

PIONEER MUNICIPAL HIGH INCOME OPPORTUNITIES FUND, INC.
REQUIRED NOTICE TO SHAREHOLDERS
SOURCES OF DISTRIBUTION UNDER SECTION 19(a)

FOR IMMEDIATE RELEASE

December 20, 2021

Boston, Massachusetts – Pioneer Municipal High Income Opportunities Fund, Inc. (NYSE: MIO) today reported sources of distribution for December and for distributions this fiscal year to date.

Distribution Period	December 2021
Distribution Amount Per Share	\$0.0450

The following table sets forth estimates of the character of the current distribution and the cumulative distributions paid this fiscal year to date from the following sources: Net Investment Income; Net Realized Short-Term Capital Gains; Net Realized Long-Term Capital Gains or Return of Capital. All amounts are expressed per common share.

	Current Distribution	Percentage Make up of Current Distribution	Total Cumulative Distributions Fiscal Year to Date	Percentage Make up of Total Cumulative Distributions Fiscal Year to Date
Net Investment Income	\$0.03375	75.0%	\$0.0988	82.3%
Net Realized Short-Term Capital Gains	\$0.00000	0.0%	\$0.0000	0.0%
Net Realized Long-Term Capital Gains	\$0.00000	0.0%	\$0.0000	0.0%
Return of Capital	\$0.01125	25.0%	\$0.0213	17.7%
Total per Common Share	\$0.04500	100.0%	\$0.1200	100.0%

Note

Investors should not necessarily draw any conclusions about the fund's investment performance from the amount of this distribution.

The fund estimates that a portion of the distribution does not represent income or realized capital gains. Therefore, such portion of the distribution may be a return of capital. A return of capital may occur when some or all of the money invested in the fund is returned to the investor. A return of capital distribution does not necessarily reflect the fund's investment performance and should not be considered "yield" or "income."

The amounts and sources of distributions reported under the notice are only estimates and are not being provided for tax reporting purposes. The actual amounts and sources for tax reporting purposes will depend upon the fund's investment experience during the remainder of its fiscal year and may be subject to change based on tax regulations. The fund will provide investors with a Form(s) 1099 for the calendar year that explains how to report these distributions for federal income tax purposes.

Pioneer Municipal High Income Opportunities Fund, Inc. is a closed-end investment company traded on the New York Stock Exchange (NYSE) under the symbol MIO.

Keep in mind, distribution rates are not guaranteed. A fund's distribution rate may be affected by numerous factors, including changes in actual or projected investment income, the level of undistributed net investment income, if any, and other factors. Shareholders should not draw any conclusions about a fund's investment performance based on a fund's current distributions. Closed-end funds, unlike open-end funds, are not continuously offered. Once issued, common shares of closed-end funds are bought and sold in the open market through a stock exchange and frequently trade at prices lower than their net asset value. Net Asset Value (NAV) is total assets less total liabilities divided by the number of common shares outstanding. For performance data on Amundi US's closed-end funds, please call 800-225-6292 or visit our [closed-end pricing page](#).

About Amundi US

Amundi US is the US business of Amundi, Europe's largest asset manager by assets under management and ranked among the ten largest globally^[1]. Boston is one of Amundi's six main global investment hubs^[2] and offers a broad range of fixed-income, equity, and multi-asset investment solutions in close partnership with wealth management firms, distribution platforms, and institutional investors across the Americas, Europe, and Asia-Pacific.

With our financial and extra-financial research capabilities and long-standing commitment to responsible investment, Amundi is a key player in the asset management landscape. Amundi clients benefit from the expertise and advice of close to 4,800 employees in 36 countries. A subsidiary of the Crédit Agricole group and listed on the Paris stock exchange, Amundi currently manages approximately \$2.09 trillion of assets^[3].

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1. Source: IPE "Top 500 Asset Managers" published in June 2021, based on assets under management as of 12/31/2020
2. Boston, Dublin, London, Milan, Paris, and Tokyo
3. Amundi data as of 9/30/21

Shareholder Inquiries: Please contact your financial advisor or visit www.amundi.com/us.

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