. The values of interest rate swaps are determined by obtaining dealer quotations. Securities for which market quotations are not readily available are valued at their fair values as determined by, or under the direction of, the Board of Trustees. As of April 30, 2005, there were no securities fair valued. Temporary cash investments are valued at amortized cost.

Discount and premium on debt securities are accreted or amortized daily, respectively, on an effective yield to maturity basis and are included in interest income. Interest income is recorded on an accrual basis.

Gains and losses on sales of investments are calculated on the identified cost method for both financial reporting and federal income tax purposes.

B. Federal Income Taxes

It is the Trust's policy to comply with the requirements of the Internal Revenue Code applicable to regulated investment companies and to distribute all of its taxable income and net realized capital gains, if any, to its shareowners. Therefore, no federal income tax provision is required.

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The amounts and characterizations of distributions to shareowners for financial reporting purposes are determined in accordance with federal income tax rules. Therefore, the source of the Trust's distributions may be shown in the accompanying financial statements as either from or in excess of net investment income or net realized gain on investment transactions, or from paid in-capital, depending on the type of book/tax differences that may exist.

At April 30, 2005, the Trust reclassified \$859,093 to decrease undistributed net investment income and to decrease accumulated net realized loss on investments. The reclassification has no

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Pioneer Municipal High Income Trust

impact on the net asset value of the Trust and presents the Trust's capital accounts on a tax basis.

The tax character of distributions paid to common and preferred shareowners during the year ended April 30, 2005 and the period ended April 30, 2004 was as follows:

| | 2005 | 2004 |
|-----------------------------|--------------|--------------|
| Distributions paid from: | | |
| Tax exempt income | \$25,094,466 | \$16,447,073 |
| Ordinary income | 1,196,946 | - |
| Net long-term capital gains | 925,108 | - |
| | ----- | ----- |
| Total | \$27,216,520 | \$16,447,073 |
| | ===== | ===== |

The following shows the components of distributable earnings on a federal income tax basis at April 30, 2005.

| | 2005 |
|----------------------------------|--------------|
| Undistributed tax-exempt income | \$ 1,074,362 |
| Dividend payable - common shares | (1,769,671) |
| Unrealized appreciation | 33,243,038 |
| Post-October loss deferred | (2,155,695) |
| | ----- |
| Total | \$30,392,034 |
| | ----- |

The difference between unrealized appreciation on a book-basis of \$32,344,142 shown on the Statement of Assets and Liabilities and tax-basis unrealized

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appreciation of \$33,243,038 is primarily attributable to the difference between book and tax amortization methods for premiums and discounts on fixed income securities, tax deferral of losses on wash sales and other book/tax differences.

C. Automatic Dividend Reinvestment Plan

All common shareowners automatically participate in the Automatic Dividend Reinvestment Plan (the "Plan"), under which participants receive all dividends and capital gain distributions (collectively, "dividends") in full and fractional common shares of the Trust in lieu of cash. Shareowners may elect not to participate in the Plan. Shareowners not participating in the Plan receive all dividends and capital gain distributions in cash. Participation in the Plan is completely voluntary and may be terminated or resumed at any time by

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Pioneer Municipal High Income Trust

NOTES TO FINANCIAL STATEMENTS 4/30/05

(continued)

notifying Mellon Investor Services LLC, the agent for shareowners in administering the Plan (the "Plan Agent"), prior to any dividend record date; otherwise such termination or resumption will be effective with respect to any subsequently declared dividend or other distribution. Whenever the Trust declares a dividend on common shares payable in cash, participants in the Plan will receive the equivalent in common shares acquired by the Plan Agent either (i) through receipt of additional unissued but authorized common shares from the Trust or (ii) by purchase of outstanding common shares on the New York Stock Exchange or elsewhere. If, on the payment date for any dividend the net asset value per common share is equal to or less than the market price per share plus estimated brokerage trading fees ("market premium"), the Plan Agent will invest the dividend amount in newly issued common shares. The number of newly issued common shares to be credited to each account will be determined by dividing the dollar amount of the dividend by the net asset value per common share on the date the shares are issued, provided that the maximum discount from the then current market price per share on the date of issuance does not exceed 5%. If, on the payment date for any dividend, the net asset value per common share is greater than the market value ("market discount"), the Plan Agent will invest the dividend amount in common shares acquired in open-market purchases. There are no brokerage charges with respect to newly issued common shares. However, each participant will pay a pro rata share of brokerage trading fees incurred with respect to the Plan Agent's open-market purchases. Participating in the Plan does not relieve shareowners from any federal, state or local taxes which may be due on dividends paid in any taxable year. Shareowners holding Plan shares in a brokerage account may not be able to transfer the shares to another broker and continue to participate in the Plan.

2. Management Agreement

PIM manages the Trust's portfolio. Management fees are calculated daily at the annual rate of 0.60% of the Trust's average daily managed assets. "Managed assets" is the average daily value of the Trust's total assets minus the sum of the Trust's liabilities, which liabilities exclude debt related to leverage, short-term debt and the aggregate liquidation preference of any outstanding preferred shares. At April 30, 2005, \$232,922 was payable to PIM related to management fees.

Pioneer Municipal High Income Trust

In addition, under PIM's management and administration agreements, certain other services and costs are paid by PIM and reimbursed by the Trust. For the year ended April 30, 2005, the Trust recorded \$52,684 in reimbursements and is included in "Administration fees and reimbursement" on the Statement of Operations.

The Trust has retained Princeton Administrators, L.P., ("Princeton") an affiliate of Merrill Lynch, Pierce, Fenner & Smith Incorporated, to provide certain administrative services to the Trust on its behalf. The Trust pays Princeton a monthly fee at an annual rate of 0.07% of the average weekly value of the Trust's managed assets, subject to a minimum monthly fee of \$10,000.

Also, PIM has agreed for the first three years of the Trust's investment operations to limit the Trust's total annual expenses (excluding organizational and offering costs for common and preferred shares, interest expense, the cost of defending or prosecuting any claim or litigation to which the Trust is a party, (together with any amount in judgment or settlement), indemnification expenses or taxes incurred due to the failure of the Trust to qualify as a regulated investment company under the Code or any other non-recurring or non-operating expenses) to 0.80% of the Trust's average daily managed assets. The dividend on any preferred shares is not an expense for this purpose. As of April 30, 2005, the Trust's expenses were not reduced under such arrangements.

3. Transfer Agents

Pioneer Investment Management Shareholder Services, Inc. ("PIMSS"), a wholly owned indirect subsidiary of UniCredito Italiano, through a sub-transfer agency agreement with Mellon Investor Services LLC, provides substantially all transfer agent and shareowner services related to the Trust's common shares at negotiated rates which are paid by the Trust. Deutsche Bank Trust Company Americas is the transfer agent, registrar, dividend paying agent and redemption agent with respect to the Trust's Auction Preferred Shares ("APS"). The Trust pays Deutsche Bank Trust Company Americas an annual fee, as is agreed to from time to time by the Trust and Deutsche Bank Trust Company Americas, for providing such services.

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Pioneer Municipal High Income Trust

NOTES TO FINANCIAL STATEMENTS 4/30/05

(continued)

4. Expense Offset Arrangements

The Trust has entered into an arrangement with its custodian whereby credits realized as a result of uninvested cash balances are used to reduce a portion of the Trust's custodian expenses. For the year ended April 30, 2005, the Trust's expenses were reduced by \$14 under such arrangement.

5. Interest Rate Swaps

The Trust may enter into interest rate swap transactions to attempt to protect itself from increasing dividend or interest expense on its leverage resulting

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from increasing short-term interest rates. The cost of leverage may rise with an increase in interest rates, generally having the effect of lower yields and potentially lower dividends to common shareowners. Interest rate swaps can be used to "lock in" the cost of leverage and reduce the negative impact that rising short-term interest rates would have on the Trust's leveraging costs.

An interest rate swap is an agreement between two parties, which involves exchanging a floating rate and fixed rate interest payments for a specified period of time. Interest rate swaps involve the accrual of the net interest payments between the parties on a daily basis, with the net amount recorded within the unrealized appreciation/ depreciation of interest rate swaps on the Statement of Assets and Liabilities. Once the interim payments are settled in cash, at the pre-determined dates specified in the agreement, the net amount is recorded as realized gain or loss from interest rate swaps on the Statement of Operations. During the term of the swap, changes in the value of the swap are recognized as unrealized gains and losses by "marking-to market" the market value of the swap based on values obtained from dealer quotations. When the swap is terminated, the Trust will record a realized gain or loss equal to the difference, if any, between the proceeds from (or cost of) closing the contract and the cost basis of the contract. The Trust is exposed to credit risk in the event of non-performance by the other party to the interest rate swap. However, at April 30, 2005 the Trust does not anticipate non-performance by any counterparty. Risk may also arise with regard to market movements in the value of the swap arrangement that do not exactly offset the changes in the related dividend requirement or interest expense on the Trust's leverage.

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Pioneer Municipal High Income Trust

Under the terms of the agreement entered into by the Trust, the Trust receives a floating rate of interest and pays a fixed rate of interest for the term. Details of the swap agreement outstanding as of April 30, 2005 were as follows:

| Counterparty | Termination Date | Notional Amount (000) | Fixed Rate | Floating Rate | Unrealized Appreciation |
|--------------|------------------|-----------------------|------------|---------------|-------------------------|
| UBS AG | April 5, 2009 | \$50,000 | 2.665% | 1 month BMA | \$817,307 |

6. Trust Shares

There are an unlimited number of common shares of beneficial interest authorized. Of the 22,120,893 common shares of beneficial interest outstanding at April 30, 2005, PIM owned 6,981 shares.

Transactions in common shares of beneficial interest for the year ended April 30, 2005 and the period from July 21, 2003 (commencement of operations) to April 30, 2004 were as follows:

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| | 2005 | 2004 |
|--|------------|------------|
| | ----- | ----- |
| Shares issued in connection with initial public offering | - | 20,500,000 |
| Shares issued from underwriters' over-allotment option exercised | | 1,500,000 |
| Reinvestment of distributions | - | 113,912 |
| | - | ----- |
| Net increase in shares outstanding | - | 22,113,912 |
| Shares outstanding at beginning of period | 22,120,893 | 6,981 |
| | ----- | ----- |
| Shares outstanding at end of period | 22,120,893 | 22,120,893 |
| | ===== | ===== |

The Trust may classify or reclassify any unissued common shares of beneficial interest into one or more series of preferred shares of beneficial interest. As of April 30, 2005, there were 4,040 APS as follows: Series A-2,000 and Series B-2,040.

Dividends on Series A and Series B APS are cumulative at a rate which is reset every seven days based on the results of an auction. Dividend rates ranged from 0.96% to 2.499% during the year ended April 30, 2005.

The Trust may not declare dividends or make other distributions on its common shares or purchase any such shares if, at the time of the

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Pioneer Municipal High Income Trust

NOTES TO FINANCIAL STATEMENTS 4/30/05

(continued)

declaration, distribution or purchase, asset coverage with respect to the outstanding preferred shares would be less than 200%.

The APS are redeemable at the option of the Trust, in whole or in part, on any dividend payment date at \$25,000 per share plus any accumulated or unpaid dividends, whether or not declared. The APS are also subject to mandatory redemption at \$25,000 per share plus any accumulated or unpaid dividends, whether or not declared, if certain requirements relating to the composition of the assets and liabilities of the Trust as set forth in the Agreement and Declaration of Trust are not satisfied.

The holders of APS have voting rights equal to the holders of the Trust's common shares (one vote per share) and will vote together with holders of the common shares as a single class. However, holders of APS are also entitled to elect two of the Trust's Trustees. In addition, the Investment Company Act of 1940, as amended, requires that along with approval by shareowners that might otherwise be required, the approval of the holders of a majority of any outstanding preferred shares, voting separately as a class would be required to (a) adopt any plan of reorganization that would adversely affect the preferred shares and (b) take any action requiring a vote of security holders, including, among other things, changes in the Trust's subclassification as a closed-end management investment company or changes in its fundamental investment restrictions.

7. Subsequent Events

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Subsequent to April 30, 2005, the Board of Trustees of the Trust declared a dividend from undistributed net investment income of \$0.08 per common share payable May 31, 2005, to shareowners of record on May 13, 2005.

For the period May 1, 2005 to May 31, 2005, dividends declared on preferred stock totaled \$228,690 in aggregate for the two outstanding preferred share series.

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Pioneer Municipal High Income Trust

ADDITIONAL INFORMATION (unaudited)

During the period, there have been no material changes in the Trust's investment objective or fundamental policies that have not been approved by the shareowners. There have been no changes in the Trust's charter or By-Laws that would delay or prevent a change in control of the Trust which have not been approved by the shareowners. There have been no changes in the principal risk factors associated with investment in the Trust. There have been no changes in the persons who are primarily responsible for the day-to-day management of the Trust's portfolio.

Notice is hereby given in accordance with Section 23(c) of the Investment Company Act of 1940 that the Trust may purchase, from time to time, its common shares in the open market.

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Pioneer Municipal High Income Trust

NOTES TO FINANCIAL STATEMENTS 4/30/05

(continued)

IMPORTANT TAX INFORMATION (unaudited)

All of the net investment income distributions paid by Pioneer Municipal High Income Trust during the taxable year ended April 30, 2005 qualify as tax-exempt interest dividends for federal income tax purposes.

Additionally, the following summarizes the taxable per share distributions from realized gains paid by the Trust during the year:

| | Payable Date | Ordinary Income | Long-Term Capital Gains |
|------------------------|--------------|-----------------|----------------------------|
| Common Shareholders | 12/20/2004 | \$0.050925 | \$0.040017 |
| Preferred Shareholders | | | |
| Series A | 12/8/2004 | \$ 4.56 | \$ 3.59 |
| Series A | 12/15/2004 | \$ 6.38 | \$ 5.01 |
| Series A | 12/22/2004 | \$ 1.58 | \$ 1.24 |
| Series B | 12/9/2004 | \$ 5.72 | \$ 4.49 |

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| | | | | | |
|----------|------------|----|------|----|------|
| Series B | 12/16/2004 | \$ | 4.57 | \$ | 3.58 |
| Series B | 12/23/2004 | \$ | 2.33 | \$ | 1.84 |

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Pioneer Municipal High Income Trust

REPORT OF INDEPENDENT REGISTERED PUBLIC ACCOUNTING FIRM

To the Board of Trustees and Shareowners of
Pioneer Municipal High Income Trust:

We have audited the accompanying statement of assets and liabilities, including the schedule of investments, of Pioneer Municipal High Income Trust (the "Trust") as of April 30, 2005, and the related statement of operations for the year then ended, and the statements of changes in net assets and financial highlights for the year ended April 30, 2005 and for the period from July 21, 2003 (commencement of operations) to April 30, 2004. These financial statements and financial highlights are the responsibility of the Trust's management. Our responsibility is to express an opinion on these financial statements and financial highlights based on our audits.

We conducted our audits in accordance with the standards of the Public Company Accounting Oversight Board (United States). Those standards require that we plan and perform the audit to obtain reasonable assurance about whether the financial statements and financial highlights are free of material misstatement. We were not engaged to perform an audit of the Trust's internal control over financial reporting. Our audits included consideration of internal control over financial reporting as a basis for designing audit procedures that are appropriate in the circumstances, but not for the purpose of expressing an opinion on the effectiveness of the Trust's internal control over financial reporting. Accordingly, we express no such opinion. An audit also includes examining, on a test basis, evidence supporting the amounts and disclosures in the financial statements and financial highlights, assessing the accounting principles used and significant estimates made by management, and evaluating the overall financial statement presentation. Our procedures included confirmation of securities owned as of April 30, 2005, by correspondence with the custodian. We believe that our audits provide a reasonable basis for our opinion.

In our opinion, the financial statements and financial highlights referred to above present fairly, in all material respects, the financial position of Pioneer Municipal High Income Trust at April 30, 2005, the results of its operations for the year then ended, and the changes in its net assets and the financial highlights for the year ended April 30, 2005 and for the period from July 21, 2003 (commencement of operations) to April 30, 2004, in conformity with U.S. generally accepted accounting principles.

/s/ ERNST & YOUNG LLP

Boston, Massachusetts
June 3, 2005

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RESULTS OF SHAREOWNER MEETING

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On November 10, 2004, Pioneer Municipal High Income Trust held its annual meeting of shareowners to elect three Class I Trustees. All three Trustees were elected. Here are the detailed results of the votes.

Proposal 1 - To elect Class I Trustees.

| Nominee | Affirmative | Withheld |
|---------------------|-------------|----------|
| John F. Cogan, Jr.+ | 3,179 | 7 |
| Dr. R.H. Egdahl* | 19,005,219 | 169,451 |
| Stephen K. West | 19,007,929 | 166,741 |

* Retired effective 12/31/04
+ Elected by Preferred Shares only

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Pioneer Municipal High Income Trust

FACTORS CONSIDERED BY THE INDEPENDENT TRUSTEES IN APPROVING THE MANAGEMENT CONTRACT

The Investment Company Act of 1940 requires that the Board of Trustees and a majority of the Independent Trustees (collectively the "Trustees") voting separately annually approve the Trust's Management Contract (the "Management Contract"). The Trustees have determined that the terms of the Management Contract are fair and reasonable and that renewal of the contract will enable the Trust to receive quality investment advisory services at a cost deemed reasonable and is in the best interests of the Trust and its shareowners. In making such determinations, the Independent Trustees relied upon the assistance of counsel to the Independent Trustees and counsel to the Trust.

Throughout the year, the Independent Trustees regularly met in executive sessions separately from the Interested Trustees of the Trust and any officers of Pioneer Investment Management, Inc., the Trust's adviser (the "Investment Adviser"), or its affiliates. While the Trustees, including the Independent Trustees, act on all major matters relating to the Trust, a significant portion of the activities of the Board of Trustees (including certain of those described herein) is conducted through committees whose members are comprised exclusively of Independent Trustees. Such committee meetings are attended by officers of the Trust or the Investment Adviser to the extent requested by the committee.

In evaluating the Management Contract, the Trustees conducted a review that was specifically focused upon the renewal of the Management Contract, and also relied upon their knowledge, resulting from their meetings throughout the year, of the Investment Adviser, its services and the Trust. Both in meetings specifically addressed to renewal of the Management Contract and at other meetings during the course of the year, the Trustees, including the Independent Trustees, received materials relating to the Investment Adviser's investment and management services under the Management Contract. These materials included information on (i) the investment performance of the Trust, a peer group of funds and two relevant indices, in each case selected by the Independent

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Trustees for this purpose, (ii) the general investment outlook in the markets in which the Trust invests, (iii) the procedures employed to determine the value of each of the Trust's assets, (iv) the Investment Adviser's management of the relationships with the Trust's unaffiliated service providers, (v) the record of compliance with the Trusts investment policies and restrictions and with the Trust's Code of Ethics and the structure and responsibilities of the

Pioneer Municipal High Income Trust

FACTORS CONSIDERED BY THE INDEPENDENT TRUSTEES IN
APPROVING THE MANAGEMENT CONTRACT (continued)

Investment Adviser's compliance department, (vi) the nature, cost and character of non-investment management services provided by the Investment Adviser and its affiliates, (vii) the disclosures included in the Trust's reports to shareowners, and (viii) analyses of the benefits and costs of the use of leverage through the issuance of the Trust's preferred shares and the sensitivity of such analysis to changes in interest rates.

Specifically in connection with the Independent Trustees' review of the Management Contract, the Independent Trustees requested and the Investment Adviser provided additional information in order to evaluate the quality of the Investment Adviser's services and the reasonableness of the fee under the Management Contract. Among other items, this information included data or analyses of (1) investment performance for one year and life of the Trust periods for the Trust and a peer group selected by the Independent Trustees for this purpose, (2) management fees incurred by a peer group of funds selected by the Independent Trustees for this purpose, (3) the advisory fees of comparable portfolios of other clients of the Investment Adviser, (4) expense ratios for the Trust and a peer group of funds selected by the Independent Trustees for this purpose, (5) the overall organization of the Investment Adviser, (6) the Investment Adviser's financial results and condition, including its and certain of its affiliates profitability from services performed for the Trust, (7) transfer agency fees and administrative reimbursements paid to the Investment Adviser or affiliates, (8) investment management staffing, (9) the potential for achieving further economies of scale in light of expenses that are not incurred as fees based on a percentage of net assets, and (10) operating expenses paid to third parties.

The following summarizes matters considered by the Trustees in connection with their renewal of the Trust's Management Contract. The Trustees did not identify any single factor as all-important or controlling, and the summary does not detail all the matters that were considered.

- A. Ancillary Benefits to Shareowners. The Trustees considered the benefits to shareowners of investing in a closed-end fund that is part of an established group of open and closed-end funds and which has a favorable reputation in the secondary market for closed-end funds. The Trustees also noted that the relationship of the market price relative to the Trust's net assets attributed to its

Pioneer Municipal High Income Trust

common shares was comparable relative to other closed-end funds with similar investment approaches.

- B. Compliance and Investment Performance. The Trustees determined that the Investment Adviser had policies and systems reasonably designed to achieve compliance with the Trust's investment objectives and regulatory requirements. The Trustees also reviewed the Trust's investment performance based upon total return and yield, as well as the Trust's performance compared to both the performance of a peer group and an index, in each case selected by the Independent Trustees for this purpose. The Trust's performance based upon total return was in the fifth quintile of the peer group for the life of the Trust through June 30, 2004 and in the second quintile for the period October 31, 2003 through October 31, 2004. (In all quintile rankings referred to throughout this discussion first quintile is most favorable to the Trust's shareowners. Thus, highest relative performance would be first quintile and lowest relative expenses also would be first quintile.) The Trustees also considered that the yield to Trust shareowners significantly exceeded the yield of the Lehman Municipal Bond Index. The Trustees concluded that the performance of the Trust supported the continuation of the Management Contract.
- C. The Investment Adviser's Personnel and Methods. The Trustees reviewed the background of members of the team responsible for the daily management of the Trust and the Trust's investment objective and discipline. The Independent Trustees also have had discussions with senior management of the Investment Adviser responsible for investment operations and the senior management of the Investment Adviser's fixed income group. Among other things, the Trustees considered the number, education and experience of the Investment Adviser's investment staff and their use of technology and emphasis on analytics in view of the risk profile of securities in which the Trust invests. The Trustees concluded that the Investment Adviser had the quality and depth of personnel and the well-developed methods essential to performing its duties under the Management Contract.
- D. Nature and Quality of Other Services. The Trustees considered the nature, quality, cost and extent of other services provided to shareowners of the Trust, including administrative and shareowner services performed by the Investment Adviser under the Manage-

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Pioneer Municipal High Income Trust

FACTORS CONSIDERED BY THE INDEPENDENT TRUSTEES IN
APPROVING THE MANAGEMENT CONTRACT

(continued)

ment Contract. The Trustees also considered the reasonableness of the arrangements for reimbursement of the Investment Adviser's out-of-pocket costs and expenses, including overhead, for certain administrative services that the Investment Adviser is not required to provide under the Management Contract. The Trustees also considered the nature and extent of the other services provided by the Investment Adviser's affiliates under other contracts and its supervision of third party service providers. Based on these considerations, the Trustees concluded that the nature, quality, cost and extent of such services are satisfactory and reliable and serve the shareowners of the Trust well.

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- E. Management Fee and Expenses. The Trustees considered the Investment Advisers fee under the Management Contract relative to the management fees charged by a peer group of funds selected by the Independent Trustees for this purpose using data provided by an independent third party. The Trust's management fee for the 12 months ended June 30, 2004 was in the first quintile relative to the management fees paid by the other funds in that peer group for the comparable period. The Trustees determined that the fee under the Management Contract was reasonable and fair in light of both the overall nature and quality of services provided by the Investment Adviser and the fees charged by the funds in the peer group. The Trustees also considered the Trust's expense ratio and expense ratios of a peer group of funds selected by the Independent Trustees for this purpose. The Trusts expense ratio for the 12 months ended June 30, 2004 was in the second quintile of the applicable peer group for the most recent fiscal year of the peer group for the comparable period. The Trustees concluded that the Trust's overall expense ratio was lower than that of comparable funds and therefore was benefiting shareowners of the Trust.
- F. Profitability. The Trustees considered the level of the Investment Adviser's profits with respect to the management of the Pioneer Funds, including details with respect to the Trust. This consideration included a review of the Investment Adviser's methodology in allocating certain of its costs to the management of each Trust. The Trustees also considered the financial results realized by the Investment Adviser in connection with the operation of the Trust. They further considered the profits realized by the Investment Adviser and its affiliates from non-fund businesses that may

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Pioneer Municipal High Income Trust

benefit from or be related to the Trust's business. The Trustees considered the Investment Adviser's profit margins in comparison with the limited available industry data. The Trustees concluded that the Investment Adviser's profits from management of the Pioneer funds, including the financial results derived from the Trust, bear a reasonable relationship to the services rendered and are fair for the management of the Trust in light of the business risks involved.

- G. Economies of Scale. The Trustees considered the economies of scale with respect to the management of the Trust, whether the Trust had appropriately benefited from any economies of scale, and whether there was potential for realization of any further economies of scale. Since the Trust is a closed-end fund and its size is relatively stable at a level of assets that was anticipated when the management fee was initially set, the Trustees concluded that economies of scale were not a relevant consideration.
- H. Other Benefits to the Investment Adviser. The Trustees also considered the character and amount of fees paid by the Trust, other than under the Management Contract, for services provided by the Investment Adviser and affiliates. The Trustees further considered the revenues and profitability of the Investment Adviser's businesses other than the fund business, including the Investment Adviser's institutional investment advisory business. The Trustees considered the intangible benefits that accrue to the Investment Adviser and its affiliates by virtue of its relationship with the Trust and the Pioneer funds as a group. The Trustees concluded that all these types of benefits accruing to the Investment Adviser were reasonable in the context of the overall relationship between the Investment Adviser and the Trust.

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Conclusion. The Trustees, in light of the Investment Adviser's overall performance, considered it appropriate to continue to retain the management services of the Investment Adviser. Based on their evaluation of all material factors deemed relevant and the advice of independent counsel, the Trustees concluded that the Management Contract with the Trust is fair and reasonable and voted to approve the continuation of the Management Contract for another year.

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Pioneer Municipal High Income Trust

TRUSTEES, OFFICERS AND SERVICE PROVIDERS

Investment Adviser
Pioneer Investment Management, Inc.

Custodian
Brown Brothers Harriman & Co.

Independent Registered Public Accounting Firm
Ernst & Young LLP

Legal Counsel
Wilmer Cutler Pickering Hale and Dorr LLP

Transfer Agent
Pioneer Investment Management Shareholder Services, Inc.

Shareowner Services and Sub-Transfer Agent
Mellon Investor Services LLC

Preferred Share Auction/Transfer Agent and Registrar
Deutsche Bank Trust Company Americas

Sub-Administrator
Princeton Administrators, L.P.

Trustees and Officers

The Trust's Board of Trustees provides broad supervision over the Trust's affairs. The officers of the Trust are responsible for the Trust's operations. The Trust's Trustees and officers are listed below, together with their principal occupations during the past five years. Trustees who are interested persons of the Trust within the meaning of the Investment Company Act of 1940 are referred to as Interested Trustees. Trustees who are not interested persons of the Trust are referred to as Independent Trustees. Each of the Trustees serves as a trustee of each of the 81 U.S. registered investment portfolios for which Pioneer Investment Management, Inc. ("Pioneer") serves as investment adviser (the "Pioneer Funds"). The address for all Interested Trustees and all officers of the Trust is 60 State Street, Boston, Massachusetts 02109.

The Trust's statement of additional information provides more detailed information regarding the Trust's Trustees and is available upon request, without charge, by calling 1-800-225-6292.

Proxy Voting Policies and Procedures of the Trust are available without charge, upon request, by calling our toll free number (1-800-225-6292). Information regarding how the Trust voted proxies relating to portfolio securities during the most recent 12-month period ended June 30 is publicly available to

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shareowners at www.pioneerfunds.com and on the SEC's web site at <http://www.sec.gov>.

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Pioneer Municipal High Income Trust

 INTERESTED TRUSTEES

| Name and Age | Positions Held With the Trust | Length of Service and Term of Office | Principal Occupation During Past Five Years |
|--------------------------|--|---|--|
| John F. Cogan, Jr. (79)* | Chairman of the Board, Trustee and President | Trustee since 2003. Term expires in 2007. | Deputy Chairman and a Director of Pioneer Global Asset Management ("PGAM"); Non-Executive Chairman of Pioneer Investment Management USA Inc. ("PIM-USA"); Chairman and a Director of Pioneer Alternative Investment Management Limited (Pioneer Alternative Investment Management (Bermuda) Limited and affiliate); President and Director of Pioneer Distributor, Inc. ("PFD"); President of all of the Pioneer Funds; and Officer of Pioneer (since 2000, partner prior to 2000) Wilmer Cutler Pickering Hale and Allen LLP (counsel to PIM-USA and the Pioneer Funds) |

*Mr. Cogan is an Interested Trustee because he is an officer or director of Pioneer and certain o

| | | | |
|-----------------------|--------------------------------------|---|--|
| Osbert M. Hood (52)** | Trustee and Executive Vice President | Trustee since 2003. Term expires in 2005. | President and Chief Executive Officer of Pioneer PIM-USA since May 2003 (Director of Pioneer since January 2001); President and Director of Pioneer since May 2003; Chairman of Pioneer Director of Pioneer Investment Management Shareholder Services ("PIMSS") since May 2003; Executive Vice President of all of the Pioneer Funds since June 2003; Executive Vice President and Chief Operating Officer of Pioneer PIM-USA, November 2000 to May 2003; Executive Vice President, Chief Financial Officer and Treasurer of Pioneer Hancock Advisers, L.L.C., Boston, Massachusetts, November 1999 to November 2000; Vice President and Chief Financial Officer, John Hancock Advisers, Boston, Massachusetts, April 1997 to November 1999 |
|-----------------------|--------------------------------------|---|--|

**Mr. Hood is an Interested Trustee because he is an officer or director of Pioneer and certain o

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Pioneer Municipal High Income Trust

 INTERESTED TRUSTEES

| Name, Age and Address | Positions Held With the Trust | Length of Service and Term of Office | Principal Occupation During Past Five Years |
|--|----------------------------------|---|--|
| David R. Bock **(61) 3050 K. Street NW, Washington, DC 20007 | Trustee | Trustee since 2005. Term expires in 2007. | Senior Vice President and Chief Financial Officer, I-trax, Inc. (publicly traded health care se company) (2001 - present); Mana Partner, Federal City Capital A (boutique merchant bank) (1995 - 2002 to 2004); Executive Vice P and Chief Financial Officer, Pe Inc. (internet-based mortgage t company) (2000 - 2002) |

*Mr. Bock became a Trustee of the Trust on January 1, 2005, following retirement of Dr. R. H. Eg

| | | | |
|---|---------|---|--|
| Mary K. Bush (57) 3509 Woodbine Street, Chevy Chase, MD 20815 | Trustee | Trustee since 2003. Term expires in 2006. | President, Bush International (international financial adviso |
|---|---------|---|--|

| | | | |
|--|---------|---|---|
| Margaret B.W. Graham (58) 1001 Sherbrooke Street West, Montreal, Quebec, Canada Montreal, Quebec, Canada H3A 1G5 | Trustee | Trustee since 2003. Term expires in 2005. | Founding Director, The Winthrop Inc. (consulting firm); Profess Management, Faculty of Managemen McGill University |
|--|---------|---|---|

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Pioneer Municipal High Income Trust

 INTERESTED TRUSTEES

| Name, Age and Address | Positions Held With the Trust | Length of Service and Term of Office | Principal Occupation During Past Five Years |
|---|----------------------------------|---|--|
| Marguerite A. Piret (57) One Boston Place, 28th Floor, | Trustee | Trustee since 2003. Term expires | |

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Boston, MA 02108

in 2006.

Stephen K. West (76)
125 Broad Street,
New York, NY 10004

Trustee

Trustee since 2003.
Term expires
in 2007.

John Winthrop (69)
One North Adgers Wharf,
Charleston, SC 29401

Trustee

Trustee since 2003.
Term expires
in 2005.

Pioneer Municipal High Income Trust

Name, Age and Address

Principal Occupation During Past Five Years

Other D
by this

Marguerite A. Piret (57)
One Boston Place, 28th Floor,

President and Chief Executive Officer, Newbury, Piret &
Company, Inc. (investment banking firm)

Directo
High In

Boston, MA 02108

(closed

company

Stephen K. West (76)

Senior Counsel, Sullivan & Cromwell (law firm)

Directo

125 Broad Street,
New York, NY 10004

Helveti
(closed

company

AMVESCA
(invest

John Winthrop (69)

President, John Winthrop & Co., Inc.

None

One North Adgers Wharf,

(private investment firm)

Charleston, SC 29401

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FUND OFFICERS

Pioneer Municipal High Income Trust

Name and Age

Positions Held
With the Trust

Length of Service
and Term of Office

Dorothy E. Bourassa (57)

Secretary

Since 2003.

Serves at the
discretion of the
Board.

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| | | |
|----------------------------|---------------------|--|
| Christopher J. Kelley (40) | Assistant Secretary | Since 2003. |
| | | Serves at the discretion of the Board. |
| David C. Phelan (48) | Assistant Secretary | Since 2003. |
| | | Serves at the discretion of the Board. |
| Vincent Nave (60) | Treasurer | Since 2003. |
| | | Serves at the discretion of the Board. |

FUND OFFICERS

Pioneer Municipal High Income Trust

| Name and Age | Principal Occupation During Past Five Years | Other Director by this Office |
|----------------------------|--|-------------------------------|
| Dorothy E. Bourassa (57) | Secretary of PIM-USA; Senior Vice President - Legal of Pioneer; and Secretary/Clerk of most of PIM-USA's subsidiaries since October 2000; Secretary of all of the Pioneer Funds since September 2003 (Assistant Secretary from November 2000 to September 2003); and Senior Counsel, Assistant Vice President and Director of Compliance of PIM-USA from April 1998 through October 2000 | None |
| Christopher J. Kelley (40) | Assistant Vice President and Senior Counsel of Pioneer since July 2002; Vice President and Senior Counsel of BISYS Fund Services, Inc. (April 2001 to June 2002); Senior Vice President and Deputy General Counsel of Funds Distributor, Inc. (July 2000 to April 2001; Vice President and Associate General Counsel from July 1996 to July 2000); Assistant Secretary of all Pioneer Funds since September 2003 | None |
| David C. Phelan (48) | Partner, Wilmer Cutler Pickering Hale and Dorr LLP; Assistant Secretary of all Pioneer Funds since September 2003 | None |
| Vincent Nave (60) | Vice President - Fund Accounting, Administration and Custody Services of Pioneer; and Treasurer of all of the Pioneer Funds (Assistant Treasurer from June 1999 to November 2000) | None |

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| Pioneer Municipal High Income Trust | | |
|-------------------------------------|-------------------------------|--|
| Name and Age | Positions Held With the Trust | Length of Service and Term of Office |
| Mark E. Bradley (45) | Assistant Treasurer | Since 2004. Serves at the discretion of the Board. |
| Luis I. Presutti (40) | Assistant Treasurer | Since 2003. Serves at the discretion of the Board. |
| Gary Sullivan (47) | Assistant Treasurer | Since 2003. Serves at the discretion of the Board. |
| Katherine Kim Sullivan (31) | Assistant Treasurer | Since 2003. Serves at the discretion of the Board. |

| Pioneer Municipal High Income Trust | | |
|-------------------------------------|---|---------------------------|
| Name and Age | Principal Occupation During Past Five Years | Other Direct by this Offi |
| Mark E. Bradley (45) | Deputy Treasurer of Pioneer since 2004; Treasurer and Senior Vice President, CDC IXIS Asset Management Services from 2002 to 2003; Assistant Treasurer and Vice President, MFS Investment Management from 1997 to 2002; and Assistant Treasurer of all of the Pioneer Funds since November 2004 | None |
| Luis I. Presutti (40) | Assistant Vice President - Fund Accounting, Administration and Custody Services of Pioneer; and Assistant Treasurer of all of the Pioneer Funds since November 2000 | None |
| Gary Sullivan (47) | Fund Accounting Manager - Fund Accounting, Administration and Custody Services of Pioneer; and Assistant Treasurer of all of the Pioneer Funds since May 2002 | None |

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| | | |
|-----------------------------|--|------|
| Katherine Kim Sullivan (31) | Fund Administration Manager - Fund Accounting, | None |
| ----- | | |
| | Administration and Custody Services since June 2003; Assistant Vice President - Mutual Fund Operations of State Street Corporation from June 2002 to June 2003 (formerly Deutsche Bank Asset Management); Pioneer Fund Accounting, Administration and Custody Services (Fund Accounting Manager from August 1999 to May 2002, Fund Accounting Services Supervisor from 1997 to July 1999); Assistant Treasurer of all Pioneer Funds since September 2003 | |
| ----- | | |

43

Pioneer Municipal High Income Trust

Name and Age

Martin J. Wolin (37)

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Chief

Office

The outstanding capital stock of PFD, PIM and PIMSS is indirectly wholly owned by UniCredito Italiano ("UniCredito Italiano"), one of the largest banking groups in Italy. PIM, the Trust's investment adviser, provides investment management and financial services funds, institutional and other clients.

Pioneer Municipal High Income Trust

Name and Age

Martin J. Wolin (37)

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Board.

The outstanding capital stock of PFD, PIM and PIMSS is indirectly wholly owned by UniCredito Italiano ("UniCredito Italiano"), one of the largest banking groups in Italy. PIM, the Trust's investment adviser, provides investment management and financial services institutional and other clients.

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HOW TO CONTACT PIONEER

We are pleased to offer a variety of convenient ways for you to contact Mellon for assistance or information.

You can call Mellon Investor Services LLC for:

Account Information 1-800-710-0935

Telecommunications Device for the Deaf (TDD) 1-800-231-5469

Or write to Mellon Investor Services LLC:

| For | Write to |
|--|---|
| General inquiries, lost dividend checks | P.O. Box 3315 South Hackensack, NJ 07606-1915 |
| Change of address, account consolidation | P.O. Box 3316 South Hackensack, NJ 07606-1916 |
| Lost stock certificates | P.O. Box 3317 South Hackensack, NJ 07606-1917 |
| Stock transfer | P.O. Box 3312 South Hackensack, NJ 07606-1912 |
| Dividend reinvestment plan (DRIP) | P.O. Box 3338 South Hackensack, NJ 07606-1938 |

For additional information, please contact your investment advisor or visit our web site www.pioneerfunds.com.

The Trust files a complete statement of investments with the Securities and Exchange Commission for the first and third quarters for each fiscal year on Form N-Q. Shareholders may view the filed Form N-Q by visiting the Commission's web site at <http://www.sec.gov>. The filed form may also be viewed and copied at the Commission's Public Reference Room in Washington, DC. Information regarding the operations of the Public Reference Room may be obtained by calling 1-800-SEC-0330.

17629-00-0605
(C)2005 Pioneer Funds Distributor, Inc.
Underwriter of Pioneer mutual funds,
Member SIPC

Pioneer Investment Management, Inc.
60 State Street
Boston, MA 02109

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www.pioneerfunds.com

ITEM 2. CODE OF ETHICS.

(a) Disclose whether, as of the end of the period covered by the report, the registrant has adopted a code of ethics that applies to the registrant's principal executive officer, principal financial officer, principal accounting officer or controller, or persons performing similar functions, regardless of whether these individuals are employed by the registrant or a third party. If the registrant has not adopted such a code of ethics, explain why it has not done so.

The registrant has adopted, as of the end of the period covered by this report, a code of ethics that applies to the registrant's principal executive officer, principal financial officer, principal accounting officer and controller.

(b) For purposes of this Item, the term "code of ethics" means written standards that are reasonably designed to deter wrongdoing and to promote:

- (1) Honest and ethical conduct, including the ethical handling of actual or apparent conflicts of interest between personal and professional relationships;
- (2) Full, fair, accurate, timely, and understandable disclosure in reports and documents that a registrant files with, or submits to, the Commission and in other public communications made by the registrant;
- (3) Compliance with applicable governmental laws, rules, and regulations;
- (4) The prompt internal reporting of violations of the code to an appropriate person or persons identified in the code; and
- (5) Accountability for adherence to the code.

(c) The registrant must briefly describe the nature of any amendment, during the period covered by the report, to a provision of its code of ethics that applies to the registrant's principal executive officer, principal financial officer, principal accounting officer or controller, or persons performing similar functions, regardless of whether these individuals are employed by the registrant or a third party, and that relates to any element of the code of ethics definition enumerated in paragraph (b) of this Item. The registrant must file a copy of any such amendment as an exhibit pursuant to Item 10(a), unless the registrant has elected to satisfy paragraph (f) of this Item by posting its code of ethics on its website pursuant to paragraph (f)(2) of this Item, or by undertaking to provide its code of ethics to any person without charge, upon request, pursuant to paragraph (f)(3) of this Item.

The registrant has made no amendments to the code of ethics during the period covered by this report.

(d) If the registrant has, during the period covered by the report, granted a waiver, including an implicit waiver, from a provision of the code of ethics to the registrant's principal executive officer, principal financial officer, principal accounting officer or controller, or persons performing similar functions, regardless of whether these individuals are employed by the registrant or a third party, that relates to one or more of the items set forth in paragraph (b) of this Item, the registrant must briefly describe the nature

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of the waiver, the name of the person to whom the waiver was granted, and the date of the waiver.

Not applicable.

(e) If the registrant intends to satisfy the disclosure requirement under paragraph (c) or (d) of this Item regarding an amendment to, or a waiver from, a provision of its code of ethics that applies to the registrant's principal executive officer, principal financial officer, principal accounting officer or controller, or persons performing similar functions and that relates to any element of the code of ethics definition enumerated in paragraph (b) of this Item by posting such information on its Internet website, disclose the registrant's Internet address and such intention.

Not applicable.

(f) The registrant must:

(1) File with the Commission, pursuant to Item 10(a), a copy of its code of ethics that applies to the registrant's principal executive officer, principal financial officer, principal accounting officer or controller, or persons performing similar functions, as an exhibit to its annual report on this Form N-CSR;

(2) Post the text of such code of ethics on its Internet website and disclose, in its most recent report on this Form N-CSR, its Internet address and the fact that it has posted such code of ethics on its Internet website; or

(3) Undertake in its most recent report on this Form N-CSR to provide to any person without charge, upon request, a copy of such code of ethics and explain the manner in which such request may be made.
See Item 10(2)

ITEM 3. AUDIT COMMITTEE FINANCIAL EXPERT.

(a) (1) Disclose that the registrant's board of trustees has determined that the registrant either:

- (i) Has at least one audit committee financial expert serving on its audit committee; or
- (ii) Does not have an audit committee financial expert serving on its audit committee.

The registrant's Board of Trustees has determined that the registrant has at least one audit committee financial expert.

(2) If the registrant provides the disclosure required by paragraph (a)(1)(i) of this Item, it must disclose the name of the audit committee financial expert and whether that person is "independent." In order to be considered "independent" for purposes of this Item, a member of an audit committee may not, other than in his or her capacity as a member of the audit committee, the board of trustees, or any other board committee:

- (i) Accept directly or indirectly any consulting, advisory, or other compensatory fee from the issuer; or
- (ii) Be an "interested person" of the investment company as defined in Section 2(a)(19) of the Act (15 U.S.C. 80a-2(a)(19)).

Ms. Marguerite A. Piret, an independent trustee, is such an audit committee

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financial expert.

(3) If the registrant provides the disclosure required by paragraph (a) (1) (ii) of this Item, it must explain why it does not have an audit committee financial expert.

Not applicable.

ITEM 4. PRINCIPAL ACCOUNTANT FEES AND SERVICES.

(a) Disclose, under the caption AUDIT FEES, the aggregate fees billed for each of the last two fiscal years for professional services rendered by the principal accountant for the audit of the registrant's annual financial statements or services that are normally provided by the accountant in connection with statutory and regulatory filings or engagements for those fiscal years.

Audit Fees

Fees for audit services provided to the Trust, including fees associated with the filings to update its Form N-2 and issuance of comfort letters, totaled approximately \$22,900 in 2005 and \$59,000 in 2004.

(b) Disclose, under the caption AUDIT-RELATED FEES, the aggregate fees billed in each of the last two fiscal years for assurance and related services by the principal accountant that are reasonably related to the performance of the audit of the registrant's financial statements and are not reported under paragraph (a) of this Item. Registrants shall describe the nature of the services comprising the fees disclosed under this category.

Audit-Related Fees

Fees for the Trusts audit-related services totaled approximately \$8,000 in 2005 and \$22,500 in 2004, which were related to the issuance of agreed upon procedures report to the rating agencies and the review of the 2004 semi-annual financial statements.

(c) Disclose, under the caption TAX FEES, the aggregate fees billed in each of the last two fiscal years for professional services rendered by the principal accountant for tax compliance, tax advice, and tax planning. Registrants shall describe the nature of the services comprising the fees disclosed under this category.

Tax Fees

Fees for tax compliance services, primarily for tax returns, totaled approximately \$6,000 and \$3,600 for 2005 and 2004, respectively.

(d) Disclose, under the caption ALL OTHER FEES, the aggregate fees billed in each of the last two fiscal years for products and services provided by the principal accountant, other than the services reported in paragraphs (a) through (c) of this Item. Registrants shall describe the nature of the services comprising the fees disclosed under this category.

Other Fees

There were no other services provided to the Trust during the fiscal years ended April 30, 2005 and 2004.

(e) (1) Disclose the audit committee's pre-approval policies and procedures described in paragraph (c) (7) of Rule 2-01 of Regulation S-X.

PIONEER FUNDS

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APPROVAL OF AUDIT, AUDIT-RELATED, TAX AND OTHER SERVICES PROVIDED BY THE INDEPENDENT AUDITOR

SECTION I - POLICY PURPOSE AND APPLICABILITY

The Pioneer Funds recognize the importance of maintaining the independence of their outside auditors. Maintaining independence is a shared responsibility involving Pioneer Investment Management, Inc ("PIM"), the audit committee and the independent auditors.

The Funds recognize that a Fund's independent auditors: 1) possess knowledge of the Funds, 2) are able to incorporate certain services into the scope of the audit, thereby avoiding redundant work, cost and disruption of Fund personnel and processes, and 3) have expertise that has value to the Funds. As a result, there are situations where it is desirable to use the Fund's independent auditors for services in addition to the annual audit and where the potential for conflicts of interests are minimal. Consequently, this policy, which is intended to comply with Rule 210.2-01(C) (7), sets forth guidelines and procedures to be followed by the Funds when retaining the independent audit firm to perform audit, audit-related tax and other services under those circumstances, while also maintaining independence.

Approval of a service in accordance with this policy for a Fund shall also constitute approval for any other Fund whose pre-approval is required pursuant to Rule 210.2-01(c) (7) (ii).

In addition to the procedures set forth in this policy, any non-audit services that may be provided consistently with Rule 210.2-01 may be approved by the Audit Committee itself and any pre-approval that may be waived in accordance with Rule 210.2-01(c) (7) (i) (C) is hereby waived.

Selection of a Fund's independent auditors and their compensation shall be determined by the Audit Committee and shall not be subject to this policy.

SECTION II - POLICY

| SERVICE CATEGORY | SERVICE CATEGORY DESCRIPTION | SPECIFIC PRE-APPROVED SERVICE SUBCATEGORIES |
|----------------------------|--|--|
| I. AUDIT SERVICES | Services that are directly related to performing the independent audit of the Funds | <ul style="list-style-type: none">o Accounting research assistanceo SEC consultation, registration statements, and reportingo Tax accrual related matterso Implementation of new accounting standardso Compliance letters (e.g. rating agency letters)o Regulatory reviews and assistance regarding financial matterso Semi-annual reviews (if requested)o Comfort letters for closed end offerings |
| II. AUDIT-RELATED SERVICES | Services which are not prohibited under Rule 210.2-01(C) (4) (the "Rule") and are related extensions of the audit services support the | <ul style="list-style-type: none">o AICPA attest and agreed-upon procedureso Technology control assessmentso Financial reporting control assessmentso Enterprise security architecture assessment |

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audit, or use the knowledge/expertise gained from the audit procedures as a foundation to complete the project. In most cases, if the Audit-Related Services are not performed by the Audit firm, the scope of the Audit Services would likely increase. The Services are typically well-defined and governed by accounting professional standards (AICPA, SEC, etc.)

AUDIT COMMITTEE APPROVAL POLICY

AUDIT COMMITTEE REPORTING POLICY

o "One-time" pre-approval for the audit period for all pre-approved specific service subcategories. Approval of the independent auditors as auditors for a Fund shall constitute pre approval for these services.

o A summary of all such services and related fees reported at each regularly scheduled Audit Committee meeting.

o "One-time" pre-approval for the fund fiscal year within a specified dollar limit for all pre-approved specific service subcategories

o A summary of all such services and related fees (including comparison to specified dollar limits) reported quarterly.

o Specific approval is needed to exceed the pre-approved dollar limit for these services (see general Audit Committee approval policy below for details on obtaining specific approvals)

o Specific approval is needed to use the Fund's auditors for Audit-Related Services not denoted as "pre-approved", or to add a specific service subcategory as "pre-approved"

SECTION III - POLICY DETAIL, CONTINUED

SERVICE CATEGORY

SERVICE CATEGORY DESCRIPTION

SPECIFIC PRE-APPROVED SERVICE SUBCATEGORIES

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| | | |
|--------------------------|--|---|
| <p>III. TAX SERVICES</p> | <p>Services which are not prohibited by the Rule, if an officer of the Fund determines that using the Fund's auditor to provide these services creates significant synergy in the form of efficiency, minimized disruption, or the ability to maintain a desired level of confidentiality.</p> | <ul style="list-style-type: none"> o Tax planning and support o Tax controversy assistance o Tax compliance, tax returns, excise tax returns and support o Tax opinions |
|--------------------------|--|---|

| AUDIT COMMITTEE APPROVAL POLICY | AUDIT COMMITTEE REPORTING POLICY |
|--|---|
| <ul style="list-style-type: none"> o "One-time" pre-approval for the fund fiscal year within a specified dollar limit o Specific approval is needed to exceed the pre-approved dollar limits for these services (see general Audit Committee approval policy below for details on obtaining specific approvals) o Specific approval is needed to use the Fund's auditors for tax services not denoted as pre-approved, or to add a specific service subcategory as "pre-approved" | <ul style="list-style-type: none"> o A summary of all such services and related fees (including comparison to specified dollar limits) reported quarterly. |

SECTION III - POLICY DETAIL, CONTINUED

| SERVICE CATEGORY | SERVICE CATEGORY DESCRIPTION | SPECIFIC PRE-APPROVED SERVICE SUBCATEGORIES |
|---|---|--|
| <p>IV. OTHER SERVICES A. SYNERGISTIC, UNIQUE QUALIFICATIONS</p> | <p>Services which are not prohibited by the Rule, if an officer of the Fund determines that using the Fund's auditor to provide these services creates significant synergy in</p> | <ul style="list-style-type: none"> o Business Risk Management support o Other control and regulatory compliance projects |

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the form of efficiency,
 minimized disruption,
 the ability to maintain a
 desired level of
 confidentiality, or where
 the Fund's auditors
 possess unique or superior
 qualifications to provide
 these services, resulting
 in superior value and
 results for the Fund.

AUDIT COMMITTEE APPROVAL POLICY

AUDIT COMMITTEE
 REPORTING POLICY

- | | |
|---|---|
| <ul style="list-style-type: none"> o "One-time" pre-approval for the fund fiscal year within a specified dollar limit o Specific approval is needed to exceed the pre-approved dollar limits for these services (see general Audit Committee approval policy below for details on obtaining specific approvals) o Specific approval is needed to use the Fund's auditors for "Synergistic" or "Unique Qualifications" Other Services not denoted as pre-approved to the left, or to add a specific service subcategory as "pre-approved" | <ul style="list-style-type: none"> o A summary of all such services and related fees (including comparison to specified dollar limits) reported quarterly. |
|---|---|

SECTION III - POLICY DETAIL, CONTINUED

| SERVICE CATEGORY | SERVICE CATEGORY DESCRIPTION | SPECIFIC PROHIBITED SERVICE SUBCATEGORIES |
|---------------------|--|---|
| PROHIBITED SERVICES | Services which result in the auditors losing independence status under the Rule. | <ol style="list-style-type: none"> 1. Bookkeeping or other services related to the accounting records or financial statements of the audit client* 2. Financial information systems design and implementation* 3. Appraisal or valuation services, fairness* opinions, or contribution-in-kind reports |

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4. Actuarial services (i.e., setting actuarial reserves versus actuarial audit work)*
5. Internal audit outsourcing services*
6. Management functions or human resources
7. Broker or dealer, investment advisor, or investment banking services
8. Legal services and expert services unrelated to the audit
9. Any other service that the Public Company Accounting Oversight Board determines, by regulation, is impermissible

AUDIT COMMITTEE APPROVAL POLICY

- o These services are not to be performed with the exception of the(*) services that may be permitted if they would not be subject to audit procedures at the audit client (as defined in rule 2-01(f)(4)) level the firm providing the service.

AUDIT COMMITTEE REPORTING POLICY

- o A summary of all services and related fees reported at each regularly scheduled Audit Committee meeting will serve as continual confirmation that has not provided any restricted services.

GENERAL AUDIT COMMITTEE APPROVAL POLICY:

- o For all projects, the officers of the Funds and the Fund's auditors will each make an assessment to determine that any proposed projects will not impair independence.
- o Potential services will be classified into the four non-restricted service categories and the "Approval of Audit, Audit-Related, Tax and Other Services" Policy above will be applied. Any services outside the specific pre-approved service subcategories set forth above must be specifically approved by the Audit Committee.
- o At least quarterly, the Audit Committee shall review a report summarizing the services by service category, including fees, provided by the Audit firm as set forth in the above policy.

(2) Disclose the percentage of services described in each of paragraphs (b) through (d) of this Item that were approved by the audit committee pursuant to paragraph (c) (7) (i) (C) of Rule 2-01 of Regulation S-X.

Non-Audit Services

Beginning with non-audit service contracts entered into on or after May 6, 2003, the effective date of the new SEC pre-approval rules, the Trusts audit committee is required to pre-approve services to affiliates defined by SEC rules to the extent that the services are determined to have a direct impact on the operations or financial reporting of the Trust. For the

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years ended April 30, 2005 and 2004, there were no services provided to an affiliate that required the Trusts audit committee pre-approval.

(f) If greater than 50 percent, disclose the percentage of hours expended on the principal accountant's engagement to audit the registrant's financial statements for the most recent fiscal year that were attributed to work performed by persons other than the principal accountant's full-time, permanent employees.

N/A

(g) Disclose the aggregate non-audit fees billed by the registrant's accountant for services rendered to the registrant, and rendered to the registrant's investment adviser (not including any sub-adviser whose role is primarily portfolio management and is subcontracted with or overseen by another investment adviser), and any entity controlling, controlled by, or under common control with the adviser that provides ongoing services to the registrant for each of the last two fiscal years of the registrant.

The Fund's independent auditor, Ernst & Young LLP ("E&Y"), has advised the Securities and Exchange Commission, the Public Company Accounting Oversight Board, and the Audit Committee of the Fund's Board of Trustees that certain non-audit work performed by E&Y's China affiliate raised questions regarding E&Y's independence with respect to its performance of audit services for the Fund. In July 2004, E&Y became aware that member firms in China ("E&Y China") provided certain tax services to offices of UniCredito Italiano, S.p.A. ("UCI"), a member of the Fund's Investment Company Complex. The services included receipt and disbursement of monies transferred to E&Y China by UCI in payment of individual expatriate income taxes due on returns prepared by E&Y China for certain UCI employees located in China from October 1998 to May 2003. E&Y became auditors of the Fund in May 2002. These expatriate tax services were discontinued in May 2003. The fees received by E&Y China for all such services totaled \$3,685.

The Fund's Audit Committee and E&Y have discussed the matter, including the nature of the services provided, the personnel involved in providing the services and the fees received by E&Y for performing the services. E&Y has informed the Audit Committee that based on its internal reviews and the de minimis nature of the services provided and fees received, it does not believe its independence with respect to the Fund has been impaired.

The aggregate non-audit fees for the Trust and affiliates, as previously defined, totaled approximately \$15,100 in 2005 and \$26,100 in 2004. These fees include services provided prior to May 6, 2003, the effective date of the pre-approval process.

(h) Disclose whether the registrant's audit committee of the board of trustees has considered whether the provision of non-audit services that were rendered to the registrant's investment adviser (not including any subadviser whose role is

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primarily portfolio management and is subcontracted with or overseen by another investment adviser), and any entity controlling, controlled by, or under common control with the investment adviser that provides ongoing services to the registrant that were not pre-approved pursuant to paragraph (c)(7)(ii) of Rule 2-01 of Regulation S-X is compatible with maintaining the principal accountant's independence.

The Trust's audit committee of the Board of Trustees has considered whether the provision of non-audit services that were rendered to the Affiliates (as defined) that were not pre-approved pursuant to paragraph (c)(7)(ii) of Rule 2-01 of Regulation S-X is compatible with maintaining the principal accountant's independence.

ITEMS 5-6. [RESERVED]

ITEM 7. DISCLOSURE OF PROXY VOTING POLICIES AND PROCEDURES FOR CLOSED-END MANAGEMENT INVESTMENT COMPANIES.

A closed-end management investment company that is filing an annual report on this Form N-CSR must, unless it invests exclusively in non-voting securities, describe the policies and procedures that it uses to determine how to vote proxies relating to portfolio securities, including the procedures that the company uses when a vote presents a conflict between the interests of its shareholders, on the one hand, and those of the company's investment adviser; principal underwriter; or any affiliated person (as defined in Section 2(a)(3) of the Investment Company Act of 1940 (15 U.S.C. 80a-2(a)(3)) and the rules thereunder) of the company, its investment adviser, or its principal underwriter, on the other. Include any policies and procedures of the company's investment adviser, or any other third party, that the company uses, or that are used on the company's behalf, to determine how to vote proxies relating to portfolio securities.

ITEM 8. [RESERVED]

ITEM 9. CONTROLS AND PROCEDURES.

(a) Disclose the conclusions of the registrant's principal executive officer or officers and principal financial officer or officers, or persons performing similar functions, about the effectiveness of the registrant's disclosure controls and procedures (as defined in Rule 30a-2(c) under the Act (17 CFR 270.30a-2(c))) based on their evaluation of these controls and procedures as of a date within 90 days of the filing date of the report that includes the disclosure required by this paragraph.

The registrant's principal executive officer and principal financial officer have concluded, that the registrant's disclosure controls and procedures are effective based on their evaluation of these controls and procedures as of a date within 90 days of the filing date of this report.

(b) Disclose whether or not there were significant changes in the registrant's internal controls or in other factors that could significantly affect these controls subsequent to the date of their evaluation, including any corrective actions with regard to significant deficiencies and material weaknesses.

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There were no significant changes in the registrant's internal controls or in other factors that could significantly affect these controls subsequent to the date of their evaluation, including any corrective actions with regard to significant deficiencies and material weaknesses.

ITEM 10. EXHIBITS.

File the exhibits listed below as part of this Form. Letter or number the exhibits in the sequence indicated.

(a) Any code of ethics, or amendment thereto, that is the subject of the disclosure required by Item 2, to the extent that the registrant intends to satisfy the Item 2 requirements through filing of an exhibit.

(b) A separate certification for each principal executive officer and principal financial officer of the registrant as required by Rule 30a-2 under the Act (17 CFR 270.30a-2).

Filed herewith.

SIGNATURES

[See General Instruction F]

Pursuant to the requirements of the Securities Exchange Act of 1934 and the Investment Company Act of 1940, the registrant has duly caused this report to be signed on its behalf by the undersigned, thereunto duly authorized.

(Registrant) Pioneer Municipal High Income Trust

By (Signature and Title)* /s/ John F. Cogan, Jr.
John F. Cogan, Jr, President

Date June 28, 2005

Pursuant to the requirements of the Securities Exchange Act of 1934 and the Investment Company Act of 1940, this report has been signed below by the following persons on behalf of the registrant and in the capacities and on the dates indicated.

By (Signature and Title)* /s/ John F. Cogan, Jr.
John F. Cogan, Jr., President

Date June 28, 2005

By (Signature and Title)* /s/ Vincent Nave
Vincent Nave, Treasurer

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Date June 28, 2005

* Print the name and title of each signing officer under his or her signature.