BLACKROCK MUNIYIELD INVESTMENT FUND Form N-Q June 22, 2015

UNITED STATES

SECURITIES AND EXCHANGE COMMISSION

Washington, D.C. 20549

FORM N-Q

QUARTERLY SCHEDULE OF PORTFOLIO HOLDINGS OF REGISTERED MANAGEMENT INVESTMENT COMPANY

Investment Company Act file number 811-06502

Name of Fund: BlackRock MuniYield Investment Fund (MYF)

Fund Address: 100 Bellevue Parkway, Wilmington, DE 19809

Name and address of agent for service: John M. Perlowski, Chief Executive Officer, BlackRock MuniYield Investment Fund, 55 East 52nd Street, New York, NY 10055

Registrant's telephone number, including area code: (800) 882-0052, Option 4

Date of fiscal year end: 07/31/2015

Date of reporting period: 04/30/2015

Item 1 – Schedule of Investments

Schedule of Investments April 30, 2015 (Unaudited) BlackRock MuniYield Investment Fund, Inc. (MYF)

 BlackRock MuniYield Investment Fund, Inc. (MYF) (Percentages shown are based on Net Assets)

Municipal Par Value Bonds (000)Alabama — 0.3% City of Selma Alabama IDB, RB, Gulf Opportunity 545 \$616,738 Zone, International Paper Co. Project, Series A, 5.38%, 12/01/35 Municipal Par Value Bonds (000)California (concluded) State of California Public Works Board, LRB, 1,000 \$1,196,350 Various Capital Projects, Series I, 5.50%, 11/01/31 835 977,326 State of California Public Works Board, RB, Department of Corrections

| & | | |
|-----------------|-------|-----------|
| Rehabilitation, | | |
| Series | | |
| F, | | |
| 5.25%, | | |
| 9/01/33 | | |
| Township | | |
| of | | |
| Washington | | |
| California | | |
| Health | | |
| Care | | |
| District, | 625 | 741,513 |
| GO, | 023 | /41,515 |
| Election | | |
| of | | |
| 2004, | | |
| Series B, | | |
| 5.50%, | | |
| 8/01/40 | | |
| University | | |
| of | | |
| California, | | |
| Refunding | | |
| RB, | | |
| The | | |
| Regents | 3,730 | 4,291,141 |
| of | - , | , - , |
| Medical | | |
| Center, | | |
| Series | | |
| J, 5.2507 | | |
| 5.25%, | | |
| 5/15/38 | | |

MunicipalPar Bonds (000) Value

| Municipal | | |
|-------------|-------|-------|
| Bonds | | |
| Transferred | Par | |
| to Tender | (000) | Value |
| Option | (000) | |
| Bond Trusts | | |
| (c) | | |

Municipal Bonds Transferred to Tender Par (000) Bond Trusts (c)

Municipal Bonds Transferred to Tender (000) Value Option Bond Trusts (c) New York (concluded) New York State Dormitory Authority, 2**5**, 5,700 \$6,445,560 Personal Income Tax, Series B, 5.25%, 3/15/38

30,815,274

Municipal Bonds Transferred to to Tender (000) Option Value Bond Trusts (c) Virginia — 0.9% C\$uhf7,49 \$1,974,439 of Fairfax Virginia IDA, Refunding RB, Health Care, Inova Health System,

Series A, 5.50%, 5/15/35

* As of April 30, 2015, gross unrealized appreciation and depreciation based on cost for federal income tax purposes were as follows:

| Tax cost | \$233,744,831 |
|-------------------------------|---------------|
| Gross unrealized appreciation | \$37,022,873 |
| Gross unrealized depreciation | (836,894) |
| Net unrealized appreciation | \$36,185,979 |

Notes to Schedule of Investments

- (a) U.S. Government securities, held in escrow, are used to pay interest on this security, as well as to retire the bond in full at the date indicated, typically at a premium to par.
- (b) Security exempt from registration pursuant to Rule 144A under the Securities Act of 1933, as amended. These securities may be resold in transactions exempt from registration to qualified institutional investors.
- (c) Represent bonds transferred to a TOB Trust in exchange of cash and residual certificates received by the Fund. These bonds serve as collateral in a secured borrowing.

All or a portion of security is subject to a recourse agreement, which may require the Fund to pay the liquidity provider in the event there is a shortfall between the TOB Trust Certificates and proceeds received from the sale of

- (d) the security contributed to the TOB Trust or in the event of a default on the security. In the case of a shortfall or default, the aggregate maximum potential amount the Fund could ultimately be required to pay under the agreements, which expire from October 1, 2016 to November 15, 2019 is \$18,118,171.
- (e) During the period ended April 30, 2015, investments in issuers considered to be an affiliate of the Fund for purposes of Section 2(a)(3) of the Investment Company Act of 1940, as amended, were as follows:

Schedule of Investments (continued) BlackRock MuniYield Investment Fund, Inc. (MYF)

| Affiliate | Shares Held at July 31, 2014 | Net Activity | Shares Held at April 30, 2015 | Income |
|----------------------|---------------------------------------|-----------------|-------------------------------------|--------|
| FFI Institutional | | | | |

| Institutional | 1,361,852386,427 | 1,748,279 | \$525 |
|---------------|-------------------|-----------|---------------|
| Tax-Exempt | 1,301,632,360,427 | 1,740,279 | \$ <i>323</i> |
| Fund | | | |

(f)Represents the current yield as of report date.

Portfolio Abbreviations

| | Assured | | |
|-------|-----------------|--|--|
| AGC | Guarantee | | |
| | Corp. | | |
| | Assured | | |
| AGM | Guaranty | | |
| AGM | Municipal | | |
| | Corp. | | |
| | American | | |
| | Municipal | | |
| AMBAC | Bond | | |
| | Assurance | | |
| | Corp. | | |
| | Alternative | | |
| AMT | Minimum Tax | | |
| | (subject to) | | |
| | Airport | | |
| ARB | Revenue | | |
| | Bonds | | |
| | Building Aid | | |
| BARB | Revenue | | |
| | Bonds | | |
| COD | Certificates of | | |
| COP | Participation | | |
| | Economic | | |
| EDA | Development | | |
| | Authority | | |
| ERB | Education | | |
| | Revenue | | |
| | | | |

| | Bonds |
|------|---------------|
| | General |
| GARB | Airport |
| UARD | Revenue |
| | Bonds |
| | General |
| GO | Obligation |
| | Bonds |
| | Housing |
| HFA | Finance |
| | Agency |
| | Industrial |
| IDA | Development |
| | Authority |
| | Industrial |
| IDB | Development |
| | Board |
| | Independent |
| ISD | School |
| | District |
| | Lease |
| LRB | Revenue |
| | Bonds |
| DD | Revenue |
| RB | Bonds |
| S/F | Single-Family |
| | |

•As of April 30, 2015, financial futures contracts outstanding were as follows:

| Contract Short | ^S Issue | Exchange | Expiratior | Notional Value | Unrealized Depreciation |
|-------------------|----------------------------|------------------------|--------------|-------------------|-------------------------|
| (153) | 10-Year U.S. Treasury Note | Chicago Board of Trade | June 2015 | \$19,641,375 | \$(172,918) |

Schedule of Investments (continued) BlackRock MuniYield Investment Fund, Inc. (MYF)

Fair Value Measurements — Various inputs are used in determining the fair value of investments and derivative financial instruments. These inputs to valuation techniques are categorized into a disclosure hierarchy consisting of three broad levels for financial reporting purposes. The hierarchy gives the highest priority to unadjusted quoted prices in active markets for identical assets or liabilities (Level 1 measurements) and the lowest priority to unobservable inputs (Level 3 measurements). Accordingly, the degree of judgment exercised in determining fair value is greatest for instruments categorized in Level 3. The inputs used to measure fair value may fall into different levels of the fair value hierarchy. In such cases, for disclosure purposes, the fair value hierarchy classification is determined based on the lowest level input that is significant to the fair value measurement in its entirety. The categorization of a value determined for investments and derivative financial instruments is based on the pricing transparency of the investment and derivative financial instruments and is not necessarily an indication of the risks associated with investing in those securities. The three levels of the fair value hierarchy are as follows:

Level 1 — unadjusted quoted prices in active markets/exchanges for identical assets or liabilities that the Fund has the ability to access

Level 2 — other observable inputs (including, but not limited to, quoted prices for similar assets or liabilities in markets that are active, quoted prices for identical or similar assets or liabilities in markets that are not active, inputs other than quoted prices that are observable for the assets or liabilities (such as interest rates, yield curves, volatilities, prepayment speeds, loss severities, credit risks and default rates) or other market-corroborated inputs)

Level 3 — unobservable inputs based on the best information available in the circumstances, to the extent observable inputs are not available (including the Fund's own assumptions used in determining the fair value of investments and derivative financial instruments)

Changes in valuation techniques may result in transfers into or out of an assigned level within the disclosure hierarchy. In accordance with the Fund's policy, transfers between different levels of the fair value disclosure hierarchy are deemed to have occurred as of the beginning of the reporting period. For information about the Fund's policy regarding valuation of investments and derivative financial instruments, refer to the Fund's most recent financial statements as contained in its semi-annual report.

As of April 30, 2015, the following tables summarize the Fund's investments and derivative financial instruments categorized in the disclosure hierarchy:

| | Level 1 | Level 2 | Level 3 | 3 Total |
|------------------------------------|------------|---------------|---------|---------------|
| Assets: | | | | |
| Investments: | | | | |
| Long-Term Investments ¹ | 1 | \$343,946,28 | —0 | \$343,946,280 |
| Short-Term Securities | \$1,748,27 | 9— | | 1,748,279 |
| Total | \$1,748,27 | 9\$343,946,28 | 0— | \$345,694,559 |

¹See above Schedule of Investments for values in each state or political subdivision.

Level 1 Level 2 Level 3 Total

Derivative Financial Instruments² Liabilities: Interest rate contracts \$(172,918) - \$(172,918)

²Derivative financial instruments are financial futures contracts, which are valued at the unrealized appreciation/depreciation on the instrument. BlackRock MuniYield Investment Fund, Inc. April 30, 2015 8

Schedule of Investments (concluded) BlackRock MuniYield Investment Fund, Inc. (MYF)

The Fund may hold assets and/or liabilities in which the fair value approximates the carrying amount for financial reporting purposes. As of April 30, 2015, such assets and/or liabilities are categorized within the disclosure hierarchy as follows:

| | Level 1 | Level 2 | Level 3 | 3 Total | |
|---|----------|-----------------|---------|----------|----------|
| Assets: Cash pledged for financial futures contracts | \$217.00 | 0 | | ¢ | 217.000 |
| Liabilities: | φ217,000 | 0— | | φ | 217,000 |
| TOB trust certificates | | \$ (75,763,749 |)— | (75,763 | 3,749) |
| VRDP Shares | | (59,400,000) | | (59,400 |),000) |
| Total | \$217,00 | 0\$(135,163,749 |)— | \$(134,9 | 946,749) |

During the period ended April 30, 2015, there were no transfers between levels.

Item 2 -Controls and Procedures

The registrant's principal executive and principal financial officers, or persons performing similar functions, have concluded that the registrant's disclosure controls and procedures (as defined in Rule 30a-3(c) under the

2(a) – Investment Company Act of 1940, as amended (the 1940 Act)) are effective as of a date within 90 days of the filing of this report based on the evaluation of these controls and procedures required by Rule 30a-3(b) under the 1940 Act and Rule 13a-15(b) under the Securities Exchange Act of 1934, as amended.

> There were no changes in the registrant's internal control over financial reporting (as defined in Rule 30a-3(d) under

2(b) – the 1940 Act) that occurred during the registrant's last fiscal quarter that have materially affected, or are reasonably likely to materially affect, the registrant's internal control over financial reporting.

Item 3 - Exhibits

Certifications – Attached hereto

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.

BlackRock MuniYield Investment Fund

By:/s/ John M. Perlowski John M. Perlowski Chief Executive Officer (principal executive officer) of BlackRock MuniYield Investment Fund

Date: June 22, 2015

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:/s/ John M. Perlowski

John M. Perlowski Chief Executive Officer (principal executive officer) of BlackRock MuniYield Investment Fund

Date: June 22, 2015

By:/s/ Neal J. Andrews Neal J. Andrews Chief Financial Officer (principal financial officer) of BlackRock MuniYield Investment Fund

Date: June 22, 2015