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PIONEER MUNICIPAL HIGH INCOME TRUST  
Form N-CSR  
July 01, 2004

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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, 2004

Date of reporting period: May 1, 2003 through April 30, 2004

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.

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ITEM 1. REPORTS TO SHAREOWNERS.

PIONEER  
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MUNICIPAL  
HIGH  
INCOME  
TRUST

Annual  
Report

4/30/04

[LOGO] Pioneer  
Investments

## Table of Contents

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|   |    |
|---|----|
| Letter to Shareowners                                   | 1  |
| Portfolio Summary                                       | 2  |
| Performance Update                                      | 3  |
| Portfolio Management Discussion                         | 4  |
| Schedule of Investments                                 | 6  |
| Financial Statements                                    | 15 |
| Notes to Financial Statements                           | 19 |
| Report of Independent Registered Public Accounting Firm | 27 |
| The Pioneer Family of Mutual Funds                      | 28 |
| Trustees, Officers and Service Providers                | 29 |

Pioneer Municipal High Income Trust

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LETTER TO SHAREOWNERS 4/30/04

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Dear Shareowner,

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Last year's stock market rally carried over into early 2004 but ran out of steam as investors reassessed the dramatic rise in stock valuations. The technology-rich NASDAQ Composite Index, having risen the fastest, was the first to feel pressure; the Dow Jones Industrial Average and Standard & Poor's 500 soon gave up some gains as well. Heading into April, these major indicators were little changed from year-end levels but well ahead of where they stood a year ago.

In general terms, smaller companies outperformed large companies and emerging markets outpaced developed countries, as both benefited from weakness in the U.S. dollar. Corporate bonds, here and overseas, recorded strong gains. U.S. Treasury issues also performed well, as the Federal Reserve Board signaled that it was in no hurry to raise interest rates, given the mixed economic data it was seeing.

Those mixed economic reports were also responsible for the stock market's sluggishness. While corporate profits expanded at a healthy rate, unemployment remained high and consumer confidence dropped sharply in February. Increased productivity, a company's ability to produce more goods or services for each

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hour worked, was a major factor in the disappointing pace of job creation. However, jobs data improved markedly in March when the government reported U.S. employers added over 300,000 jobs, the largest figure in years; at the same time, January and February numbers were revised upward. Payroll expansion reached into most sectors, while employment held steady in manufacturing after a long period of declines. The markets reacted positively to the jobs report. We believe that renewed hiring means companies are optimistic about the outlook for profits in the months ahead. In fact, many businesses are building up inventories in expectation of increased product demand.

The key drivers of the expansion, low interest rates and reduced federal income taxes, remain in place. Consequently, we think the U.S. economy retains impressive growth potential through the rest of this year. An expanding economy could have implications for the way your portfolio is balanced, so an appointment with your professional financial advisor may well be in order.

More growth choices from Pioneer

When you talk to your adviser, ask to hear about the Pioneer Oak Ridge and Pioneer Papp Funds. These six additions to our product lineup are designed to broaden your opportunities to pursue growth. Please consider each fund's investment objectives, 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, call 1-800-225-6292 or visit our website at [www.pioneerfunds.com](http://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.

1

Pioneer Municipal High Income Trust

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PORTFOLIO SUMMARY 4/30/04  
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Portfolio Diversification

-----  
(As a percentage of total investment portfolio)

[DATA BELOW IS REPRESENTED BY A PIE CHART IN THE ORIGINAL REPORT]

|                   |       |
|-------------------|-------|
| Health            | 25.2% |
| Airport           | 18.8% |
| Insured           | 14.7% |
| Tobacco           | 9.7%  |
| Pollution Control | 7.2%  |
| Education         | 6.9%  |

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|                    |      |
|--------------------|------|
| Power              | 5.3% |
| Development        | 4.1% |
| Other              | 1.8% |
| Facilities         | 1.7% |
| General Obligation | 1.7% |
| Transportation     | 1.5% |
| Housing            | 1.2% |
| Utilities          | 0.2% |

### Portfolio Maturity

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

[DATA BELOW IS REPRESENTED BY A PIE CHART IN THE ORIGINAL REPORT]

|            |       |
|------------|-------|
| 10+ years  | 40.5% |
| 8-10 years | 9.0%  |
| 6-8 years  | 28.5% |
| 3-6 years  | 14.1% |
| 1-3 years  | 5.4%  |
| 0-1 years  | 2.5%  |

### Quality Distribution

-----  
 (As a percentage of long-term holdings)

[DATA BELOW IS REPRESENTED BY A PIE CHART IN THE ORIGINAL REPORT]

|                 |       |
|-----------------|-------|
| AAA             | 15.9% |
| AA              | 7.0%  |
| A               | 3.2%  |
| BBB             | 30.1% |
| BB & Lower      | 43.2% |
| Cash Equivalent | 0.6%  |

### 10 Largest Holdings

-----  
 (As a percentage of long-term holdings).\*

|       |  |       |
|-------|--|-------|
| 1.    | Greenville County School District, 5.5%, 12/1/28                                       | 3.68% |
| ----- |  |       |
| 2.    | Allegheny County Hospital Development Authority Revenue,<br>9.25%, 11/15/30            | 3.30  |
| ----- |  |       |
| 3.    | Minneapolis/St. Paul Metropolitan Airports, 7.0%, 4/1/25                               | 2.90  |
| ----- |  |       |
| 4.    | Tobacco Settlement Financing Corp., 6.75%, 6/1/39                                      | 2.42  |
| ----- |  |       |
| 5.    | Birmingham Alabama General Obligation, 5.0%, 12/1/32                                   | 2.39  |
| ----- |  |       |
| 6.    | New Jersey Economic Development Authority Revenue,<br>6.25%, 9/15/29                   | 2.20  |
| ----- |  |       |
| 7.    | Metropolitan Pier & Exposition Authority Dedicated State Tax<br>Revenue, 0.0%, 6/15/22 | 2.11  |
| ----- |  |       |
| 8.    | Texas State Turnpike Authority Revenue, 0.0%, 8/15/16                                  | 2.09  |
| ----- |  |       |
| 9.    | Johnson City Health & Educational Facilities Board Hospital<br>Revenue, 7.5%, 7/1/33   | 1.89  |

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|     |   |      |
|-----|---|------|
| 10. | Western Generation Agency Cogeneration Project Revenue,<br>7.125%, 1/1/21 | 1.82 |
|-----|---|------|

\*This list excludes money market and derivative investments. Trust holdings will vary for other periods.

2

Pioneer Municipal High Income Trust

PERFORMANCE UPDATE 4/30/04

### Share Prices and Distributions

Market Value  
per Common Share

|  |         |         |
|--|---------|---------|
|  | 4/30/04 | 7/21/03 |
|  | \$13.70 | \$15.00 |

Net Asset Value  
per Common Share

|  |         |         |
|--|---------|---------|
|  | 4/30/04 | 7/21/03 |
|  | \$14.76 | \$14.33 |

Distributions per Share  
(7/21/03 - 4/30/04)

|  |                     |                             |                            |
|--|---------------------|-----------------------------|----------------------------|
|  | Income<br>Dividends | Short-Term<br>Capital Gains | Long-Term<br>Capital Gains |
|  | \$0.72              | \$ -                        | \$ -                       |

### 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 at public offering price, compared to that of the Lehman Brothers Municipal Bond Index and Lehman Brothers Non-Investment Grade Municipal Bond Index.

Cumulative Total Returns  
(As of April 30, 2004)

|                                      |                    |                  |
|--------------------------------------|--------------------|------------------|
|                                      | Net Asset<br>Value | Market<br>Price* |
| Period<br>Life-of-Trust<br>(7/21/03) | 8.14%              | -4.11%           |

\* When net asset value (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.

[DATA BELOW IS REPRESENTED BY A MOUNTAIN CHART IN THE ORIGINAL REPORT]

|   |        |          |
|---|--------|----------|
|   | 7/03   | 4/04     |
|   | -----  | -----    |
| Pioneer Municipal High Income Trust*                      | 10,000 | \$ 9,589 |
| Lehman Brothers Municipal Bond Index                      | 10,000 | \$10,441 |
| Lehman Brothers Non-Investment Grade Municipal Bond Index | 10,000 | \$11,014 |

Performance data shown represents past performance. Past performance does not guarantee future results. Investment return and principal value fluctuate, and shares, when redeemed, may be worth more or less than their original

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cost. Current performance may be lower or higher than the performance shown. For performance data that is current to the most recent month-end, please call 1-800-225-6292 or visit our website [www.pioneerfunds.com](http://www.pioneerfunds.com).

- + Index comparison begins July 31, 2003. The Lehman Brothers Municipal Bond Index is a widely recognized, unmanaged measure of approximately 15,000 municipal bonds. Bonds in the Index have a minimum credit rating of BBB, were part of at least a \$50 million issuance made within the past five years and have a maturity of at least two years. 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 the Index.

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

3

Pioneer Municipal High Income Trust

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### PORTFOLIO MANAGEMENT DISCUSSION 4/30/04

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This annual report covers the period from the Trust's inception on July 21, 2003, through April 30, 2004. In this time frame, investors in Pioneer Municipal High Income Trust were rewarded with a relatively high amount of tax-free income as well as a substantial amount of price appreciation. In the following interview, David Eurkus, a member of the Trust's management team, reviews the Trust's investment process, strategy and outlook.

Q: How did the Trust perform from inception on July 21, 2003 through April 30, 2004?

A: Since inception, Pioneer Municipal High Income Trust returned 8.14% at net asset value and -4.11% at market price. As of April 30, 2004, the Trust was selling at a discount of market price to net asset value of 7.2%. From July 31, 2003, through April 30, 2004, the Lehman Brothers Municipal Bond Index returned 4.41% and the Lehman Brothers Non-Investment Grade Municipal Bond Index returned 8.92%. At the end of the period, the Trust held 106 issues in 31 states. On April 30, 2004, the Trust's 30-day SEC yield was 7.83%.

Q: What strategies do you use in managing the Trust?

A: We use a top down/bottom-up approach. We consider macroeconomic factors, such as the strength of the economy, the potential for a change in the level of inflation and Federal Reserve monetary policy. On a micro level, we analyze yields compared to U.S. Treasuries or corporate issuers; we look at the strengths of specific economic sectors and review each issuer's credit rating and liquidity. Our extensive research has resulted in the construction of a diversified portfolio of securities with varying maturities and credit quality from a number of sectors and issuers. At the end of the period, 56.2% of the Trust's assets were invested in investment-grade securities - those rated BBB or higher; 43.2% were in

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securities rated below investment grade; and 0.6% of the Trust's assets were in cash equivalents. Overall, the average quality of the Trust was Baa/BBB.

We allocated a portion of the Trust's assets to economically sensitive market sectors, areas in which the underlying credit quality of fixed-income securities tends to improve during periods of economic recovery. These included hospital/health care (25.2% of assets), transportation (20.0% of assets) and power/energy (5.3% of assets). Over the past few months, we added to the Trust's position in education bonds (3.3% of assets). The educa-

4

Pioneer High Income Trust

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tion sector has seen increased bond issuance, as applications to secondary schools and colleges continue to rise. We took advantage of the Trust's ability to invest in below investment-grade securities, emphasizing sectors whose business prospects would benefit from a stronger economy. Such securities had discounted prices and historically high yields.

Q: During the period, the investment environment changed dramatically. How did this change affect the Trust?

A: From July 2003 through February 2004, economic growth was fairly modest. Inflation was low, interest rates continued to decline and bond prices rose. Against this backdrop, the Trust benefited from the capital appreciation that rising bond prices provided and from a relatively high monthly income stream.

In March, economic statistics began to indicate that the economy was stronger than had been expected. Job growth was robust, inflation began to accelerate and investors assumed that the Federal Reserve would raise interest rates sooner rather than later. In this environment, market interest rates moved substantially higher, triggering a rapid and significant decline in the market value of both taxable and tax-free bonds. While the Trust suffered from the general downturn in bond values, its combination of investment-grade and below investment-grade securities allowed it to continue to provide shareholders with an attractive level of tax-free income.

Q: What is your outlook over the next six months?

A: We are optimistic about the economy and the Trust. We expect the positive trend in GDP growth to continue; and while the Federal Reserve may boost rates, we do not anticipate a significant increase in the near term. We believe the Trust's diversification among economic sectors and geographic regions and its mix of investment-grade quality and higher-yielding bonds have the potential to continue to generate increased income as well as capital appreciation even in a rising interest-rate environment.

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performance is no guarantee of future results, and there is no guarantee that market forecasts discussed will be realized.

5

Pioneer Municipal High Income Trust

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 SCHEDULE OF INVESTMENTS 4/30/04  
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| Principal<br>Amount | S&P/<br>Moody's<br>Ratings<br>(unaudited) |   | Value                           |
|---------------------|---|---|---------------------------------|
|                     |   | TAX EXEMPT OBLIGATIONS - 127.5% OF NET ASSETS   |                                 |
|                     |   | Alabama - 3.5%  |                                 |
| \$10,000,000        | AAA/Aaa                                   | Birmingham Alabama General Obligation, 5.0%,<br>12/1/32   | \$ 9,970,900                    |
| 1,500,000           | BBB/NR                                    | Camden Alabama Industrial Development Board,<br>6.125%, 12/1/24   | 1,574,745                       |
|                     |   |   | -----<br>\$ 11,545,645<br>----- |
|                     |   | Arizona - 5.8%  |                                 |
| 5,000,000           | B+/Ba3                                    | Apache County Industrial Development Authority,<br>5.85%, 3/1/28  | \$ 4,694,500                    |
| 5,000,000           | B+/Ba3                                    | Apache County Industrial Development Authority,<br>5.875%, 3/1/33   | 4,687,150                       |
| 3,000,000           | NR/NR                                     | Maricopa County Industrial Development Authority,<br>7.875%, 4/1/27                                       | 3,079,890                       |
| 5,880,000           | AA/Aa2                                    | Salt River Project Agriculture Improvement and<br>Power District Electric System Revenue, 5.0%,<br>1/1/31 | 5,883,704                       |
| 500,000             | NR/Baa2                                   | Yavapai County Industrial Development Authority,<br>6.0%, 8/1/33  | 505,605                         |
|                     |   |   | -----<br>\$ 18,850,849<br>----- |
|                     |   | California - 13.0%  |                                 |
| 7,270,000           | BBB/Baa1                                  | California State General Obligation, 5.25%,<br>2/1/28   | \$ 7,176,072                    |
| 5,150,000           | BBB/Baa3                                  | Golden State Tobacco Securitization Corp.,<br>7.8%, 6/1/42  | 5,440,820                       |
| 7,000,000           | BBB/Baa3                                  | Golden State Tobacco Securitization Corp.,<br>7.875%, 6/1/42  | 7,430,150                       |
| 6,500,000           | B-/Caa2                                   | Los Angeles Regional Airports Improvement Corp.<br>Lease Revenue, 7.5%, 12/1/24                           | 5,537,220                       |
| 6,000,000           | AAA/Aaa                                   | Palm Desert Financing Authority Tax Allocation<br>Revenue, 5.0%, 4/1/30                                   | 5,965,260                       |
| 3,000,000           | AAA/Aaa                                   | San Diego Unified School District, 5.0%, 7/1/25   | 3,012,420                       |
| 2,500,000           | AAA/Aaa                                   | University of California Revenue, 5.0%, 5/15/25   | 2,514,400                       |
| 7,000,000           | B+/NR                                     | Valley Health System Hospital Revenue, 6.5%,<br>5/15/25   | 5,376,840                       |
|                     |   |   | -----<br>\$ 42,453,182<br>----- |



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

### Pioneer Municipal High Income Trust

| Principal<br>Amount | S&P/<br>Moody's<br>Ratings<br>(unaudited) |   |          |
|---------------------|---|---|----------|
|                     |   | Connecticut - 1.6%  |          |
| \$2,205,000         | BB/Ba1                                    | Connecticut State Health & Educational Facilities Authority Revenue, 5.375%, 7/1/17 | \$ 1,82  |
| 4,400,000           | BB/Ba1                                    | Connecticut State Health & Educational Facilities Authority Revenue, 5.5%, 7/1/27   | 3,37     |
|                     |   |   | \$ 5,20  |
|                     |   | District of Columbia - 3.5%   |          |
| 5,000,000           | BBB/Baa3                                  | District of Columbia Tobacco Settlement Financing Corp., 6.5%, 5/15/33              | \$ 4,55  |
| 7,325,000           | BBB/Baa3                                  | District of Columbia Tobacco Settlement Financing Corp., 6.75%, 5/15/40             | 6,81     |
|                     |   |   | \$ 11,37 |
|                     |   | Florida - 4.5%  |          |
| 2,000,000           | NR/NR                                     | Beacon Lakes Community Development, 6.9%, 5/1/35                                    | \$ 2,02  |
| 2,300,000           | CCC/Caa3                                  | Hillsborough County Aviation Authority Revenue, 6.8%, 1/1/24                        | 1,62     |
| 1,650,000           | BBB-/Baa2                                 | Polk County Industrial Development Revenue, 5.85%, 12/1/30                          | 1,62     |
| 2,000,000           | NR/NR                                     | Seminole Tribe Convention-A, 8.95%, 10/1/33   | 2,33     |
| 1,900,000           | NR/NR                                     | Seminole Tribe Convention-A, 10.0%, 10/1/33   | 2,34     |
| 5,000,000           | NR/Baa2                                   | Tallahassee Health Facilities Revenue, 6.375%, 12/1/30                              | 4,85     |
|                     |   |   | \$ 14,81 |
|                     |   | Idaho - 1.5%  |          |
| 5,000,000           | BB+/Ba3                                   | Power County Industrial Development Corp., 6.45%, 8/1/32                            | \$ 5,01  |
|                     |   | Illinois - 4.0%   |          |
| 1,000,000           | NR/NR                                     | Centerpoint Intermodal Center, 8.0%, 6/15/23 (144A)                                 | \$ 98    |
| 2,790,000           | CCC/Caa3                                  | Chicago Illinois O'Hare International Airport, 6.45%, 5/1/18                        | 1,78     |
| 1,500,000           | NR/NR                                     | Illinois Health Facilities Authority Revenue, 6.9%, 11/15/33                        | 1,48     |
| 16,880,000 (a)      | AAA/Aaa                                   | Metropolitan Pier & Exposition Authority Dedicated State Tax Revenue, 0.0%, 6/15/22 | 8,77     |
|                     |   |   | \$ 13,01 |

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The accompanying notes are an integral part of these financial statements. 7

Pioneer Municipal High Income Trust

SCHEDULE OF INVESTMENTS 4/30/04 (continued)

| Principal Amount | S&P/<br>Moody's<br>Ratings<br>(unaudited) |   | Value                          |
|------------------|---|---|--------------------------------|
| \$2,000,000      | CCC/Caa3                                  | Indiana - 1.6%<br>East Chicago Industrial Pollution Control Revenue,<br>7.125%, 6/1/07                    | \$ 1,788,800                   |
| 4,000,000        | CCC/Caa3                                  | Indiana State Development Finance Authority<br>Revenue, 5.75%, 10/1/11                                    | 3,331,840                      |
|                  |   |   | -----<br>\$ 5,120,640<br>----- |
| 7,050,000        | CCC/Caa2                                  | Kentucky - 2.5%<br>Kenton County Airport Revenue, 7.5%, 2/1/12  | \$ 6,438,060                   |
| 1,965,000        | CCC/Caa2                                  | Kenton County Airport Revenue, 7.5%, 2/1/20   | 1,714,482                      |
|                  |   |   | -----<br>\$ 8,152,542<br>----- |
| 2,435,000        | AAA/Aaa                                   | Massachusetts - 6.0%<br>Massachusetts Health & Educational Facilities<br>Authority Revenue, 5.0%, 7/15/35 | \$ 2,447,102                   |
| 1,000,000        | AA/NR                                     | Massachusetts Health & Educational Facilities<br>Authority Revenue, 5.25%, 10/15/33                       | 1,001,570                      |
| 2,640,000        | BBB/Baa3                                  | Massachusetts Health & Educational Facilities<br>Authority Revenue, 5.75%, 7/1/28                         | 2,454,566                      |
| 3,500,000        | BBB/Baa3                                  | Massachusetts Health & Educational Facilities<br>Authority Revenue, 6.25%, 7/1/22                         | 3,590,440                      |
| 5,000,000        | BBB-/NR                                   | Massachusetts Health & Educational Facilities<br>Authority Revenue, 6.75%, 10/1/33                        | 5,094,400                      |
| 75,000           | BB/NR                                     | Massachusetts State Development Finance<br>Agency, 5.25%, 10/1/18   | 62,838                         |
| 5,055,000        | AA-/Aa3                                   | Massachusetts State Housing Finance Agency,<br>5.25%, 12/1/33   | 4,980,085                      |
|                  |   |   | -----<br>\$19,631,001<br>----- |
| 2,000,000        | NR/Ba2                                    | Michigan - 4.8%<br>Garden City Hospital Finance Authority, 5.75%,<br>9/1/17                               | \$ 1,630,600                   |
| 1,500,000        | BBB-/NR                                   | John Tolfree Health System Corp., 6.0%, 9/15/23   | 1,418,205                      |
| 4,010,000        | BBB-/Baa3                                 | Michigan State Hospital Finance Authority<br>Revenue, 6.0%, 2/1/24  | 3,935,454                      |
| 2,000,000        | NR/NR                                     | Michigan State Hospital Finance Authority<br>Revenue, 6.4%, 1/1/15  | 1,934,460                      |
| 7,690,000        | NR/NR                                     | Wayne Charter County Special Airport Facilities<br>Revenue, 6.75%, 12/1/15                                | 6,896,546                      |

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\$15,815,265  
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8 The accompanying notes are an integral part of these financial statements.

Pioneer Municipal High Income Trust

| Principal Amount | S&P/<br>Moody's<br>Ratings<br>(unaudited) |   | Value                          |
|------------------|---|---|--------------------------------|
| \$13,260,000     | NR/NR                                     | Minnesota - 4.2%<br>Minneapolis/St. Paul Metropolitan Airports, 7.0%,<br>4/1/25                     | \$12,059,440                   |
| 1,500,000        | BB/Ba2                                    | St. Paul Housing & Redevelopment Authority,<br>6.625%, 11/1/17                                      | 1,516,635                      |
|                  |   |   | -----<br>\$13,576,075<br>----- |
| 3,000,000        | BBB-/Ba1                                  | Mississippi - 0.9%<br>Mississippi Business Finance Corp. Pollution<br>Control Revenue, 5.9%, 5/1/22 | \$ 3,014,670                   |
| 5,500,000        | NR/Ba3                                    | Missouri - 1.6%<br>St. Louis Industrial Development Authority<br>Revenue, 7.25%, 12/15/35           | \$ 5,085,795                   |
| 1,000,000        | BBB-/Baa2                                 | Nevada - 1.4%<br>Clark County Industrial Development Revenue,<br>5.45%, 3/1/38                      | \$ 1,054,770                   |
| 1,850,000        | B+/NR                                     | Clark County Industrial Development Revenue,<br>5.5%, 10/1/30                                       | 1,576,644                      |
| 2,000,000        | NR/NR                                     | Nevada State Department of Business & Industry,<br>7.25%, 1/1/23                                    | 1,956,960                      |
|                  |   |   | -----<br>\$ 4,588,374<br>----- |
| 3,000,000        | AAA/Aaa                                   | New Jersey - 9.2%<br>New Jersey Economic Development Authority<br>Revenue, 5.25%, 6/15/19           | \$ 3,189,780                   |
| 2,000,000        | B/Caa2                                    | New Jersey Economic Development Authority<br>Revenue, 6.25%, 9/15/19                                | 1,642,760                      |
| 11,700,000       | B/Caa2                                    | New Jersey Economic Development Authority<br>Revenue, 6.25%, 9/15/29                                | 9,145,422                      |
| 1,000,000        | B/Caa2                                    | New Jersey Economic Development Authority<br>Revenue, 6.4%, 9/15/23                                 | 811,760                        |
| 6,150,000        | B/Caa2                                    | New Jersey Economic Development Authority<br>Revenue, 7.0%, 11/15/30                                | 5,268,767                      |
| 10,750,000       | BBB/Baa3                                  | Tobacco Settlement Financing Corp., 6.75%,<br>6/1/39  | 10,068,665                     |
|                  |   |   | -----<br>\$30,127,154<br>----- |

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The accompanying notes are an integral part of these financial statements. 9

Pioneer Municipal High Income Trust

SCHEDULE OF INVESTMENTS 4/30/04 (continued)

| Principal Amount | S&P/<br>Moody's<br>Ratings<br>(unaudited) |  | Value        |
|------------------|---|--|--------------|
| \$3,700,000      | NR/B1                                     | New Mexico - 1.2%<br>New Mexico Hospital Equipment Loan Council,<br>6.4%, 6/1/16                 | \$ 3,743,216 |
| 5,625,000        | CCC/Caa2                                  | New York - 3.3%<br>New York City Industrial Development Agency,<br>6.9%, 8/1/24                  | \$ 3,878,044 |
| 5,000,000        | AAA/Aaa                                   | New York City Trust Cultural Resources Revenue,<br>5.125%, 7/1/31                                | 5,064,550    |
| 2,000,000        | NR/NR                                     | Suffolk County Industrial Development Agency,<br>7.25%, 1/1/30                                   | 1,878,440    |
|                  |   |  | \$10,821,034 |
| 2,000,000        | AA+/Aa2                                   | North Carolina - 1.5%<br>Charlotte North Carolina Certificates of<br>Participation, 5.0%, 6/1/33 | \$ 1,975,740 |
| 4,600,000        | NR/NR                                     | Charlotte North Carolina Special Facilities<br>Revenue, 7.75%, 2/1/28                            | 2,938,250    |
|                  |   |  | \$ 4,913,990 |
| 3,000,000        | B-/B1                                     | Oklahoma - 4.2%<br>Oklahoma Development Finance Authority<br>Revenue, 5.625%, 8/15/19            | \$ 2,491,710 |
| 8,000,000        | B-/B1                                     | Oklahoma Development Finance Authority<br>Revenue, 5.625%, 8/15/29                               | 6,324,720    |
| 4,100,000        | B-/Caa2                                   | Tulsa Municipal Airport Revenue, 5.65%, 12/1/35  | 3,771,139    |
| 1,225,000        | B-/Caa2                                   | Tulsa Municipal Airport Revenue, 6.25%, 6/1/20   | 1,045,182    |
|                  |   |  | \$13,632,751 |
| 1,000,000        | NR/NR                                     | Oregon - 4.7%<br>Klamath Falls Electric Revenue, 5.75%, 1/1/13                                   | \$ 1,001,720 |
| 7,000,000        | NR/NR                                     | Klamath Falls Electric Revenue, 6.0%, 1/1/25   | 6,787,480    |
| 7,500,000        | NR/NR                                     | Western Generation Agency Cogeneration Project<br>Revenue, 7.125%, 1/1/21                        | 7,592,475    |
|                  |   |  | \$15,381,675 |

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

### Pioneer Municipal High Income Trust

| Principal Amount | S&P/<br>Moody's<br>Ratings<br>(unaudited) |   | Value                          |
|------------------|---|---|--------------------------------|
|                  |   | Pennsylvania - 10.0%  |                                |
| \$ 1,550,000     | NR/Baa1                                   | Allegheny County Hospital Development Authority Revenue, 5.125%, 5/1/25                     | \$ 1,331,419                   |
| 12,300,000       | B/B2                                      | Allegheny County Hospital Development Authority Revenue, 9.25%, 11/15/30                    | 13,730,859                     |
| 2,500,000        | BBB-/Baa2                                 | Beaver County Industrial Development Authority, 7.625%, 5/1/25                              | 2,673,825                      |
| 1,000,000        | BB-/NR                                    | Columbia County Hospital Authority Health Care Revenue, 5.9%, 6/1/29                        | 786,600                        |
| 5,000,000        | BBB/Baa3                                  | Delaware County Industrial Development Authority Revenue, 6.1%, 7/1/13                      | 5,294,750                      |
| 1,280,000        | NR/B2                                     | Langhorne Manor Borough Higher Education & Health Authority Revenue, 7.35%, 7/1/22          | 1,238,784                      |
| 2,500,000        | BBB+/NR                                   | Pennsylvania Higher Educational Facilities Authority Revenue, 5.4%, 7/15/36                 | 2,458,900                      |
| 5,000,000        | BBB-/Baa2                                 | Philadelphia Hospitals & Higher Education Facilities Authority Revenue, 6.5%, 11/15/22      | 5,002,200                      |
|                  |   |   | -----<br>\$32,517,337<br>----- |
|                  |   | South Carolina - 8.4%   |                                |
| 15,000,000       | AA-/A1                                    | Greenville County School District, 5.5%, 12/1/28  | \$15,326,550                   |
| 1,900,000        | BBB/Baa2                                  | South Carolina Jobs Economic Development Authority Revenue, 6.25%, 8/1/31                   | 1,949,951                      |
| 5,850,000        | BBB/Baa2                                  | South Carolina Jobs Economic Development Authority Revenue, 6.375%, 8/1/34                  | 6,053,288                      |
| 4,405,000        | BB-/NR                                    | South Carolina Jobs Economic Development Authority Revenue, 6.625%, 4/1/36                  | 4,185,279                      |
|                  |   |   | -----<br>\$27,515,068<br>----- |
|                  |   | Tennessee - 3.8%  |                                |
| 7,000,000        | BBB+/Baa2                                 | Johnson City Health & Educational Facilities Board Hospital Revenue, 7.5%, 7/1/33           | \$ 7,867,090                   |
| 4,480,000        | NR/Baa2                                   | Knox County Health Educational & Housing Facilities Board Hospital Revenue, 6.375%, 4/15/22 | 4,604,320                      |
|                  |   |   | -----<br>\$12,471,410<br>----- |

The accompanying notes are an integral part of these financial statements. 11

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Pioneer Municipal High Income Trust

-----  
 SCHEDULE OF INVESTMENTS 4/30/04

(continued)  
 -----

| Principal<br>Amount | S&P/<br>Moody's<br>Ratings<br>(unaudited) |   | Value                          |
|---------------------|---|---|--------------------------------|
|                     |   | Texas - 9.9%  |                                |
| \$ 6,500,000        | CCC/Caa2                                  | Alliance Airport Authority Special Facilities<br>Revenue, 7.0%, 12/1/11           | \$ 5,420,805                   |
| 5,500,000           | CCC/Caa2                                  | Dallas-Fort Worth International Airport Revenue,<br>7.125%, 11/1/26               | 3,470,775                      |
| 2,800,000           | CCC/Caa2                                  | Dallas-Fort Worth International Airport Revenue,<br>7.6%, 11/1/11                 | 2,183,972                      |
| 750,000             | CCC/Caa2                                  | Dallas-Fort Worth International Airport Revenue,<br>7.625%, 11/1/21               | 507,825                        |
| 1,000,000           | BB/NR                                     | Georgetown Health Facilities Development Corp.,<br>6.25%, 8/15/29                 | 934,690                        |
| 3,750,000           | B-/Caa2                                   | Houston Airport System Special Facilities Revenue,<br>5.7%, 7/15/29               | 2,656,800                      |
| 5,000,000           | BBB-/NR                                   | Lufkin Health Facilities Development Corp. 5.7%,<br>2/15/28                       | 4,552,650                      |
| 500,000             | BBB/Baa2                                  | Sabine River Authority Pollution Control Revenue,<br>6.15%, 8/1/22                | 519,200                        |
| 15,865,000          | AAA/Aaa                                   | Texas State Turnpike Authority Revenue, 0.0%,<br>8/15/16                          | 8,697,986                      |
| 3,000,000           | AAA/Aaa                                   | University of Texas Revenues, 5.25%, 8/15/18                                      | 3,261,540                      |
|                     |   |   | -----<br>\$32,206,243<br>----- |
|                     |   | Vermont - 0.5%  |                                |
| 1,500,000           | A-/A3                                     | Vermont Educational & Health Buildings Financing<br>Agency Revenue, 6.0%, 10/1/28 | \$ 1,634,220                   |
|                     |   | Virginia - 2.5%   |                                |
| 1,000,000           | BBB/Baa3                                  | Peninsula Ports Authority, 6.0%, 4/1/33   | \$ 1,024,720                   |
| 4,000,000           | BB/NR                                     | Pocahontas Parkway Association of Virginia Toll<br>Road Revenue, 5.5%, 8/15/28    | 3,295,520                      |
| 3,940,000           | AAA/Aaa                                   | University of Virginia Revenue, 5.0%, 6/1/33                                      | 3,959,818                      |
|                     |   |   | -----<br>\$ 8,280,058<br>----- |
|                     |   | Washington - 5.2%   |                                |
| 4,710,000           | AAA/Aaa                                   | Spokane Public Facilities District Hotel/Motel Tax<br>& Sales, 5.75%, 12/1/27     | \$ 5,101,542                   |
| 7,025,000           | BBB/Baa3                                  | Tobacco Settlement Authority Washington, 6.625%,<br>6/1/32                        | 6,500,724                      |
| 14,315,000          | AAA/Aaa                                   | Washington State General Obligation, 0.0%, 6/1/22                                 | 5,460,886                      |
|                     |   |   | -----<br>\$17,063,152<br>----- |

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

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Pioneer Municipal High Income Trust

| Principal Amount | S&P/<br>Moody's<br>Ratings<br>(unaudited) |   | Value           |
|------------------|---|---|-----------------|
| \$3,750,000      | BBB+/NR                                   | Wisconsin - 1.2%<br>Wisconsin State Health & Educational Facilities<br>Authority Revenue, 6.4%, 4/15/33         | \$ 3,932,588    |
| 5,000,000        | BB+/Ba3                                   | Wyoming - 1.5%<br>Sweetwater County Solid Waste Disposal Revenue,<br>6.9%, 9/1/24                               | \$ 5,046,400    |
|                  |   | TOTAL TAX-EXEMPT OBLIGATIONS<br>(Cost \$405,952,959)  | \$ 416,539,199  |
| Shares           |   | TAX-EXEMPT MONEY MARKET MUTUAL FUND - 0.8%<br>OF NET ASSETS<br>BlackRock Provident Institutional Municipal Fund | \$ 2,669,457    |
| 2,669,457        |   | TOTAL TAX-EXEMPT MONEY MARKET MUTUAL FUND<br>(Cost \$2,669,457)   | \$ 2,669,457    |
|                  |   | TOTAL INVESTMENTS IN SECURITIES - 128.3%<br>(Cost \$408,622,416) (b) (c) (d)                                    | \$ 419,208,656  |
|                  |   | Other Assets in Excess of Liabilities - 2.6%  | \$ 8,381,009    |
|                  |   | Preferred Shares at Redemption Value - (30.9)%  | \$(101,000,000) |
|                  |   | NET ASSETS APPLICABLE TO COMMON<br>SHAREOWNERS - 100.0%   | \$ 326,589,665  |

The accompanying notes are an integral part of these financial statements. 13

Pioneer Municipal High Income Trust

SCHEDULE OF INVESTMENTS 4/30/04

(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, 2004 the value of these securities amounted to \$980,400 or 0.3% of net assets applicable to common shareholders.

(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.

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

|                           |        |
|---------------------------|--------|
| Insured                   | 14.7%  |
| General Obligation        | 1.7    |
| Revenue Bonds:            |        |
| Health Revenue            | 25.2   |
| Airport Revenue           | 18.8   |
| Tobacco Revenue           | 9.7    |
| Pollution Control Revenue | 7.2    |
| Education Revenue         | 6.9    |
| Power Revenue             | 5.3    |
| Development Revenue       | 4.1    |
| Other                     | 1.8    |
| Facilities Revenue        | 1.7    |
| Transportation Revenue    | 1.5    |
| Housing Revenue           | 1.2    |
| Utilities Revenue         | 0.2    |
|                           | ----   |
|                           | 100.0% |
|                           | =====  |

(c) At April 30, 2004, the net unrealized gain on investments based on cost for federal income tax purposes of \$408,055,306 was as follows:

|  |              |
|--|--------------|
| Aggregate gross unrealized gain for all investments in which there is an excess of value over tax cost | \$17,062,718 |
| Aggregate gross unrealized loss for all investments in which there is an excess of tax cost over value | (5,909,368)  |
|  | -----        |
| Net unrealized gain  | \$11,153,350 |
|  | =====        |

For financial reporting purposes net unrealized gain on investments was \$10,586,240 and cost of investments aggregated \$408,622,416.

(d) As of April 30, 2004, the Trust had a capital loss carryforward of \$1,170,962 which will expire in 2012 if not utilized.

Purchases and sales of securities (excluding temporary cash investments) for the period ended April 30, 2004, aggregated \$617,237,817 and \$211,209,853, respectively.

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

Pioneer Municipal High Income Trust

-----  
 STATEMENT OF ASSETS AND LIABILITIES 4/30/04  
 -----

ASSETS:

|  |               |
|--|---------------|
| Investments in securities, at value (cost \$408,622,416) | \$419,208,656 |
| Receivables -  |               |
| Interest   | 8,553,845     |
| Unrealized appreciation on interest rate swaps           | 1,136,800     |
| Prepaid expenses   | 23,600        |
|  | -----         |
| Total assets   | \$428,922,901 |



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|                                    |              |
|------------------------------------|--------------|
| LIABILITIES:                       |              |
| Payables -                         |              |
| Offering costs payable - common    | \$ 125,049   |
| Offering costs payable - preferred | 8,181        |
| Due to custodian                   | 857,134      |
| Net interest rate swaps payable    | 59,042       |
| Due to affiliates                  | 212,352      |
| Administration fee payable         | 24,815       |
| Accrued expenses                   | 46,663       |
|                                    | -----        |
| Total liabilities                  | \$ 1,333,236 |
|                                    | -----        |

|  |               |
|--|---------------|
| PREFERRED SHARES AT REDEMPTION VALUE:                              |               |
| \$25,000 liquidation value per share applicable to<br>4,040 shares | \$101,000,000 |
|  | -----         |

|  |               |
|--|---------------|
| NET ASSETS APPLICABLE TO COMMON SHAREOWNERS: |               |
| Paid-in capital                              | \$315,038,703 |
| Accumulated net investment income            | 998,979       |
| Accumulated net realized loss on investments | (1,171,057)   |
| Net unrealized gain on investments           | 10,586,240    |
| Net unrealized gain on interest rate swaps   | 1,136,800     |
|  | -----         |
| Net assets applicable to common shareowners  | \$326,589,665 |
|  | -----         |

|   |          |
|---|----------|
| NET ASSET VALUE PER SHARE:                            |          |
| No par value, (unlimited number of shares authorized) |          |
| Based on \$326,589,665/22,120,893 common shares       | \$ 14.76 |
|   | =====    |

The accompanying notes are an integral part of these financial statements. 15

Pioneer Municipal High Income Trust

-----  
STATEMENT OF OPERATIONS  
-----

For the period 7/21/03 (commencement of operations) to 4/30/04

|                    |              |
|--------------------|--------------|
| INVESTMENT INCOME: |              |
| Interest           | \$19,910,926 |
|                    | -----        |

|                     |              |
|---------------------|--------------|
| EXPENSES:           |              |
| Management fees     | \$ 1,866,718 |
| Administration fees | 217,549      |
| Transfer agent fees | 36,442       |
| Auction agent fees  | 149,820      |
| Custodian fees      | 18,141       |
| Registration fees   | 29,516       |
| Organization costs  | 40,000       |
| Professional fees   | 54,183       |
| Printing fees       | 13,967       |
| Trustees' fees      | 6,504        |
| Miscellaneous       | 11,433       |
|                     | -----        |
| Total expenses      | \$ 2,444,273 |
|                     | -----        |

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|   |                |                |
|---|----------------|----------------|
| Reimbursement of organization costs   |                | \$ (40,000)    |
|   |                | -----          |
| Net expenses  |                | \$ 2,404,273   |
|   |                | -----          |
| Net investment income   |                | \$17,506,653   |
|   |                | -----          |
| REALIZED AND UNREALIZED GAIN (LOSS) ON INVESTMENTS AND INTEREST RATE SWAPS:           |                |                |
| Net realized loss from:   |                |                |
| Investments   | \$ (1,172,616) |                |
| Interest rate swaps   | (59,042)       | \$ (1,231,658) |
|   | -----          | -----          |
| Net unrealized gain on:   |                |                |
| Investments   | \$10,586,240   |                |
| Interest rate swaps   | 1,136,800      | \$11,723,040   |
|   | -----          | -----          |
| Net gain on investments and interest rate swaps                                       |                | \$10,491,382   |
|   |                | -----          |
| DISTRIBUTIONS TO PREFERRED SHAREOWNERS FROM NET INVESTMENT INCOME                     |                |                |
|   |                | \$ (539,580)   |
|   |                | -----          |
| Net increase in net assets applicable to common shareowners resulting from operations |                | \$27,458,455   |
|   |                | =====          |

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

Pioneer Municipal High Income Trust

-----  
STATEMENT OF CHANGES IN NET ASSETS  
-----

For the period 7/21/03 (commencement of operations) to 4/30/04

|   |  |                 |
|---|--|-----------------|
|   |  | 7/21/03         |
|   |  | to              |
|   |  | 4/30/04         |
| FROM OPERATIONS:  |  |                 |
| Net investment income   |  | \$ 17,506,653   |
| Net realized loss on investments and interest rate swaps          |  | (1,231,658)     |
| Net unrealized gain on investments and interest rate swaps        |  | 11,723,040      |
| Distributions to preferred shareowners from net investment income |  | (539,580)       |
|   |  | -----           |
| Net increase in net assets applicable to common shareowners       |  | \$ 27,458,455   |
|   |  | -----           |
| DISTRIBUTIONS TO COMMON SHAREOWNERS:                              |  |                 |
| Net investment income (\$0.72 per share)                          |  | \$ (15,907,493) |
|   |  | -----           |
| Total dividends to common shareowners                             |  | \$ (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       |
| Common share offering expenses charged to paid-in capital         |  | (660,000)       |
| Preferred share offering expenses charged to paid-in capital      |  | (1,224,943)     |
|   |  | -----           |

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|  |                        |
|--|------------------------|
| Net increase in net assets applicable to common shareowners<br>resulting from Trust share transactions | \$314,938,700<br>----- |
| Net increase in net assets applicable to common shareowners  | \$326,489,662          |
| <b>NET ASSETS APPLICABLE TO COMMON SHAREOWNERS:</b>  |                        |
| Beginning of period  | 100,003<br>-----       |
| End of period (including accumulated net investment<br>income of \$998,979)                            | \$326,589,665<br>===== |

The accompanying notes are an integral part of these financial statements. 17

Pioneer Municipal High Income Trust

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FINANCIAL HIGHLIGHTS 4/30/04  
-----

July 21, 2003 to  
April 30, 2004 (a) (b)

|   |                    |
|---|--------------------|
| Per Common Share Operating Performance  |                    |
| Net asset value, beginning of period  | \$ 14.33+<br>----- |
| Increase (decrease) from investment operations:   |                    |
| Net investment income   | \$ 0.80            |
| Net realized and unrealized gain on investments   | 0.46               |
| Distributions to preferred shareowners from net investment income                                   | (0.02)<br>-----    |
| Net increase from investment operations   | \$ 1.24            |
| Distributions to common shareowners:  |                    |
| Net investment income   | (0.72)             |
| Capital charge with respect to issuance of:   |                    |
| Common shares   | (0.03)             |
| Preferred shares  | (0.06)<br>-----    |
| Net increase in net asset value   | \$ 0.43<br>-----   |
| Net asset value, end of period*   | \$ 14.76<br>=====  |
| Market value, end of period*  | \$ 13.70<br>=====  |
| Total return++  | (4.11)%            |
| Ratios to average net assets of common shareowners  |                    |
| Net expenses+++   | 0.95%**            |
| Net investment income before preferred share dividends+++   | 6.91%**            |
| Preferred share dividends   | 0.21%**            |
| Net investment income available to common shareowners   | 6.70%**            |
| Portfolio turnover  | 54%                |
| Net assets of common shareowners, end of period (in thousands)                                      | \$326,590          |
| Preferred shares outstanding (in thousands)   | \$101,000          |
| Asset coverage per preferred share, end of period   | \$105,839          |
| Average market value per preferred share  | \$ 25,000          |
| Liquidation value per preferred share   | \$ 25,000          |
| Ratios to average net assets of common shareowners before<br>reimbursement of organization expenses |                    |
| Net expenses+++   | 0.96%**            |

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|   |         |
|---|---------|
| Net investment income before preferred share dividends+++ | 6.90%** |
| Preferred share dividends                                 | 0.21%** |
| Net investment income available to common shareowners     | 6.69%** |

- (a) The per common share data presented above is based upon the average common shares outstanding for the period presented.
- (b) Trust shares were first publicly offered on July 18, 2003.
- \* 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.
- \*\* Annualized.
- + Net asset value immediately after the closing of the first public offering was \$14.30.
- ++ 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 period 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.
- +++ Ratios do not reflect the effect of dividend payments to preferred shareowners.

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 period 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.

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

Pioneer Municipal High Income Trust

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### NOTES TO FINANCIAL STATEMENTS 4/30/04

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#### 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, 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. PIM has agreed to reimburse the amount by which the aggregate of all the Trust's organizational expenses and offering costs for common shares (other than the sales load) exceeds \$0.03 per share of common share offering. The investment objective of the Trust is to seek a high level of current income exempt from regular federal income tax and the 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.

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The Trust invests in below 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 accounting principles generally accepted in the United States of America 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 and 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

19

Pioneer Municipal High Income Trust

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NOTES TO FINANCIAL STATEMENTS 4/30/04

(continued)  
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consistently followed by the Trust, which are in conformity with those 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, 2004, there were no securities fair valued. Discount and premium on fixed income 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. Temporary cash investments are valued at amortized cost.

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.

The amount and characterization of distributions to shareowners for financial reporting purposes is 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

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transactions, or from paid in-capital, depending on the type of book/tax differences that may exist.

At April 30, 2004, the Trust reclassified \$60,601 to decrease accumulated net investment income and to decrease accumulated net realized loss on investments. The reclassification has no impact on the net asset value of the Trust and presents the Trust's capital accounts on a tax basis.

20

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### Pioneer Municipal High Income Trust

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

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|                          | 2004         |
|--------------------------|--------------|
| Distributions paid from: |              |
| Tax exempt income        | \$16,447,073 |
| Long-term capital gain   | -            |
| Total                    | \$16,447,073 |
|                          | =====        |

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The following shows components of distributable earnings on a federal income tax basis at April 30, 2004.

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|                                 | 2004         |
|---------------------------------|--------------|
| Undistributed tax-exempt income | \$ 431,774   |
| Capital loss carryforward       | (1,170,962)  |
| Unrealized appreciation         | 12,290,150   |
| Total                           | \$11,550,962 |
|                                 | =====        |

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The difference between book basis and tax basis unrealized appreciation is primarily attributable to the difference between book and tax amortization methods for premiums and discounts on fixed income securities and the tax deferral of losses on wash sales.

#### 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 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

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Plan will receive the equivalent in common shares acquired by the Plan Agent either

Pioneer Municipal High Income Trust

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NOTES TO FINANCIAL STATEMENTS 4/30/04

(continued)  
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(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.

In addition, under PIM's management and administration agreements, certain other services and costs are paid by the Trust. PIM has retained Princeton Administrators, L.P., an affiliate of Merrill Lynch, Pierce, Fenner & Smith Incorporated, to provide certain administrative services to the Trust on its behalf. The Trust pays Princeton Administrators, L.P. 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.

Pioneer Municipal High Income Trust  
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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 expenses, 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 expense 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. Under this agreement, PIM may subsequently recover reimbursed expenses (within three years of being incurred) from the Trust if the Trust's total expenses are less than 0.80% of average daily managed assets. As of April 30, 2004, 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. 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.

### 4. 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 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. 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

23

Pioneer Municipal High Income Trust

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NOTES TO FINANCIAL STATEMENTS 4/30/04

(continued)

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and exchange of net interest payments between the parties. For financial reporting purposes, the Trust records the net receivable or payable for the net interest expected to be received or paid as net realized gains or losses from Interest Rate Swaps in 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" to reflect the market value of the swap. 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, the Trust does not anticipate non-performance by any counterparty.



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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, 2004 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   | \$1,136,800             |

### 5. 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, 2004, PIM owned 6,981 shares.

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

|  |            |
|--|------------|
| 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                        | 6,981      |
| Shares outstanding at end of period                              | 22,120,893 |

24

Pioneer Municipal High Income Trust

Offering costs of \$660,000 incurred in connection with the Trust's offering of common shares have been charged to paid-in capital.

The Trust may classify or reclassify any unissued common shares of beneficial interest into one or more series of preferred shares of beneficial interest. On October 2, 2003, the Trust reclassified and issued 4,040 shares of common shares into two series of APS as follows: Series A-2,000 and Series B-2,040. Offering costs of \$214,943 and underwriting discounts of \$1,010,000 have been charged to paid-in capital.

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 0.45% to 1.25% during the period ended April 30, 2004.

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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 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.

25

Pioneer Municipal High Income Trust

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NOTES TO FINANCIAL STATEMENTS 4/30/04

(continued)  
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### 6. Subsequent Events

Subsequent to April 30, 2004 the Board of Trustees of the Trust declared a dividend from undistributed net investment income of \$0.09 per common share payable May 28, 2004, to shareowners of record on May 17, 2004.

For the period May 1, 2004 to May 31, 2004, dividends declared on preferred stock totaled \$82,766 in aggregate for the two outstanding preferred share series.

### 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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26

Pioneer Municipal High Income Trust

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REPORT OF INDEPENDENT REGISTERED PUBLIC ACCOUNTING FIRM  
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To the Board of Trustees and Shareowners  
of Pioneer Municipal High Income Trust:

We have audited the statement of assets and liabilities, including the schedule of investments, of Pioneer Municipal High Income Trust (the "Trust") as of April 30, 2004, and the related statements of operations and changes in net assets, and the financial highlights 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 audit.

We conducted our audit 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. An audit includes examining, on a test basis, evidence supporting the amounts and disclosures in the financial statements and financial highlights. Our procedures included confirmation of securities owned as of April 30, 2004, by correspondence with the custodian. An audit also includes assessing the accounting principles used and significant estimates made by management, as well as evaluating the overall financial statement presentation. We believe that our audit provides 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, 2004, and the results of its operations, the changes in its net assets and the financial highlights 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 4, 2004

27

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THE PIONEER FAMILY OF MUTUAL FUNDS  
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Please consider a fund's investment objectives, risks, charges and expenses carefully before investing. The prospectus contains this and other information about a 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 advisor, call 1-800-225-6292 or visit our web site at [www.pioneerfunds.com](http://www.pioneerfunds.com).

U.S. Equity  
Pioneer Fund  
Pioneer Balanced Fund  
Pioneer Equity Income Fund  
Pioneer Growth Shares

International/Global Equity  
Pioneer Emerging Markets Fund  
Pioneer Europe Select Fund  
Pioneer Europe Fund  
Pioneer International Equity Fund

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|  |                                  |
|--|----------------------------------|
| Pioneer Mid Cap Growth Fund                | Pioneer International Value Fund |
| Pioneer Mid Cap Value Fund                 |                                  |
| Pioneer Oak Ridge Large Cap Growth Fund    | Fixed Income                     |
| Pioneer Oak Ridge Small Cap Growth Fund    | Pioneer America Income Trust     |
| Pioneer Papp America-Pacific Rim Fund      | Pioneer Bond Fund                |
| Pioneer Papp Small and Mid Cap Growth Fund | Pioneer Global High Yield Fund   |
| Pioneer Papp Stock Fund                    | Pioneer High Yield Fund          |
| Pioneer Papp Strategic Growth Fund         | Pioneer Strategic Income Fund    |
| Pioneer Real Estate Shares                 | Pioneer Tax Free Income Fund     |
| Pioneer Research Fund*                     |                                  |
| Pioneer Small Cap Value Fund               | Money Market                     |
| Pioneer Small Company Fund                 | Pioneer Cash Reserves Fund**     |
| Pioneer Value Fund                         |                                  |

\* Name change effective December 11, 2003. Formerly known as Pioneer Tax-Managed Fund.

\*\* An investment in the Fund is not insured or guaranteed by the Federal Deposit Insurance Corporation or any other government agency. Although the Fund seeks to preserve the value of your investment at \$1.00 per share, it is possible to lose money by investing in the Fund.

28

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### TRUSTEES, OFFICERS AND SERVICE PROVIDERS

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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

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The Trust's Board of Trustees provides broad supervision over the Trust's affairs. The officers of the Trust are responsible for the Fund'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 60 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). This information is also available at pioneerfunds.com.

29

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 INTERESTED TRUSTEES  
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| Name and Age             | Positions Held With the Trust                   | Term of Office and Length of Service      |
|--------------------------|---|---|
| John F. Cogan, Jr. (77)* | Chairman of the Board,<br>Trustee and President | Since July, 2003.<br>Term expires in 2004 |

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

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|                       |   |   |
|-----------------------|---|---|
| Osbert M. Hood (51)** | Trustee and<br>Executive Vice President | Since July, 2003.<br>Term expires in 2005 |
|-----------------------|---|---|

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

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 INDEPENDENT TRUSTEES  
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| Name, Age and Address   | Positions Held With the Trust | Term of Office and Length of Service      |
|---|-------------------------------|---|
| Mary K. Bush (56)<br>3509 Woodbine Street,<br>Chevy Chase, MD 20815 | Trustee                       | Since July, 2003.<br>Term expires in 2006 |

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|   |         |   |
|---|---------|---|
| Richard H. Egdahl, M.D. (77)<br>Boston University Healthcare<br>Entrepreneurship Program,<br>53 Bay State Road,<br>Boston, MA 02215 | Trustee | Since July, 2003.<br>Term expires in 2004 |
|---|---------|---|

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30

Principal Occupation During Past Five Years

Deputy Chairman and a Director of Pioneer Global Asset Management S.p.A. ("PGAM"); Non-Executive Chairman and a Director of Pioneer Investment Management USA Inc. ("PIM-USA"); Chairman and a Director of Pioneer; Director of Pioneer Alternative Investment Management Limited (Dublin); President and a Director of Pioneer Alternative Investment Management (Bermuda) Limited and affiliated funds; President and Director of Pioneer Funds Distributor, Inc. ("PFD"); President of all of the Pioneer Funds; and Of Counsel (since 2000, partner prior to 2000), Hale and Dorr LLP (counsel to PIM-USA and the Pioneer Funds)

Other Directorships Held by this T

Director of Harbor Global Company, Ltd.

President and Chief Executive Officer, PIM-USA since May, 2003 (Director since January, 2001); President and Director of Pioneer since May, 2003; Chairman and Director of Pioneer Investment Management Shareholder Services, Inc. ("PIMSS") since May, 2003; Executive Vice President of all of the Pioneer Funds since June, 2003; Executive Vice President and Chief Operating Officer of PIM-USA, November 2000 to May 2003; Executive Vice President, Chief Financial Officer and Treasurer, John Hancock Advisers, L.L.C., Boston, MA, November 1999 to November 2000; Senior Vice President and Chief Financial Officer, John Hancock Advisers, L.L.C., April 1997 to November 1999

None

Principal Occupation During Past Five Years

President, Bush International (international financial advisory firm)

Other Directorships Held by this T

Director of Brady Corporation (industrial identification and specialty coated material products manufacturer), Millennium Chemical Inc. (commodity chemicals), Mortga Guaranty Insurance Corporation, and R.J. Reynolds Tobacco Holdings, Inc. (tobacco)

Alexander Graham Bell Professor of Health Care Entrepreneurship, Boston University; Professor of Management, Boston University School of Management; Professor of Public Health, Boston

None

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University School of Public Health; Professor of Surgery,  
 Boston University School of Medicine; and University  
 Professor, Boston University

31

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 INDEPENDENT TRUSTEES  
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| Name, Age and Address  | Positions Held With the Trust | Term of Office and Length of Service      |
|--|-------------------------------|---|
| Margaret B.W. Graham (57)<br>1001 Sherbrooke Street West,<br>Montreal, Quebec, Canada<br>H3A 1G5 | Trustee                       | Since July, 2003.<br>Term expires in 2005 |
| Marguerite A. Piret (56)<br>One Boston Place, 28th Floor,<br>Boston, MA 02108                    | Trustee                       | Since July, 2003.<br>Term expires in 2006 |
| Stephen K. West (75)<br>125 Broad Street,<br>New York, NY 10004                                  | Trustee                       | Since July, 2003.<br>Term expires in 2004 |
| John Winthrop (67)<br>One North Adgers Wharf,<br>Charleston, SC 29401                            | Trustee                       | Since July, 2003.<br>Term expires in 2005 |

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 TRUST OFFICERS  
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| Name and Age                | Positions Held With the Trust | Term of Office and Length of Service                   |
|-----------------------------|-------------------------------|--|
| Dorothy E. Bourassa (56)    | Secretary                     | Since July, 2003.<br>Serves at the discretion of board |
| Christopher J. Kelley (39 ) | Assistant Secretary           | Since July, 2003.<br>Serves at the discretion of board |
| David C. Phelan (46)        | Assistant Secretary           | Since July, 2003.<br>Serves at the discretion of board |
| Vincent Nave (59)           | Treasurer                     | Since July, 2003.<br>Serves at the discretion of board |
| Luis I. Presutti (39)       | Assistant Treasurer           | Since July, 2003.<br>Serves at the discretion of board |

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32

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|   |  |
|---|--|
| Principal Occupation During Past Five Years | Other Directorships Held by this Trustee |
|---|--|

|  |      |
|--|------|
| Founding Director, The Winthrop Group, Inc. (consulting firm); Professor of Management, Faculty of Management, McGill University | None |
|--|------|

|   |      |
|---|------|
| President and Chief Executive Officer, Newbury, Piret & Company, Inc. (investment banking firm) | None |
|---|------|

|  |   |
|--|---|
| Senior Counsel, Sullivan & Cromwell (law firm) | Director, The Swiss Helvetia Fund Inc. (closed-end investment company) and AMVESCAP PLC (investment managers) |
|--|---|

|  |      |
|--|------|
| President, John Winthrop & Co., Inc. (private investment firm) | None |
|--|------|

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|   |  |
|---|--|
| Principal Occupation During Past Five Years | Other Directorships Held by this Officer |
|---|--|

|  |      |
|--|------|
| 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 |
|--|------|

|   |      |
|---|------|
| 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 of the Pioneer Funds since September 2003 | None |
|---|------|

|  |      |
|--|------|
| Partner, Hale and Dorr LLP; Assistant Secretary of all of Pioneer Funds since September 2003 | None |
|--|------|

|  |      |
|--|------|
| Vice President-Fund Accounting, Administration and Custody Services of Pioneer (Manager from September 1996 to February 1999); and Treasurer of all of the Pioneer Funds (Assistant Treasurer from June 1999 to November 2000) | None |
|--|------|



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Assistant Vice President-Fund Accounting, Administration and Custody Services of Pioneer (Fund Accounting Manager from 1994 to 1999); and Assistant Treasurer of all of the Pioneer Funds since November 2000

None

33

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 TRUST OFFICERS  
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| Name and Age       | Positions Held With the Trust | Term of Office and Length of Service                    |
|--------------------|-------------------------------|---|
| Gary Sullivan (46) | Assistant Treasurer           | Since July, 2003.<br>Serves at the discretion of board. |

|                             |                     |   |
|-----------------------------|---------------------|---|
| Katherine Kim Sullivan (30) | Assistant Treasurer | Since July, 2003.<br>Serves at the discretion of board. |
|-----------------------------|---------------------|---|

34

| Principal Occupation During Past Five Years   | Other Directorships Held by this Officer |
|---|--|
| Fund Accounting Manager-Fund Accounting, Administration and Custody Services of Pioneer; and Assistant Treasurer of all of the Pioneer Funds since May 2002   | None                                     |
| Fund Administration Manager-Fund Accounting, 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 Supervisor from 1997 to July 1999); Assistant Treasurer of all of the Pioneer Funds since September 2003 | None                                     |

35

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This page for your notes.

36

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This page for your notes.

37

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HOW TO CONTACT PIONEER  
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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 1-800-288-9541

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

Please consider the Trust's investment objectives, risks, charges and expenses carefully before investing. The prospectus contains this and other information about the Trust and should be read carefully before you invest or send money. To obtain a prospectus and for other information on any Pioneer fund, call 1-800-225-6292 or visit our website [www.pioneerfunds.com](http://www.pioneerfunds.com).

[LOGO] Pioneer  
Investments (R)

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Pioneer Investment Management, Inc.  
60 State Street  
Boston, Massachusetts 02109  
www.pioneerfunds.com

15418-00-0604  
(C)2004 Pioneer Funds Distributor, Inc.  
Underwriter of Pioneer mutual funds, Member SIPC

### 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

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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 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

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- (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 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 initial and annual filings of its Form N-1A and issuance of comfort letters, totaled approximately \$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 Trust's audit-related services totaled approximately \$22,500 in 2004, which were related to the review of the Trust's semi-annual financial statements and the issuance of agreed upon procedures report to the rating agencies.

(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 \$3,600 for 2004.

(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

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There were no other services provided to the Trust during the fiscal year ended April 30, 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

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

##### SECTION I - POLICY PURPOSE AND APPLICABILITY

The Pioneer Funds recognizes 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 recognizes 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"><li>o Accounting research assistance</li><li>o SEC consultation, registration statements, and reporting</li><li>o Tax accrual related matters</li><li>o Implementation of new accounting standards</li><li>o Compliance letters (e.g. rating agency letters)</li><li>o Regulatory reviews and assistance regarding financial matters</li><li>o Semi-annual reviews (if requested)</li><li>o Comfort letters for closed end</li></ul> |

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offerings

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|                                  |   |   |
|----------------------------------|---|---|
| II.<br>AUDIT-RELATED<br>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 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.) | o AICPA attest and agreed-upon procedures<br>o Technology control assessments<br>o Financial reporting control assessments<br>o Enterprise security architecture assessment |
|----------------------------------|---|---|

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AUDIT COMMITTEE APPROVAL POLICY

AUDIT COMMITTEE  
REPORTING POLICY

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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"

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SECTION III - POLICY DETAIL, CONTINUED

| SERVICE CATEGORY  | SERVICE CATEGORY DESCRIPTION  | SPECIFIC PRE-APPROVED SERVICE SUBCATEGORIES   |
|-------------------|---|---|
| III. TAX SERVICES | 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. | <ul style="list-style-type: none"> <li>o Tax planning and support</li> <li>o Tax controversy assistance</li> <li>o Tax compliance, tax returns, excise tax returns and support</li> <li>o Tax opinions</li> </ul> |

| AUDIT COMMITTEE APPROVAL POLICY  | AUDIT COMMITTEE REPORTING POLICY  |
|--|---|
| <ul style="list-style-type: none"> <li>o "One-time" pre-approval for the fund fiscal year within a specified dollar limit</li> <li>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)</li> <li>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"</li> </ul> | <ul style="list-style-type: none"> <li>o A summary of all such services and related fees (including comparison to specified dollar limits) reported quarterly.</li> </ul> |

SECTION III - POLICY DETAIL, CONTINUED

| SERVICE CATEGORY | SERVICE CATEGORY DESCRIPTION | SPECIFIC PRE-APPROVED SERVICE SUBCATEGORIES |
|------------------|------------------------------|---|
|------------------|------------------------------|---|



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|  |   |  |
|--|---|--|
| <p>IV. OTHER SERVICES</p> <p>A. SYNERGISTIC,<br/>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 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.</p> | <ul style="list-style-type: none"> <li>o Business Risk Management support</li> <li>o Other control and regulatory compliance projects</li> </ul> |
|--|---|--|

AUDIT COMMITTEE APPROVAL POLICY

AUDIT COMMITTEE REPORTING POLICY

- |   |   |
|---|---|
| <ul style="list-style-type: none"> <li>o "One-time" pre-approval for the fund fiscal year within a specified dollar limit</li> <li>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)</li> <li>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"</li> </ul> | <ul style="list-style-type: none"> <li>o A summary of all such services and related fees (including comparison to specified dollar limits) reported quarterly.</li> </ul> |
|---|---|

SECTION III - POLICY DETAIL, CONTINUED

| SERVICE CATEGORY           | SERVICE CATEGORY DESCRIPTION                        | SPECIFIC PROHIBITED SERVICE SUBCATEGORIES                                    |
|----------------------------|---|--|
| <p>PROHIBITED SERVICES</p> | <p>Services which result in the auditors losing</p> | <p>1. Bookkeeping or other services related to the accounting records or</p> |

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independence status  
under the Rule.

- 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
  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

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### 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.

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### 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.

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### 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.

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(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.

N/A

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(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 aggregate non-audit fees for the Trust and affiliates, as previously defined, totaled approximately \$26,100 in 2004.

(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 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.

Not applicable, Fund does not invest in voting securities

ITEM 8. [RESERVED]

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### 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 certifying officers have determined that the registrant's disclosure controls and procedures are effective based on our evaluation of these controls and procedures as of a date within 90 days prior to 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.

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.

Filed herewith.

(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

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Date June 30, 2004

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 30, 2004

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

Date June 30, 2004

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