

**Investment Committee**  
**Friday, August 11, 2023, 9:00 a.m.**  
**Virtual Only**  
[Click here to join the meeting](#)

**AGENDA**

- I. **CALL TO ORDER AND ACCEPTANCE OF AGENDA - *(Committee Action)***
  - A. Pledge of Allegiance
- II. **ACCEPTANCE OF MINUTES (July 14, 2023) - *(Committee Action)***
- III. **BENCHMARK/HURDLE RATE CONSULTANT PRESENTATIONS<sup>1</sup> (90 minutes) - *(Committee Action)*** - Mr. Anderson, Mr. Moss, Mr. Zietlow
  - A. Presentation 1 (30 minutes)
  - B. Presentation 2 (30 minutes)
  - C. Committee Discussion & Selection (30 minutes)
- IV. **TECHNOLOGY STRATEGY & POTENTIAL BUDGET IMPACT<sup>2</sup> (45 minutes) - *(Information)*** - Mr. Anderson, Mr. Vaidya
- V. **TIMBER UPDATE<sup>2</sup> (5 minutes) - *(Information)*** - Mr. Moss, Mr. Zietlow
- VI. **PRIVATE EQUITY UPDATE<sup>2</sup> (10 minutes) - *(Committee Action)*** - Mr. Moss, Mr. Zietlow
- VII. **DISCUSSION**
- VIII. **ADJOURNMENT**

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<sup>1</sup> Executive Session pursuant to N.D.C.C. 44-04-19.2(6) and 44-04-18.4(6)(b) to sequester competitors during a competitive bidding process and to receive and discuss exempt proposal procurement information during a competitive bidding process.

<sup>2</sup> Executive Session pursuant to NDCC 44-04-18.4(1), 44-04-19.1(9), and 44-04-19.2 to discuss confidential commercial information and contract negotiating strategy.

**STATE INVESTMENT BOARD  
INVESTMENT COMMITTEE MEETING  
MINUTES OF THE  
July 14, 2023, MEETING**

**MEMBERS PRESENT:** Thomas Beadle, State Treasurer, Chair  
Joseph Heringer, Trust Lands Commissioner, Vice Chair  
Scott Anderson, CIO  
Dr. Prodosh Simlai, External Representative  
Dr. Ruilin Tian, External Representative

**MEMBER ABSENT:** Eric Chin, Deputy CIO

**STAFF PRESENT:** Derek Dukart, Investment Officer  
Rachel Kmetz, Accounting Manager  
Missy Kopp, Exec. Assistant  
George Moss, Sr. Investment Officer  
Matt Posch, Sr. Investment Officer  
Mike Schmitcke, Investment Accountant  
Ryan Skor, CFO/COO  
Nitin Vaidya, Chief Risk Officer  
Jason Yu, Risk Officer  
Lance Zietlow, Sr. Investment Officer

**GUESTS:** Members of the public

**CALL TO ORDER:**

Treasurer Beadle called the State Investment Board (SIB) Investment Committee (IC) meeting to order at 9:02 a.m. on Friday, July 14, 2023. The meeting was held virtually.

The following Investment Committee members were present representing a quorum, Mr. Anderson, Treasurer Beadle, Commissioner Heringer, Dr. Simlai, and Dr. Tian.

**AGENDA:**

The agenda was considered for the July 14, 2023, meeting.

**IT WAS MOVED BY COMMISSIONER HERINGER AND SECONDED BY DR. TIAN AND CARRIED BY A VOICE VOTE TO APPROVE THE AGENDA FOR THE JULY 14, 2023, MEETING AS DISTRIBUTED.**

**AYES: COMMISSIONER HERINGER, MR. ANDERSON, DR. SIMLAI, DR. TIAN, AND TREASURER BEADLE**

**NAYS: NONE**

**ABSENT: MR. CHIN**

**MOTION CARRIED**

**MINUTES:**

The minutes were considered for the June 16, 2023, meeting.

**IT WAS MOVED BY DR. SIMLAI AND SECONDED BY MR. ANDERSON AND CARRIED BY A VOICE VOTE TO APPROVE THE MINUTES FOR THE JUNE 16, 2023, MEETING AS DISTRIBUTED.**

**AYES: DR. SIMLAI, COMMISSIONER HERINGER, DR. TIAN, MR. ANDERSON, AND  
TREASURER BEADLE  
NAYS: NONE  
ABSENT: MR. CHIN  
MOTION CARRIED**

**LEGACY FUND INVESTMENT POLICY STATEMENT:**

Mr. Anderson reviewed the Legacy Fund Investment Policy Statement (IPS). The IC charter requires the Committee to review IPS changes before it goes to the SIB. Mr. Anderson reviewed the RVK project with the Legacy and Budget Stabilization Advisory Board which resulted in the asset allocation changes. The changes in the IPS were reviewed. Committee discussion followed.

**PRIVATE MARKETS FUNDS MANAGEMENT STRATEGY:**

Mr. Moss and Mr. Zietlow provided an overview of the private markets (PM) activities that have been completed, are currently underway and upcoming initiatives. A technology platform overview was provided. Mr. Zietlow reviewed PM beliefs, fund of funds overview, and PM assets under management (AUM). Mr. Moss discussed the historical perspective behind the current strategy, manager selection, and the investment process. Staff will utilize the team's experience in conjunction with existing relationships and technology to access top-ranked managers and construct a well-diversified private market portfolio that is diversified across vintages and strategies and has been informed by history with the awareness of prevailing conditions. Committee discussion followed.

**SECONDARIES GUIDELINE CHANGE:**

Mr. Moss and Mr. Zietlow shared proposed guideline changes to increase secondaries via the existing BlackRock commitment. There is a \$250 million commitment to Private Opportunities Fund 2020 series with about \$86 million drawn. The current guidelines are for 60% primaries, 30% co-investments, and 10% secondaries. Staff propose changing to 50% primaries, 30% co-investments, and 20% secondaries. Given the characteristics, market environment, and historical analysis of the secondary market, now is an advantageous time to increase secondaries exposure.

**IT WAS MOVED BY COMMISSIONER HERINGER AND SECONDED BY DR. TIAN AND CARRIED BY A ROLL CALL VOTE TO APPROVE THE RECOMMENDATION TO INCREASE THE SECONDARIES ALLOCATION FROM 10% TO 20% VIA A REDUCTION TO PRIMARIES FROM 60% TO 50%, WITHIN BLACKROCK PRIVATE OPPORTUNITIES 2020 FUND,**

**AYES: COMMISSIONER HERINGER, MR. ANDERSON, DR. SIMLAI, DR. TIAN, AND  
TREASURER BEADLE  
NAYS: NONE  
ABSENT: MR. CHIN  
MOTION CARRIED**

**VALUATION:**

Mr. Dukart provided an overview of index valuation. The overview included a discussion on valuation, price, various ways to value markets, and benchmarks. Inputs and outputs of a discounted cash-flow multi-stage S&P 500 valuation market assumptions were discussed. Mr. Dukart discussed the present consensus expectations for S&P 500 and why testing those assumptions can be a useful exercise in navigating markets. Committee discussion followed.

**BANK RISK:**

Mr. Vaidya and Mr. Yu discussed banking risk. Current challenges include the Fed actions to increase interest rate to reduce inflation, risk from outflows related to the debt deal, and Corporate Real Estate (CRE) valuation compression among offices and retail. The current state of CRE and bank deposits was discussed. Mr. Vaidya discussed the reasons that there is currently limited systemic risk. Committee discussion followed.

**CODE OF CONDUCT AFFIRMATION:**

The code of conduct affirmation and SIB policy B-8 were provided for Committee members to complete the annual requirement of reviewing this policy and disclosing any conflicts of interest.

With no further business to come before the Investment Committee, Treasurer Beadle adjourned the meeting at 12:12 p.m.

Prepared by:

Missy Kopp, Assistant to the Board

Confidential materials will be sent to Committee members via a secure link.



# INVESTMENT SYSTEMS STRATEGY

INVESTMENT TEAM

Aug 11, 2023

NORTH  
**Dakota**  
Be Legendary.

Retirement & Investment

# INVESTMENT SYSTEMS STRATEGY

- Goals
- Requirements
- Priorities
- Approach – Applications and Data

## Executive Session

- Planned Systems and Data Architecture
- Roadmap
- Estimated Cost

# INVESTMENT SYSTEMS STRATEGY

## Goals

Procure or develop databases, systems/tools and processes that allow NDRIO Investments team the ability to:

- Leverage high frequency data for portfolio management including daily allocation and cash management
- Create timely and high-quality portfolio and risk analytics, including visualization and presentation, for enhanced investment decision making
- Access and control its current and historical data irrespective of custodian relationship



# INVESTMENT SYSTEMS STRATEGY

## Requirements

### Functional Requirements

#### Daily Portfolio Management

- Allocation and cash management
- Performance (unaudited) for analytics

#### Portfolio Analytics

- Process, Performance, Position, Activities
- Macro-economic and Factor Risk Exposures
- Country, Sector and Manager level exposures
- Market Dynamics and Performance Attribution
- Risk Factor Based Performance Attribution
- Liquidity and Concentration
- Leverage and Counterparty

#### Investment Operations

- Liquidity management
- Investments compliance
- Overlay implementation

### Systems Requirements

#### Applications

- Proprietary NDRIO developed for the functionality required utilizing tools such as Python, R, Power BI
- Include presentation and visualization layers
- Dashboards built on top of analytics

#### Data

- Cloud based under control of NDRIO
- Maintain at least 10-yr of readily accessible history
- Data warehouse/lake must be vendor agnostic
- Daily portfolio and position level data
- Must handle both structured and unstructured data
- Handle Cross-sectional, longitudinal and time series data
- Must support just-in-time functionality
- Must include verification and validation process
- Meta data needed for transportability
- Use a data exchange as a middle layer between data warehouse and data sources

# INVESTMENT SYSTEMS STRATEGY

## Priorities

### Prioritization for effective deployment of systems to aid investment outcomes

#### Short-Term (NTM)

- Risk and Data Platforms Assessment
- Source daily accounting, holdings sourced from custodian
- Load and validate these into third party systems such as Bloomberg and Aladdin
- Develop daily process for daily cash management and rebalancing
- Develop and deploy Performance Attribution
- Develop and deploy Risk Reporting and Analysis
- Investments compliance phase I deployed

#### Medium-Term (1-3yrs)

- Data warehouse and exchange deployment
- Load and validate daily accounting, holdings performance sourced from custodian into NDIT data warehouse
- Load and validate third party analytics and benchmark data into NDIT data warehouse
- Investments compliance fully deployed
- Liquidity management phase I deployed
- Overlay implementation phase I deployed

#### Long-Term (3-5yrs)

- Fully automated data loading, transformation and validation
- Full suite of analytics deployed with dashboards and visualization and presentation layers
- Liquidity management fully deployed
- Overlay implementation fully deployed

# INVESTMENT SYSTEMS STRATEGY

## Approach – Applications

### Development process focused on enabling priorities

#### Agile Development

- Rapid Prototyping of incremental steps
- Quick Meetings
- Proof of Concept

#### Sequencing

- Define data structures and build application one by one for each functional requirement keeping in mind the broader set of requirements.
- Key functional requirements to be addressed first; secondary requirements to be addressed thereafter
- Load, transform and validate data for use by applications in parallel

# INVESTMENT SYSTEMS STRATEGY

## Approach – Data

- Data housed in a data warehouse/lake pulling both structured and unstructured data.
- Data warehouse to include meta-data

### Data sources

- NDRIO data pulled from custodian and internal databases and reports.
- Portfolio data analysis from third party data providers such as Bloomberg, Aladdin and Evestments

### Data Integration

- Data transformation of structured and unstructured data into a higher quality
- Portfolio and position level data load onto third party portfolio and risk analytics tools such as Bloomberg and Aladdin.
- Use a data exchange prior to loading data into the warehouse.
- Custom application overlay to combine internal data and third-party analytics into the warehouse.

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