

## **John Hancock Investment Management LLC**

*(formerly, John Hancock Advisers, LLC)*

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This Form ADV Part 2A Brochure provides information about the qualifications and business practices of John Hancock Investment Management LLC (formerly, John Hancock Advisers, LLC), a Delaware limited liability company (“John Hancock Investment Management”). If you have any questions about the contents of this Brochure, please contact us at (617) 663-3000. The information in this Brochure has not been approved or verified by the United States Securities and Exchange Commission (the “SEC”) or by any state securities authority.

Additional information about John Hancock Investment Management is also available on the SEC’s website at [www.adviserinfo.sec.gov](http://www.adviserinfo.sec.gov).

John Hancock Investment Management is a registered investment adviser. Registration of an investment adviser does not imply a certain level of skill or training.

## **Item 2 – Material Changes**

The following changes have been made to this brochure since its last update on March 28, 2019:

The name of the investment adviser has changed from John Hancock Advisers, LLC to John Hancock Investment Management LLC.

Item 4: John Hancock Investment Management LLC has ceased providing advisory services to John Hancock Worldwide Investors, PLC, a non-U.S. collective investment scheme authorized as an Undertaking for Collective Investment in Transferable Securities (UCITS).

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## Item 4 – Advisory Business

John Hancock Investment Management is a limited liability company founded in 2002 and is an indirect subsidiary of Manulife Financial Corporation (“MFC”), a diversified international management and holding company with interests in companies that are active in, among other things, financial services and insurance. MFC is a publicly traded company based in Toronto, Canada that trades as ‘MFC’ on the Toronto Stock Exchange, New York Stock Exchange (the “NYSE”), and the Philippine Stock Exchange, and under ‘945’ in Hong Kong.

John Hancock Investment Management provides discretionary investment advisory services as a “manager of managers” to certain open-end and closed-end registered investment companies, including exchange traded funds, in the John Hancock family of funds, (together, the “John Hancock Funds”) that are offered to retail investors. Each of the investment companies is organized as a Massachusetts business trust (the “Trusts”).

Pursuant to the terms of investment advisory agreements with the Trusts, John Hancock Investment Management administers the business affairs of each Trust, negotiates and contracts with affiliated and unaffiliated Sub-advisers (“Sub-Advisers”) that provide investment advisory services to individual portfolios of the Trusts, and supervises the activities of the Sub-Advisers on behalf of the Trusts, as further described herein. John Hancock Investment Management is also responsible for performing or paying for various administrative services for the Trusts, including providing office space and all necessary office facilities and equipment to perform its duties under the investment advisory agreements, and providing individuals who are directors, officers, or employees of John Hancock Investment Management to serve (if duly elected or appointed) as Trustees and President of a Trust without remuneration from or other direct cost to the Trust. In addition, John Hancock Investment Management allows the Trusts and the John Hancock Funds to use the recognizable and valuable brand name, “John Hancock.”

The advisory agreement between a Trust and John Hancock Investment Management may be terminated at any time, without the payment of a penalty, by the Board of Trustees of the Trust (the “Board”), by a vote of the majority of the outstanding voting securities of the Trust, or, with respect to any portfolio, by the Board or by the vote of a majority of the outstanding voting securities of the series of shares of such portfolio, on sixty days written notice to John Hancock Investment Management, or by John Hancock Investment Management, on sixty days written notice to the Trust. An advisory agreement will automatically terminate, without payment of any penalty, in the event of its assignment (as defined in the Investment Company Act of 1940, as amended (“1940 Act”)).

John Hancock Investment Management provides advisory services to Institutional Clients (as defined below) with respect to model portfolios created by its affiliates or third parties for it to market and use in connection with its advisory program and that of third party Institutional Clients. John Hancock Investment Management will offer such model portfolios to Institutional Clients under an agreement that sets forth the scope of the

advisory services. Depending upon the terms of the agreement with the Institutional Client to whom John Hancock Investment Management provides the model portfolio and related services, John Hancock Investment Management may agree to act as discretionary manager with respect to use of a model portfolio and it may act as non-discretionary adviser to an Institutional Client sponsoring a separate managed account program that uses the model portfolio. Where John Hancock Investment Management acts as non-discretionary adviser, the decision to use one or more of the model portfolios and related services is that of the Institutional Client to whom the model portfolio or advisory service (including, without limitation any discretionary advisory service) is offered by John Hancock Investment Management and not the decision of John Hancock Investment Management.

This firm brochure is intended for delivery to Institutional Clients only (as defined below) in respect to the services provided by John Hancock Investment Management relating to the Model Portfolios (defined below). This brochure may not be provided to Intermediary Accounts or other non-Institutional Clients in respect to the Model Portfolio services without the prior consent of John Hancock Investment Management. Other model portfolios for which John Hancock Investment Management act as adviser are described in a separate brochure.

### **Description of Investment Advisory Services**

The Investment Oversight team of John Hancock Investment Management employs highly experienced and well-credentialed professionals. A large percentage hold advanced degrees and leading certifications in business and finance.

Key advisory responsibilities include researching new investment products, asset classes, and investment managers, and monitoring the performance of investment managers on an ongoing basis.

As a manager of managers, John Hancock Investment Management administers the business and affairs of the Trusts, including the investment portfolios of the John Hancock Funds, and retains, supervises, and compensates Sub-Advisers to manage the assets of the investment portfolios of the John Hancock Funds. In its role as manager-of-managers, John Hancock Investment Management has supervisory responsibility for managing the investment and reinvestment of the fund's portfolio assets through proactive oversight and monitoring of the Sub-Advisers and the fund. John Hancock Investment Management is responsible for developing overall investment strategies for the fund and overseeing and implementing the fund's continuous investment programs and provides a variety of advisory oversight and investment research services. John Hancock Investment Management also provides management and transition services associated with certain fund events (e.g., strategy, portfolio manager or subadvisor changes) and coordinates and oversees services provided under other agreements. John Hancock Investment Management has ultimate responsibility to oversee a Sub-Adviser and recommend to the fund's Board its hiring, termination, and replacement. In this capacity, John Hancock Investment Management among other things:

- (i) monitors on a daily basis the compliance of the Sub-Adviser with the investment objectives and related policies of the fund;
- (ii) monitors significant changes that may impact the Sub-Adviser's overall business and regularly performs due diligence reviews of the Sub-Adviser;
- (iii) reviews the performance, and monitors the liquidity, of the Sub-Adviser; and
- (iv) reports periodically on such performance to the Board.

John Hancock Investment Management employs a team of investment professionals who provide these ongoing research and monitoring services.

Pursuant to an order from the SEC, John Hancock Investment Management, subject to Board approval, is permitted to appoint a new Sub-Adviser for a fund, or change the terms of a sub-advisory agreement, without obtaining shareholder approval. The SEC order does not, however, permit John Hancock Investment Management to appoint a Sub-Adviser that is an affiliate of John Hancock Investment Management or of the relevant John Hancock Fund (other than by reason of serving as Sub-Adviser), or to increase the sub-advisory fee of an affiliated Sub-Adviser without shareholder approval.

The John Hancock Investment Management team of professionals is responsible for the selection of Sub-Advisers and monitoring Sub-Adviser performance. The team closely monitors each sub-advised portfolio on a daily, monthly, quarterly and annual basis. Team members periodically visit each Sub-Adviser to perform due diligence on the advisory services provided by the Sub-Adviser, as well as the business and compliance operations of the Sub-Adviser. John Hancock Investment Management recommends to the Board the continuation or termination of the sub-advisory agreements at least annually.

The process for selecting new Sub-Advisers involves the use of screening models with and in-depth data analysis as well as the industry knowledge of the members of the investment team. A rigorous five-step process is used in selecting Sub-Adviser candidates:

- (i) initial screening by investment style;
- (ii) firm review to identify managers who demonstrate the highest potential to produce above average results;
- (iii) quantitative analysis of performance;
- (iv) qualitative analysis of the investment team, philosophy, process and risk management practices through in-person interviews; and
- (v) final selection, based on management review of the investment team's findings and in the case of open end funds, management review of the capacity of the Sub-Adviser and the liquidity of the new fund

New Sub-Advisers are also reviewed by the Manulife Global Investment Product Committee.

Sub-Advisers that are selected by John Hancock Investment Management are generally

required to adhere to pre-established value propositions. In monitoring the Sub-Advisers, John Hancock Investment Management generally focuses on longer-term performance rather than short-term performance metrics. Although a Sub-Adviser's performance record is one of several factors used to determine whether a Sub-Adviser should be retained or replaced, a full due diligence review of a Sub-Adviser will be conducted if:

- (i) value proposition criteria are violated;
- (ii) performance is not aligned with the performance blueprint;
- (iii) the Sub-Adviser experiences major organizational changes such as resignations or a change in ownership; or
- (iv) the fund's risk profile is outside of expectations

In the case of exchange-traded funds designed to track the performance of a specified index, John Hancock Investment Management evaluates the subadvisor's performance in relation to the index addition to other benchmarks.

During a full review of a Sub-Adviser, John Hancock Investment Management focuses on identifying and assessing the issue that has caused the full review to be undertaken. If John Hancock Investment Management determines that the Sub-Adviser can no longer deliver its value proposition to the John Hancock Fund and its shareholders, a recommendation will be made to the Board to replace the Sub-Adviser.

Further information regarding John Hancock Investment Management's screening, supervision, and review of Sub-Advisers is described in Item 8 – Methods of Analysis, Investment Strategies and Risk of Loss.

In the event of the replacement of a Sub-Adviser or the merger of one or more John Hancock Funds, John Hancock Investment Management manages the transition or merger transaction of the relevant fund's portfolio investments to the new Sub-Adviser in an effort to minimize transaction costs and avoid other implicit costs. This involves the development of strategic plans to execute all fund events (e.g., fund launches, mergers, and liquidations), taking into consideration downstream impacts on services provided to the John Hancock Funds by global business units, in coordination with legal, compliance, tax, product, operations, and other business units of John Hancock Investment Management or its affiliates, and with the fund's Sub-Adviser(s).

Certain of the Trusts have established "Fund of Funds" which invest in a number of other underlying funds and may invest in certain other types of investments. John Hancock Investment Management is responsible for oversight of the Fund of Funds, including the monitoring of the asset allocation strategies and processes employed by the Sub-Adviser of such funds. John Hancock Investment Management and its Trade Oversight Committee also oversees rebalancing of the funds' assets, and has adopted procedures to help minimize any negative impact of rebalancings on the underlying funds. John Hancock Investment Management also has the authority, with Board approval, to manage a Fund of Funds directly and, in that case, would be responsible for implementing asset allocation strategies, including by rebalancing the Fund of Fund's underlying funds to maintain target allocations. It is not the current practice of John Hancock Investment

Management to exercise this authority in the normal course of business. Certain Fund of Funds warrant focused monitoring by John Hancock Investment Management, which includes evaluating the Sub-Adviser's asset class mix and manager mix decisions, determining the effectiveness of the optimization process, and monitoring cash flows and trading efficiencies.

The John Hancock Investment Management ETF Capital Markets group regularly monitors the John Hancock ETF products (“ETF Funds”) in the market place.

This process is primarily focused on the following areas -

1. Review and monitoring of daily quoting & pricing including bid/ask spreads and premium/discounts on major Exchanges such as the New York Stock Exchange in an attempt to ensure execution efficiency.
2. Review of daily iNAV, trade prices and premium/discount relationship to iNAV to ensure the ETF Fund' remains within the conditions of any applicable SEC exemptive order.
3. Maintain communication with market makers, authorized participants (“APs”) and investment advisers to address any questions or issues related to the ETF Funds.

John Hancock Investment Management develops and provides detailed reports for the Boards of the John Hancock Funds on a regular basis. These reports include performance and liquidity data, due diligence information and compliance reports, based on John Hancock Investment Management’s ongoing portfolio and Sub-Adviser monitoring activities. John Hancock Investment Management also prepares ad hoc reports and consults with Investment and Compliance Committees established by the Boards to monitor Sub-Adviser performance, and assists these committees in the preparation of performance reports to the full Board.

John Hancock Investment Management serves as the investment adviser to certain closed-end John Hancock Funds that use leverage by borrowing from third-party financial institutions. John Hancock Investment Management employs a team that is responsible for overseeing compliance with various asset coverage, portfolio composition, collateral management, and other requirements set forth in the credit facility agreement for each such fund.

John Hancock Investment Management provides various services related to the closed-end John Hancock Funds, including the following:

1. Review and Monitoring of Daily quoting and pricing on major Exchanges (NYSE)
2. Review of daily NAV, trade prices and premium/discount relationship to NAV.
3. Maintain communication with Market Makers
4. Provide consultative services to investors/clients on best practices for closed-end fund execution



5. Monitor for industry research, product development and market structure issues that affect the John Hancock Closed-End Fund platform.

John Hancock Investment Management oversees and assists the investment marketing team of its affiliate, John Hancock Investment Management Distributors LLC (“John Hancock Investment Management Distributors”) with respect to the collection and dissemination of information regarding the investment portfolios of the John Hancock Funds, and the production of quarterly fact sheets, portfolio manager commentaries, and other marketing materials for the Funds. The marketing activities performed by John Hancock Investment Management Distributors are described in Item 10 – Other Financial Industry Activities and Affiliations.

John Hancock Investment Management also oversees the John Hancock family of funds inter-fund lending program, and the management by Sub-Advisers of overnight cash held by the Funds.

John Hancock Investment Management has a committee governance structure that provides oversight of certain of the services John Hancock Investment Management provides to the Funds. The services overseen by the John Hancock Investment Management committees include investment, operational, legal, compliance, risk oversight, disclosure oversight and proxy voting. Each of the John Hancock Investment Management Committees is listed below.

1. Risk and Investment Operations (“RIO”) Committee
2. Trade Oversight Committee
3. Complex Securities Committee
4. Multi-Manager and Multi-Style Funds Investment Oversight Committee
5. Service Provider Oversight Committee
6. Service Fee Committee
7. Disclosure Review Committee
8. Investment Committee
9. Proxy Voting Committee
10. Liquidity Risk Management Committee
11. Investment Risk Oversight Committee

### **Compliance Support and Oversight**

John Hancock Investment Management also provides the John Hancock Funds with ongoing compliance support and oversight through programs designed to ensure that there are adequate procedures in place to deter, detect, correct, and report on control weaknesses that could potentially result in a violation of Federal securities laws. This program is administered pursuant to the requirements of Rule 206(4)-7 of the Investment Advisers Act of 1940 (the “Advisers Act”) and is managed by John Hancock Investment Management’s duly appointed Chief Compliance Officer (“CCO”).

The role of the CCO and the Compliance Office (“CCO’s Office”) is to: (a) develop and monitor a compliance program for John Hancock Investment Management based on an on-going review of risk and current legal and regulatory developments; (b) oversee and manage compliance issues; (c) ensure that John Hancock Investment Management complies with the applicable legal and regulatory requirements; and (d) that the John Hancock Investment Management employees comply with internal policies and procedures. These responsibilities include: designing and overseeing the appropriate implementation of policies and procedures to reasonably assure compliance with applicable federal securities laws and regulations; providing employee training on certain key policies such as Code of Ethics, Insider Trading, Gifts and Entertainment and the Whistleblower Policy; managing and/or participating in investigations into regulatory and compliance issues; and responding to requests for information from regulatory authorities.

In carrying out this role, the CCO’s Office has developed a compliance oversight program designed to reasonably ensure that the requirements imposed by federal securities laws are implemented effectively throughout John Hancock Investment Management and by its third-party service providers, including the Sub-Advisers to the Funds. The Compliance Program involves four main components: (1) development and maintenance of policies and procedures; (2) risk assessments; (3) policy review and evaluation and (4) Sub-Adviser and service provider oversight (“Service Provider Oversight”).

#### *Development and Maintenance of Policies and Procedures*

The CCO’s Office, in conjunction with John Hancock Investment Management’s business units, has developed policies and procedures that address the regulatory risks that are associated with John Hancock Investment Management’s operation. In addition, these policies include procedures that address the manner in which the CCO’s office will oversee the compliance and internal control programs implemented by the Sub-Advisers and service providers. These policies and procedures are evaluated on at least an annual basis by the CCO’s Office, in conjunction with John Hancock Investment Management’s business units, with all material changes requiring CCO’s Office and Board of Directors approval. The CCO’s Office, in conjunction with John Hancock Investment Management’s business units, develops compliance policies as new regulations become effective and continually evaluates and amends existing policies as necessary.

#### *Risk Assessment*

The risk assessment process is a key component of the Compliance Program as it provides an indication of the potential risk associated with each compliance policy and procedure. The risk assessment process is designed to evaluate the effectiveness of the procedures supporting the underlying policies. In conjunction with each John Hancock Investment Management business unit, the CCO’s Office conducts a quantitative, risk-based assessment of the organization’s risk through a review of both inherent and residual risk. Inherent risk is an assessment of the risk of the requirement itself, independent of any operational and/or supervisory controls which are in place. It takes into account

where the origin of the requirement is from (i.e. regulatory guidance, SEC rule, etc), the potential magnitude of non-compliance (e.g. inconsequential or material) and the reputational risk of noncompliance. At the conclusion of the “inherent” risk assessment, a “control maturity” risk assessment is completed which involves an evaluation of the effectiveness of the operating control environment. Residual risk is a product of the inherent and control maturity risk scores and ultimately is representative of the remaining business risk based on existing operational and supervisory controls.

#### *Policy Review and Evaluation*

After assessing the risk environment, the CCO’s Office then focuses on testing the compliance program’s effectiveness. This is conducted through a series of tests that are centered on the operational and control environment that supports the Compliance Policies. In conducting the testing, the CCO’s Office, in conjunction with John Hancock Investment Management’s business units, prepares detailed test scripts which are designed to test the key activities/controls of each process. Once these test scripts are prepared, the CCO’s Office, working with John Hancock Investment Management’s business units, conducts testing on the effectiveness of the control environment. At the conclusion of the testing, the CCO’s Office prepares reports for Senior Management which summarizes the results of the process.

#### *Sub-Adviser and Service Provider Oversight*

The CCO’s Office has established a standardized approach for assessing all Sub-Adviser compliance programs. For prospective Sub-Advisers and prior to any onsite due diligence visit, each Sub-Adviser is asked to provide a narrative description of its approach to evaluating the effectiveness of its compliance program. This narrative is then utilized by the CCO’s Office as the initial step in fulfilling its oversight responsibilities. These narratives are reviewed for adequacy, comprehensiveness and completeness.

The CCO’s Office also requires that each Sub-Adviser complete a due diligence questionnaire and provide additional documentation (e.g. Compliance Manuals, Code of Ethics, etc.) on the firm’s processes, controls, and policies in place to address the requirements of the 1940 Act, the Advisers Act, and other federal securities laws. Responses to these questions are then reviewed by the CCO’s Office to assist in determining the adequacy of the Sub-Advisers’ compliance programs. The responses and requested documents are reviewed before the visit in order to establish a preliminary understanding of the internal controls in place.

In addition, Sub-Adviser evaluation by the CCO’s Office includes onsite due diligence visits. A typical onsite visit to a Sub-Adviser includes sessions with representatives from Legal, Compliance, Trading, Operations, Fund Management and the Chief Compliance Officer. The results of onsite visits are documented and then reviewed with senior management of John Hancock Investment Management and the Funds’ Board of Trustees. If the CCO’s Office is not satisfied with the Sub-Advisers’ compliance program, the Sub-Adviser will not be approved to sub-advise a John Hancock Fund.

The CCO's Office utilizes a similar approach for the ongoing oversight of its Sub-Advisers once they are approved to sub-advise a John Hancock Fund. The CCO's Office continues to conduct on-site due diligence meetings on a prescribed schedule. In addition, the CCO's Office monitors the compliance programs of the Sub-Advisers on an ongoing basis by requiring the completion of quarterly, annual and periodic compliance questionnaires, quarterly certifications concerning adherence to prospectus guidelines and disclosures as well as annual certification of the Sub-Advisers' Code of Ethics. Further, the CCO's Office oversees the monitoring of the investment activities of the Sub-Advisers on a daily basis to ensure that each portfolio investment is in compliance with prospectus guidelines and other regulatory requirements.

Service Provider Oversight employs characteristics similar to those utilized for Sub-Advisers, but also incorporates other techniques based upon additional information which is generally available. As part of its oversight process, the CCO's Office and John Hancock Investment Management's Fund Administration department looks to ensure that these service providers employ satisfactory operational controls and that they are fulfilling their fiduciary and contractual obligations. In order to accomplish this, the Global Wealth and Asset Management Vendor Management Group ("Vendor Management") maintains an oversight framework that employs several tools and processes including, but not limited to:

1. Utilize service provider due diligence questionnaires to enable the CCO's Office and Vendor Management to gather current information on topics such as financial viability, results of regulatory reviews, business continuity programs, information security, business code of conduct issues and a number of other topics to gain a better understanding of the providers overall control environment and risk monitoring process.
2. Perform onsite visits of the service provider. This allows the CCO's Office and Fund Administration to make onsite observations as to the adequacy of the internal operational control environment, and provides a forum to discuss the results of the testing as evidenced in any special reports, operational performance characteristics that are contained in the management reports and future key initiatives the service providers have in their plans.
3. Identify any special, independent reporting that will contribute towards assuring the CCO's Office and Vendor Management that the controls are adequate, complete and operating as intended. These reports may be in the form of SOC-1 Reports, agreed-upon procedure reports or other similar reports. After identifying the existence of such reports, the CCO's Office and Vendor Management obtains copies, and reviews them in detail to assess the adequacy, scope and completeness of testing. The CCO's Office and Vendor Management evaluates the implications of the results of the testing to form a basis for determining the effectiveness of the internal control environment.
4. Identify and obtain any monthly operational management reports that are prepared by the service provider and shared with the management of John Hancock. The purpose

of reviewing these reports is to ensure that operational processes are performing as intended; and to identify areas which require further discussion or explanation from the service provider.

5. Performance evaluations are used for key service providers to ensure that the services being provided to John Hancock continue to meet expectations. Vendor Management facilitates the scorecard process by obtaining feedback from the business owners on a regular basis and providing that feedback to the vendor in a formal performance scorecard.

John Hancock Investment Management serves as the investment adviser to certain closed-end John Hancock Funds that use leverage by borrowing from third-party financial institutions. John Hancock Investment Management employs a team that is responsible for overseeing compliance with various asset coverage, portfolio composition, collateral management, and other requirements set forth in the credit facility agreement for each such fund.

The team provides various services related to the closed-end John Hancock Funds, including the following:

1. Review and Monitoring of Daily quoting and pricing on major Exchanges (NYSE)
2. Review of daily NAV, trade prices and premium/discount relationship to NAV.
3. Maintain communication with Market Makers
4. Provide consultative services to Investors/Clients on Best Practices for closed-end fund execution
5. Monitor for industry research, product development and market structure issues that affect the John Hancock Closed-End Fund platform.

John Hancock Investment Management is also advised by internal and external legal counsel in connection with general investment company governance, exemptive applications and SEC no-action letters drafted and filed on its behalf, dissolutions of subsidiaries, and mergers and acquisitions. Legal counsel services are also provided to John Hancock Investment Management in connection with the investment advisory services John Hancock Investment Management provides to the Funds related to new and existing products, acquisitions of mutual fund assets, determinations of fee breakpoints and valuations. John Hancock Investment Management also receives legal counsel related to proxy materials, tax reporting and communications, and preparation of 15(c) material for review by the Fund's board of trustees.

John Hancock Investment Management provides services to the John Hancock Funds related both to any litigation against the John Hancock Funds and litigation that the John Hancock Funds may initiate. John Hancock Investment Management regularly monitors class actions related to securities held by the John Hancock Funds and provides support for the John Hancock Funds to join such class actions where appropriate.

As of December 31, 2018, John Hancock Investment Management has more than 376 professionals dedicated to its manager of manager services, including professionals in investments, legal, fund administration, compliance and code of ethics oversight.

### **Portfolio Consulting Services**

John Hancock Investment Management also provides non-advisory portfolio analysis services to financial advisers and other investment professionals as part of its marketing efforts. John Hancock Investment Management analyzes model portfolios created by the financial adviser using software to determine the desired market/style/macroeconomic exposure, and provides its analysis to the financial adviser.

John Hancock Investment Management does not charge a fee for this service.

If you are a financial adviser or investment professional receiving free portfolio analysis from John Hancock Investment Management as part of John Hancock Investment Management's marketing services, John Hancock Investment Management is providing this brochure for informational purposes only and there is no advisor-client relationship between John Hancock Investment Management and you or between John Hancock Investment Management and your clients.

### **Model Portfolio Services**

John Hancock Investment Management may engage other firms to create and maintain model portfolios for it to use in connection with its own advisory business, including on a discretionary and a non-discretionary basis, and to market to other investment advisers to use in connection with their separate account programs. Model portfolio commissioned by John Hancock Investment Management may be rules-based or may discretionary in nature.

Where John Hancock Investment Management acts as non-discretionary adviser, John Hancock Investment Management may engaged a third party model provider ("Model Provider") to create and maintain model portfolios (the "Model Portfolios"). John Hancock Investment Management may recommend and sub-licenses the Model Portfolios to third party broker-dealers, banks, insurance companies, investment advisers and other intermediaries ("Intermediaries") in connection with managed account programs sponsored or used by the Intermediaries ("Intermediary Accounts"). The Intermediaries and not John Hancock Investment Management control whether and how the Model Portfolios are implemented and by which Intermediary Accounts the Model Portfolios will be used. As a result, John Hancock Investment Management does not guarantee that Intermediary Accounts for which the Model Portfolios are used will track the Model Portfolios. The Model Portfolios are not individualized to the needs of any Intermediary or any Intermediary Account by John Hancock Investment Management or the Model Provider. John Hancock Investment Management does not provide personalized investment advice to the Intermediaries or to the Intermediary Accounts

through its recommendation of the Model Portfolios or otherwise.

Model portfolios are not tailored to individual clients and clients electing to invest in model portfolios provided by John Hancock Investment Management should determine what types of restrictions they may request in connection with their investments in such model portfolios.

John Hancock Investment Management does not act as custodian for Institutional Clients, Intermediaries, Intermediary Accounts or other persons in respect to the model accounts.

Other model portfolios for which John Hancock Investment Management acts as adviser are described in a separate brochure.

### **Assets Under Management**

As of December 31, 2018, John Hancock Investment Management managed approximately \$182,854,442,183 of assets on a discretionary basis including closed end funds, UCITS, model portfolios and open end mutual funds such as fund of funds and exchange traded funds. As of December 31, 2018, John Hancock Investment Management managed approximately \$594,029,058 of assets on a nondiscretionary basis including model portfolios.

John Hancock Investment Management does not generally provide continuous and regular supervisory or management services on a non-discretionary basis except for Non-discretionary Accounts in its Model Portfolios business. John Hancock Investment Management treats these assets as non-discretionary assets of John Hancock Investment Management given that John Hancock Investment Management did not implement any model portfolio for any intermediary account.

## **Item 5 – Fees and Compensation**

Advisory and sub-advisory fees charged to the John Hancock Funds are based on a percentage of assets under management, except as noted below, and are paid daily or monthly to John Hancock Investment Management by each fund. The advisory fees charged by John Hancock Investment Management to the funds in the Trusts range from 0.29% to 1.55% of assets under management. Sub-advisory fees are calculated daily and paid either monthly or quarterly to the Sub-Adviser of each fund. Sub-advisory fees are negotiated at arms' length. The advisory fees, as well as further information regarding the calculation and payment of such fees, are set forth in the currently effective registration statement of each open-end John Hancock Fund, and in the annual reports to shareholders of each closed-end John Hancock Fund.

With respect to certain closed-end funds, John Hancock Investment Management may receive a fee that is based on a fund's assets as well as portion of the fund's income.

The John Hancock Funds typically pay John Hancock Investment Management to provide administrative and legal services to the John Hancock Funds based on the cost of providing such services (including an allocation of overhead). With respect to certain closed-end John Hancock Funds, however, these services are provided at a set administrative fee to John Hancock Investment Management. In addition to advisory fees and administrative fees charged by John Hancock Investment Management, the John Hancock Funds pay other expenses such as qualified custodian fees, external auditor fees and transfer agency fees.

John Hancock Investment Management earns fees in connection with licensing the Model Portfolios to Intermediaries which in the case of nondiscretionary advisory services are set forth in the agreement with the Intermediary. The fees for discretionary advisory services for model portfolios are describe in the separate brochure for such services.

#### Compensation from Affiliated Entities

As a manager of managers, John Hancock Investment Management retains, supervises, and compensates Sub-Advisers to manage the assets of the investment portfolios of the John Hancock Funds. In this capacity, John Hancock Investment Management may perform research and due diligence on affiliated investment advisers as well as non-affiliated investment advisers. When John Hancock Investment Management selects an affiliated investment adviser as a Sub-Adviser to a John Hancock Fund, management fees paid to the Sub-Adviser flow indirectly to John Hancock Investment Management's parent companies. These fees are in addition to the advisory fees paid to John Hancock Investment Management. Likewise, when a John Hancock Fund that is a Fund of Funds invests in other John Hancock Funds including exchange traded funds advised by John Hancock Investment Management, fees and other compensation flow directly or indirectly to John Hancock Investment Management and its affiliates in the form of additional management fees and administrative fees. Broker-dealers and insurance companies affiliated with John Hancock Investment Management may also receive 12b-1 fees and/or shareholder servicing fees based on the amount of assets invested in share classes of the funds that provide for such fees. In addition, several John Hancock Funds re-invest collateral from securities lending activities in a fund managed by an affiliate of John Hancock Investment Management. The amount of fees and other compensation paid by the John Hancock Funds to John Hancock Investment Management and its affiliates varies, and is described in the prospectus of each John Hancock Fund. In addition, John Hancock Investment Management personnel may be invested personally in the John Hancock Funds.

In light of these circumstances, John Hancock Investment Management may face a conflict of interest to the extent it has an incentive to provide more favorable research and analysis with respect to affiliated investment managers based on the fact that John Hancock Investment Management and its affiliates will receive compensation or other benefits if affiliated investment managers are selected as Sub-Advisers for the John Hancock Funds. These potential conflicts are described in Item 10 – Other Financial



Industry Activities and Affiliations. In recommending Sub-Advisers for the John Hancock Funds, John Hancock Investment Management endeavors to utilize its best independent judgment as part of its overall evaluation process described above.

## **Item 6 – Performance-Based Fees and Side-By-Side Management**

John Hancock Investment Management does not receive performance-based fees for advisory services provided to clients. Therefore, John Hancock Investment Management does not engage in side-by-side management of clients with performance-based fees.

## **Item 7 – Types of Clients**

John Hancock Investment Management provides discretionary investment advisory services as a “manager of managers” to the John Hancock Funds. John Hancock Investment Management recommends and sub-licenses model portfolios to Intermediaries and other Institutional Clients on both a discretionary and a non-discretionary basis. Some of these model portfolio advisory services are described in a separate brochure.

## **Item 8 – Methods of Analysis, Investment Strategies and Risk of Loss**

John Hancock Investment Management does not directly offer advice on specific investments. Instead, John Hancock Investment Management contracts with and reviews the performance of Sub-Advisers that provide investment management services to the John Hancock Funds. Security analysis is performed and methods of analysis are selected by the Sub-Advisers, which use investment strategies determined appropriate, subject to supervision by John Hancock Investment Management and the Board, if applicable, to achieve the investment objectives set forth in the investment guidelines of the applicable fund.

### Research of New Investment Products, Asset Classes, and Investment Managers

John Hancock Investment Management consults with the Trusts and, on behalf of the Trusts, with various affiliated business units to determine investment needs of existing and proposed John Hancock Funds, identify opportunities for new products and asset classes, and develop appropriate solutions. Topics of consultation may include fund launches, fund adoptions, manager replacements, and changes to the investment strategies of existing products (“Product Changes”) and other corporate actions. To

generate ideas, John Hancock Investment Management conducts market, industry, and competitive research. This process involves:

- monitoring sales and industry trends; identifying investment products that are gaining market acceptance, analyzing market share (by distribution channel and fund category), examining new product launches, and conducting product gap analysis to identify potential areas for new products or product features;
- utilizing asset manager relationships, researching market publications, and conducting external manager research to inform research into potential new asset classes;
- conducting research related to partnership and acquisition opportunities, including Sub-Adviser searches and fund adoptions; and
- analyzing data from third-party vendors, including Morningstar, FactSet, Bloomberg, and Lipper.

The Manulife Global Investment Product Committee approves the decision to develop any new product or any Product Changes.

In addition to conducting research to identify new opportunities, John Hancock Investment Management also collaborates with affiliated business units to implement Product Changes. This includes working with internal and external legal counsel, fund administration, tax, and compliance to coordinate all Product Changes on behalf of the Trusts. In doing so, John Hancock Investment Management coordinates compliance with the 1940 Act, the IRS, ERISA, CFTC and SEC and other related regulations and requirements.

#### Initial Screening of Sub-Advisers

To identify appropriate Sub-Advisers for the John Hancock Funds, John Hancock Investment Management utilizes an extensive screening process, which involves both the review of the Sub-Adviser and the particular individuals or investment team proposed to manage the fund. The Sub-Adviser selection and review process consists of the following five steps:

- **Initial Screening:** John Hancock Investment Management runs preliminary screens by investment style, and leverages the industry knowledge of the analyst team to determine which portfolios and asset management firms manage an investment strategy that would meet the desired solution and have performed well over time versus their peers.
- **Firm Review:** John Hancock Investment Management identifies managers it believes demonstrate the highest probability of producing above average results for clients. The focus is typically on established firms with sizeable assets under

management that are best positioned to recruit and retain experienced and talented portfolio managers, access wider resources to help make well-researched investment decisions, and capitalize on proven economies of scale when buying and selling securities.

- **Quantitative Analysis:** Once the field of potential Sub-Advisers has been narrowed, John Hancock Investment Management conducts extensive quantitative analysis. John Hancock Investment Management analyzes each portfolio's style by examining returns-based style analysis, including the historical measures of R-squared (*i.e.*, the degree to which the portfolio's performance can be explained by the benchmark), active share, tracking error, and portfolio holdings. This provides an initial view of a potential Sub-Adviser's investment style biases. After investment style has been analyzed, John Hancock Investment Management reviews performance in greater depth. It evaluates the fund's performance attribution through various classification groups (*i.e.*, sector, market cap, region, factor), volatility characteristics using measures such as standard deviation, upside/downside capture, Sharpe Ratio (*i.e.*, a measure of risk-adjusted performance) and Information Ratio (*i.e.*, a measure of the manager's ability to generate consistent excess returns relative to a benchmark). This allows John Hancock Investment Management to gain deeper insight into the strengths and weaknesses of a particular manager, and to understand its overall "performance blueprint" and investment capacity as well as the liquidity of its investments.
- **Qualitative Analysis:** In conjunction with quantitative analysis, John Hancock Investment Management conducts in-depth manager interviews to verify its initial findings and uncover vital information that can only be determined face-to-face. During the interview, John Hancock Investment Management focuses on performance, investment process, investment capacity, portfolio concentration, liquidity of securities to be purchased by the manager, the quality of people managing the money and the firm, and the stability of the organization (*i.e.* whether John Hancock Investment Management believes it can maintain the culture and environment that has made it successful). The ultimate goal of John Hancock Investment Management's approach is to define the most prominent aspects of the manager's value proposition. Value propositions define an investment strategy's essential purpose and what makes it unique. They are the key to a strategy's past success and the link to future success. John Hancock Investment Management believes that value propositions must be observable or measurable, and requires that each Sub-Adviser ultimately agree that violating its value proposition(s) will lead to a review and possible replacement.
- **Final Selection:** At the end of this process, John Hancock Investment Management will generally identify two or three candidates that are strong contenders for ultimate selection. John Hancock Investment Management reviews these potential Sub-Advisers with the Manulife Global Investment Product Committee to reach a final decision to retain one or more of the candidates as Sub-Advisers.

## Ongoing Reviews

Once a Sub-Adviser is hired to manage a John Hancock Fund, John Hancock Investment Management performs continuous monitoring to ensure it meets value propositions and performance expectations. This review includes not only the monitoring of the performance of the Fund but also a review of the Sub-Adviser's overall operations to ensure that the business affairs of the Sub-Adviser remain sound. John Hancock Investment Management closely monitors every investment portfolio on a daily, monthly, quarterly and annual basis. John Hancock Investment Management believes that this level of ongoing review is essential for determining whether a Fund continues to fulfill its value proposition. As part of this monitoring process, John Hancock Investment Management develops and maintains sophisticated performance reporting systems. These systems deliver Fund-level performance data and fee-related information for the investment platforms. In addition, the team creates and reviews detailed performance attribution packages, including all asset allocation products.

In the case of exchange-traded funds designed to track the performance of a specified index, John Hancock Investment Management evaluates the subadvisor's performance in relation to the index in lieu of other benchmarks.

John Hancock Investment Management team members periodically make due diligence visits to each Fund Sub-Adviser (generally once a year). These meetings are preceded by an in-depth due diligence questionnaire that is completed by the Sub-Adviser detailing organizational, investment, and performance related matters. In addition to performance review discussions with portfolio managers, other topics addressed in a due diligence review may typically include business updates and discussions of risk management practices with senior management.

Ongoing monitoring and/or due diligence reviews may typically include, as appropriate:

- a review of the Sub-Adviser's use of derivatives and other complex investment instruments and strategies; any change in the Sub-Adviser's strategy regarding the use of derivatives and complex securities is reviewed and reported to the Board;
- an in-depth review of the Sub-Adviser's strategy for managing investment-related risk, including the Sub-Adviser's handling of liquidity issues as they relate to individual securities;
- a review of the background of each of the Sub-Adviser's portfolio managers and analysts; and
- involvement of John Hancock Investment Management's CCO and/or his staff in the due diligence review of a Sub-Adviser's business operations and risks.

John Hancock Investment Management maintains detailed due diligence reports for all

John Hancock Funds, provides detailed due diligence information to the Board with respect to each John Hancock Fund and its Sub-Adviser(s), and assists the Investment, Audit and Compliance committees established by the Boards to monitor Sub-Adviser performance.

### Risk of Loss

Investing in funds involves risk of loss that clients should be prepared to bear. Many factors affect performance, and past performance is not indicative of future results. Fund shares will fluctuate in price, meaning investors in the John Hancock Funds could lose money by investing in such funds. As with the managers of all investment funds, there is no assurance that any of the Sub-Advisers analyzed by John Hancock Investment Management will achieve their investment objective, and a fund's investment strategy may not produce the intended results. During periods of heightened market volatility or reduced liquidity, governments, their agencies, or other regulatory bodies, both within the United States and abroad, may take steps to intervene. These actions, which could include legislative, regulatory, or economic initiatives, might have unforeseeable consequences and could adversely affect a fund's performance or otherwise constrain a fund's ability to achieve its investment objective.

### Selection and Management Risk

Actively managed investment portfolios like those of the John Hancock Funds are subject to management risk. The securities or instruments analyzed and selected by the Sub-Advisers under the supervision of John Hancock Investment Management may decline in value. Security or instrument selection risk may cause the investment portfolio of a John Hancock Fund to underperform other portfolios with similar investment objectives and investment strategies even in a rising market. Despite strategies to achieve positive investment returns regardless of general market conditions, the values of investments will change with market conditions, and investments in John Hancock Funds under the supervision of John Hancock Investment Management could underperform other investments or be lost entirely.

### Multi-Manager Approach; limited universe of Sub-Advisers and underlying funds

The investment styles employed by the managers of underlying funds of John Hancock Funds that are funds of funds may not be complementary. The ability of Funds of Funds to achieve their investment objectives depends upon the Sub-Advisers' skill in determining such fund's strategic allocation to investment strategies and in selecting the best mix of underlying funds. The allocation of investments among the different Sub-Advisers managing underlying funds with different styles and asset classes, such as equity, debt, U.S., or foreign securities, may have a more significant effect on the performance of a Fund of Funds when one of these investments is performing more poorly than the other. The interplay of the various strategies employed by the managers of underlying funds may result in a Fund of Funds holding a concentration of certain types of securities. This concentration may be beneficial or detrimental to the

performance of the Fund of Funds depending upon the performance of the securities held by the underlying funds and the overall economic environment. The underlying funds selected by a Sub-Adviser for the portfolio of a Fund of Funds may underperform the market generally or other funds that could have been selected for the portfolio.

There is no assurance that allocation decisions will result in the desired effects. Investment decisions made by a Sub-Adviser may cause a Fund of Funds to incur losses or to miss profit opportunities on which it might otherwise have capitalized. Moreover, at times, a Sub-Adviser may invest fund assets in underlying funds managed by a limited number of Sub-Advisers. In such circumstances, the Fund of Fund's performance could be substantially dependent on the performance of these Sub-Advisers. Similarly, the Sub-Adviser's allocation of a Fund of Fund's assets to a limited number of underlying funds may adversely affect the performance of the fund of funds, and, in such circumstances, it will be more sensitive to the performance and risks associated with those funds and any investments in which such underlying funds focus.

#### Risks Involved in the Development of Model Portfolios and Managing portfolios based on Model Portfolios

Human and technological errors may occur in connection with designing, writing, testing, maintaining and/or monitoring the Model Portfolios or model portfolios created by other third parties. Such model portfolios may use instruments that are not liquid, are subject to trading halts, suspensions or termination of trading, create tax, performance or other issues for investors or do not provide the investment exposure sought by the investment strategy underlying the particular model portfolio.

Any imperfections, limitations, inaccuracies or incorrect assumptions underlying the model portfolios may materially adversely affect the ability of an Institutional Client or of John Hancock Investment Management or any other investment adviser to implement the model portfolio. Inaccuracies in assumptions may include, without limitation, assumptions regarding the global economy and financial markets, interest rates, and regulatory changes. In developing model portfolios, providers may simplify assumptions that may limit their effectiveness. Models that appear to explain prior market data can fail to predict future market events. Further, the data used in models may be inaccurate and/or it may not include the most current information available. In addition, models may also not address prolonged changes in market conditions.

In addition, when John Hancock Investment Management provides Model Portfolios to Institutional Clients as well as other model portfolios to others on a non-discretionary basis, it will not monitor any underlying client's account. As a result, the Model Portfolios and other model portfolios may not be personalized for the underlying client's needs unless the client's own investment adviser does so.

#### Risks Related to the Use of Computer Based Applications (also known as algorithms) to Create Model Portfolios

The Model Portfolios and other model portfolios commissioned by John Hancock Investment Management may be developed based on computer based applications, which are commonly referred to as algorithms. There are risks associated with utilizing computer based applications to create model portfolios, including, without limitation, the following:

- Computer based applications generally use certain economic assumptions that may not be updated in a timely manner or reflect shifts in the market, and may not accurately predict future market movements or characteristics.
- The use of computer based applications may affect a model's exposure to certain sectors or types of investments, notwithstanding whether such sectors or investments are in or out of favor in the market.
- The output of the computer based applications depends upon the accuracy of the information input into the investment tool.
- There may be certain factors or variables which have not been included in the computer based application. To the extent some questions are over-generalized, ambiguous or designed to fit a pre-determined option, the output may not reflect needs or goals of a model provider user, separate account program sponsor or underlying client relying on the output or model portfolio created using the output.
- Computer based applications may have errors, omissions, imperfections and malfunctions, and human judgment plays a role in building, utilizing, testing, modifying, and implementing the algorithms and formulas used in computer based applications. Errors in the application may be difficult to detect and may go undetected for long periods of time and some errors may never be detected. While this risk may be mitigated by testing, there is no assurance that the algorithm will always work as intended.
- Computer based applications are subject to technical issues including programming and data inaccuracies, are based on assumptions, and rely on data that is subject to limitations (e.g., inaccuracies, staleness), any of which could adversely affect their effectiveness or predictive value.

In addition, model programs based on computer based applications may rebalance a client's account based on factors other than just market conditions and may rebalance on a more frequent basis than non-algorithmically created model portfolios.

#### Securities Lending Risk

If a borrower of a John Hancock Fund's securities fails financially, the fund's recovery of the loaned securities may be delayed or the fund may lose its rights to the collateral, which could result in a loss to the fund. While securities are on loan, a fund is subject to several risks, including: the risk that the borrower may default on the loan and that the collateral could be inadequate in the event the borrower defaults, the risk that the earnings on the collateral invested may not be sufficient to pay fees incurred in connection with the loan, the risk that the principal value of the collateral invested may decline and may not be sufficient to pay back the borrower for the amount of the

collateral posted, the risk that the borrower may sell the loaned securities short, which may place downward pressure on the market prices of the loaned securities, the risk that return of loaned securities could be delayed and could interfere with portfolio management decisions by the fund's Sub-Adviser, and the risk that any efforts to recall the securities for purposes of voting may not be effective.

### Strategy Risks

In addition to the risks detailed herein, each investment strategy implemented by a Sub-Adviser is subject to investment risks that are unique to that strategy, and a fund's investment strategy may not produce the intended results. The specific risks associated with the investment strategy of each John Hancock Fund are set forth in the currently effective registration statement of the fund.

### Index risk

In the case of exchange-traded funds designed to track the performance of a specified index (a "ETF Index Fund"), the ETF Index Fund will be negatively affected by general declines in the securities and asset classes represented in the Index. In addition, because the fund is not "actively" managed, unless a specific security is removed from the Index, the fund generally would not sell a security because the security's issuer was in financial trouble. Market disruptions and regulatory restrictions could have an adverse effect on the fund's ability to adjust its exposure to the required levels in order to track the Index. The ETF Index Fund also does not attempt to take defensive positions under any market conditions, including declining markets. Therefore, the fund's performance could be lower than funds that may actively shift their portfolio assets to take advantage of market opportunities or to lessen the impact of a market decline or a decline in the value of one or more issuers. The Index is constructed and maintained using third party data that is believed to be reliable, but there is no guarantee of the accuracy or availability of such third-party data. In addition, the market value of the Index is calculated by a third party, and there is no guarantee that such calculation will be accurate. Errors in the construction or calculation of the market value of the Index may occur from time to time. Any such errors may not be identified and corrected for some period of time. These errors and corrections may have an adverse impact on the fund and its shareholders, including in the form of increased costs and/or tracking error. In addition, neither the fund, the index provider, nor the advisor can guarantee the availability or timeliness of the production of the Index.

### Industry or sector investing risk

When a fund's investments are concentrated in a particular industry or sector of the economy, they are not as diversified as the investments of most funds and are far less diversified than the broad securities markets. This means that concentrated funds tend to be more volatile than other funds, and the values of their investments tend to go up and down more rapidly. In addition, a fund that invests in a particular industry or sector is particularly susceptible to the impact of market, economic, regulatory, and other factors



affecting that industry or sector. From time to time, a small number of companies may represent a large portion of a single industry or a group of related industries as a whole.

#### Cybersecurity and operational risk

Intentional cybersecurity breaches include unauthorized access to systems, networks, or devices (such as through “hacking” activity); infection from computer viruses or other malicious software code; and attacks that shut down, disable, slow, or otherwise disrupt operations, business processes, or website access or functionality. In addition, unintentional incidents can occur, such as the inadvertent release of confidential information (possibly resulting in the violation of applicable privacy laws). A cybersecurity breach could result in the loss or theft of customer data or funds, the inability to access electronic systems (“denial of services”), loss or theft of proprietary information or corporate data, physical damage to a computer or network system, or costs associated with system repairs. Such incidents could cause a fund, John Hancock Investment Management, a Sub-Adviser, or other service providers to incur regulatory penalties, reputational damage, additional compliance costs, litigation costs or financial loss. In addition, such incidents could affect issuers in which a fund invests, and thereby cause the fund’s investments to lose value.

Cyber-events have the potential to materially affect a fund and John Hancock Investment Management's relationships with accounts, shareholders, clients, customers, employees, products, and service providers. The Funds have established risk management systems reasonably designed to seek to reduce the risks associated with cyber-events. There is no guarantee that a fund will be able to prevent or mitigate the impact of all cyber-events.

A fund is exposed to operational risk arising from a number of factors, including, but not limited to, human error, processing and communication errors, errors of the fund’s service providers, counterparties, or other third parties, failed or inadequate processes and technology or system failures.

## **Item 9 – Disciplinary Information**

Not applicable.

## **Item 10 – Other Financial Industry Activities and Affiliations**

John Hancock Investment Management is an indirect, majority-owned subsidiary of MFC. As such, John Hancock Investment Management is affiliated with a number of investment advisers, investment companies, broker-dealers and insurance companies. Except as noted below, John Hancock Investment Management does not believe that

these relationships are material to John Hancock Investment Management's advisory business with respect to the John Hancock Funds.

### Broker-Dealers

John Hancock Distributors LLC ("JHD") is the distributor of the John Hancock Variable Insurance Trust ("JHVIT"), a no-load, open-end investment company, advised by John Hancock Variable Trust Advisers LLC, that serves as the underlying investment medium for variable annuity and variable life contracts issued by JH Life USA and affiliated entities. John Hancock Investment Management Distributors LLC ("John Hancock Investment Management Distributors") is the distributor of all of the Trusts advised by John Hancock Investment Management other than John Hancock Exchange-Traded Fund Trust. JHD and John Hancock Investment Management Distributors are each related persons of John Hancock Investment Management. John Hancock Investment Management Distributors and JHD are broker-dealers registered with the SEC and are regulated by Financial Industry Regulatory Authority ("FINRA").

The marketing team of John Hancock Investment Management Distributors creates and publishes information regarding the investment portfolios of the John Hancock Funds for all audiences, including shareholders, financial advisors, institutions, and for internal use by John Hancock Investment Management and its affiliates. This includes quarterly fact sheets and other materials that contain data regarding portfolio performance and holdings, objective, strategy and risk considerations for each John Hancock Fund. The marketing team also publishes key portfolio data directly to the Funds' Web site on a monthly basis, including updated performance, holdings, risk statistics and portfolio composition. In addition, the marketing team collects, edits and publishes portfolio manager commentaries on the funds each quarter and also publishes ad hoc market and economic commentary and research from the Sub-Advisers of the funds to help keep investors abreast of market conditions that may impact portfolio performance and to facilitate the education of the funds' sales and marketing personnel.

The John Hancock Investment Management Distributors Compliance department is responsible for the review and principal approval of marketing material related to the Funds. The Compliance Department reviews marketing material taking into account the FINRA rules regarding communications and other regulatory rules related to investment company/mutual fund advertising. John Hancock Investment Management Distributors Compliance is also responsible for maintaining appropriate securities registrations for the firm and associated persons.

The John Hancock Investment Management Distributors Compliance department also performs testing of certain items in the Trusts' 38a-1 compliance program that pertain to John Hancock Investment Management Distributors as distributor of certain of the Funds. John Hancock Investment Management Distributors Compliance coordinates with the CCO's Office in performing this task. John Hancock Investment Management Distributors also performs annual testing of its compliance program, required under

FINRA's rules 3110, 3120 and 3130. John Hancock Investment Management Distributors makes the results of these tests available to the CCO's Office.

Foreside Fund Services, LLC ("Foreside") serves as distributor of the ETF Funds within the John Hancock family of funds. Foreside is not affiliated with John Hancock Investment Management.

#### Investment Companies

As described above, John Hancock Investment Management serves as investment adviser to the Trusts, and John Hancock Variable Trust Advisers LLC, an affiliated investment adviser, serves as investment adviser to JHVIT.

#### Insurance Companies

MFC is the sole owner of Manufacturers Life Insurance Company, which is indirectly the sole owner of John Hancock Life Insurance Company (U.S.A.), which in turn wholly owns, directly or indirectly, a number of subsidiaries, including the following: John Hancock Investment Management Distributors, Manulife Investment Management (US) LLC, John Hancock Life & Health Insurance Company, John Hancock Life Insurance Company of New York, The Berkeley Financial Group, LLC, Hancock Natural Resource Group, Inc., Hancock Capital Investment Management, LLC and John Hancock Signature Services, LLC.

#### Investment Advisers

John Hancock Investment Management has entered into sub-advisory agreements with Manulife Investment Management (North America) Limited and Manulife Investment Management (US) (the "Affiliated Sub-Advisers"), each of which is controlled by MFC.

Advisory arrangements involving Affiliated Sub-Advisers present certain potential conflicts of interest. For each fund subadvised by an Affiliated Sub-Adviser, MFC will benefit not only from the net advisory fee retained by John Hancock Investment Management but also from the subadvisory fee paid by John Hancock Investment Management to the Affiliated Sub-Adviser. Consequently, MFC is viewed as benefiting financially from: (i) the appointment of or continued service of Affiliated Sub-Advisers to manage the funds; and (ii) the allocation of the assets of Fund of Funds to other funds ("Underlying Funds") having Affiliated Sub-Advisers. In each case, the Affiliated Sub-Adviser benefits through the additional subadvisory fees they earn on the additional assets resulting from such appointment or allocation.

In addition, MFC and its John Hancock insurance company subsidiaries may benefit from investment decisions made by Affiliated Sub-Advisers, including allocation decisions with respect to a Fund of Funds' assets. For example, Affiliated Sub-Advisers, by selecting more conservative investments, or by making more conservative allocations of a Fund of Funds' assets by increasing the percentage allocation to Underlying Funds which invest primarily in fixed-income securities or otherwise, may reduce the regulatory

capital requirements which the John Hancock insurance company subsidiaries of MFC must satisfy in order to support their guarantees under variable annuity and insurance contracts which they issue. In all cases, however, John Hancock Investment Management in recommending to the Board the appointment or continued service of Affiliated Sub-Advisers and the Affiliated Sub-Advisers in selecting investments and allocating each Fund of Funds' assets have a fiduciary duty to act in the best interests of the funds and their shareholders. As part of its oversight of the funds and the Sub-Advisers, John Hancock Investment Management will monitor to ensure that allocations are conducted in accordance with these principals. Moreover, the Trusts' "manager of managers" exemptive order from the SEC provides that the Trusts must obtain shareholder approval of any sub-advisory agreement appointing an Affiliated Sub-Adviser as the Sub-Adviser to a fund (in the case of a new fund, the initial sole shareholder of the fund, an affiliate of John Hancock Investment Management and MFC, may provide this approval). The independent trustees of the Board are aware of and monitor these conflicts of interest.

All investment management arrangements with related parties are conducted on an arms-length basis as to neither advantage nor disadvantage the Adviser's other clients or the above mentioned related parties.

#### Self-Indexing Exchange-Traded Funds

John Hancock Investment Management provides investment advisory services to certain exchange-traded funds based on indices managed by the funds' sub-adviser (the "Index Provider"). John Hancock Investment Management compensates the Index Provider pursuant to a license agreement for use of the indices. John Hancock Investment Management also compensates the Index Provider, as sub-adviser to the exchange-traded funds, through the payment of sub-advisory fees. The Index Provider is not affiliated with John Hancock Investment Management.

## **Item 11 – Code of Ethics, Participation or Interest in Client Transactions and Personal Trading**

#### Code of Ethics

John Hancock Investment Management's Code of Ethics (the "Code") establishes standards of business conduct for John Hancock Investment Management and its "Covered Employees" (which includes all officers and employees with access to non-public portfolio information) and all persons who provide investment advice on behalf of John Hancock Investment Management and are subject to the supervision and control of John Hancock Investment Management ("Supervised Persons").

The Code states that each Covered Employee is responsible for maintaining the very highest ethical standards when conducting company business. In general, John Hancock Investment Management and its Covered Employees are required to (i) at all times place

the interests of clients first; (ii) ensure that all personal securities transactions are conducted consistent with this Code and in such a manner as to avoid any actual or potential conflict of interest or any abuse of a position of trust and responsibility; (iii) not take inappropriate advantage of their positions or engage in manipulative practices such as front running or manipulative market timing; (iv) comply with all applicable federal securities laws; and (v) promptly report any violation of the Code to the CCO.

The Code is designed to prevent abuses in the investment advisory business that can arise when conflicts of interest exist between the employees of an investment adviser and its clients. When conflicting interests cannot be reconciled, the Code makes clear that, first and foremost, Covered Employees owe a fiduciary duty to John Hancock clients. The Code contains specific rules prohibiting defined types of conflicts. Since every potential conflict cannot be anticipated by the Code, it also contains general provisions prohibiting conflict situations.

The Code is also designed to permit John Hancock Investment Management to monitor various securities transactions by Covered Employees, including those in shares of any mutual funds advised by John Hancock Investment Management in which they may have a direct or indirect beneficial ownership interest. Under the Code and subject to limited exceptions, Covered Employees must obtain the approval of the CCO or his designee before acquiring any covered security in an IPO or limited offering. However, any Covered Employee who participates in, or has prior knowledge of, purchase or sale recommendations made to a fund generally is prohibited from acquiring any covered security in an IPO.

The Code includes sections on policies in and outside the Code, reporting requirements and other disclosures inside and outside the Code, reporting violations, interpretation and enforcement, exemptions and appeals, education of employees and recordkeeping.

This Code will be provided to any client or prospective client upon request by contacting John Hancock Investment Management at 617-663-3000.

John Hancock Investment Management has also adopted an Amended and Restated Policy Statement and Procedures on Insider Trading in accordance with Section 204A of the Advisers Act which establishes procedures to prevent the misuse of material information by its officers, directors and employees. John Hancock Investment Management and its related persons may, from time to time, come into possession of material nonpublic and other confidential information which, if disclosed, might affect an investor's decision to buy, sell or hold a security. Under applicable law, John Hancock Investment Management and its related persons may be prohibited from improperly disclosing or using such information for their personal benefit or for the benefit of any other person, regardless of whether such other person is a client. Accordingly, should such persons come into possession of material nonpublic or other confidential information with respect to any company, they may be prohibited from communicating such information to, or using such information for the benefit of, their respective clients, and have no obligation or responsibility to disclose such information to, nor

responsibility to use such information for the benefit of, their clients when following policies and procedures designed to comply with law.

#### Participation or Interest in Client Transactions

Each of the Trusts' Sub-Advisers, including the Trusts' Affiliated Sub-Advisers, manage a number of accounts other than the Trusts' portfolios subject to oversight by John Hancock Investment Management and the Board. Although investment determinations for the Trusts' portfolios will be made by the Sub-Advisers independently from the investment determinations made by them for any other account, investments deemed appropriate for the Trusts' portfolios by the Sub-Advisers may also be deemed appropriate by them for other accounts. Therefore, the same security may be purchased or sold at or about the same time for both the Trusts' portfolios and other accounts. In such circumstances, the Sub-Advisers may determine that orders for the purchase or sale of the same security for the Trusts' portfolios and one or more other accounts should be combined. In this event the transactions will be priced and allocated in a manner deemed by the Sub-Advisers to be fair and equitable and in the best interests of the Trust portfolios and such other accounts, over time.

From time to time, employees and principals of John Hancock Investment Management or a related person may also invest or otherwise have an interest in securities owned by or recommended to John Hancock Investment Management's clients.

Similarly, some or all of the financial services businesses under common control with John Hancock Investment Management may invest in securities that are also owned by John Hancock Investment Management's clients. Any of such persons may invest or otherwise have an interest, either directly or indirectly, in certain pooled vehicles, which, in turn, may invest in securities held in other managed accounts. This presents a conflict of interest to the extent that such businesses and persons have an incentive: (i) to recommend or otherwise favor securities or other vehicles in which they invest or otherwise have an interest where doing so would not be in a client's best interest; or (ii) to put their own interest ahead of a client's interest. As these situations can involve potential conflicts of interest, John Hancock Investment Management has implemented policies and procedures relating to personal securities transactions and insider trading, that are designed to identify potential conflicts of interest, to prevent or mitigate actual conflicts of interest and to resolve such conflicts appropriately if they do occur. John Hancock Investment Management has also implemented policies and procedures designed to review and monitor trading associated with fund mergers, liquidations and asset allocation fund rebalancing, in order to identify and address potential issues associated with these transactions in a proactive and timely manner.

#### Conflicts of Interest in connection with the Model Portfolios

Recommendation of the Model Portfolios to Intermediaries by John Hancock Investment Management raises potential conflicts of interest. In connection with development of the Model Portfolios, the Model Provider may use ETFs and other registered management

investment companies (“John Hancock Investment Management Managed Funds”) managed by John Hancock Investment Management, in lieu of other instruments, where possible to constitute the Model Portfolios. To the extent that the Model Provider does use John Hancock Investment Management Managed Funds as the components of the Model Portfolios, this will generate advisory and other fees for John Hancock Investment Management when Intermediary Accounts and other persons utilize the Model Portfolios. In addition, the management fees of ETFs managed by John Hancock Investment Management may be higher than fees charged by other ETFs.

Some Institutional Clients and Intermediaries to whom John Hancock Investment Management provides Model Portfolios may have business relationships with John Hancock Investment Management or its affiliates. For example, John Hancock Investment Management or its affiliates may use such Institutional Clients or their affiliates as broker or dealer.

## **Item 12 – Brokerage Practices**

Pursuant to the sub-advisory agreements between John Hancock Investment Management and its Sub-Advisers, the Sub-Advisers are responsible for placing all orders for the purchase and sale of portfolio securities of the Trust’s portfolios, subject to the oversight of John Hancock Investment Management and in compliance with the registration statements of the John Hancock Funds. The following description of the Sub-Advisers’ policies is qualified in its entirety to reference to the relevant Sub-Advisers’ disclosures concerning their brokerage practices.

The Sub-Advisers have no formula for the distribution of a portfolio’s brokerage business; rather they place orders for the purchase and sale of securities with the primary objective of obtaining the most favorable overall results for the portfolio. The cost of securities transactions for each portfolio will consist primarily of brokerage commissions or dealer or underwriter spreads. Fixed-income securities and money market instruments are generally traded on a net basis and do not normally involve either brokerage commissions or transfer taxes.

The cost of securities transactions for each portfolio will consist primarily of brokerage commissions or dealer or underwriter spreads. The Sub-Adviser will not always pay the lowest possible commission rate as consideration of the above noted factors by a Sub-adviser, either in terms of a particular transaction or the Sub-adviser’s overall responsibilities with respect to the fund or any other managed accounts, could result in the portfolio paying a commission or spread on a transaction that is in excess of the amount of commission or spread another broker-dealer might have charged for executing the same transaction.

*Selection of Brokers or Dealers to Effect Trades.* In selecting brokers or dealers to implement transactions, the Sub-Advisers will give consideration to a number of factors, including:

- price, dealer spread or commission, if any,
- the reliability, integrity and financial condition of the broker-dealer,
- size of the transaction,
- difficulty of execution,
- brokerage and research services provided (unless prohibited by applicable law), and
- confidentiality and anonymity.

For securities traded primarily in the over-the-counter market, the Sub-Advisers will, where possible, deal directly with dealers who make a market in the securities unless better prices and execution are available elsewhere. Such dealers usually act as principals for their own account. Fixed income securities (i.e., bonds) and money market instruments are generally traded in an over-the-counter market. In this market bond dealers place bids and make offers to buy and sell bonds on a net basis with no stated commission and, generally, no transfer taxes. Any commission is implied by the difference or “spread” between the price for which the dealer purchases the bond and the price at which the dealer sells the bond. A new issue fixed income security is sold to purchasers at a net price with a fixed sales credit paid to the underwriter by the issuer of the security. Occasionally, securities may be purchased directly from the issuer.

Consistent with the duty to seek best execution, trades for the John Hancock Funds may be executed by dealers that also sell shares of John Hancock Funds. However, the Sub-Adviser is prohibited from considering sales of shares of the funds as a factor in the selection of broker-dealers to execute portfolio transactions for the funds. John Hancock Investment Management has implemented policies and procedures (approved by the Board of the relevant fund) that John Hancock Investment Management considers to be reasonably designed to ensure that the selection of broker-dealers by the Sub-Advisers is not influenced by a broker dealer’s sales of fund shares.

*Soft Dollar Considerations.* In selecting brokers and dealers, a Sub-Adviser will give consideration to the value and quality of any research, statistical, quotation, brokerage or valuation services provided by the broker or dealer to the Sub-Adviser. In placing a purchase or sale order, unless prohibited by applicable law, a Sub-adviser may use a broker whose commission in effecting the transaction is higher than that of some other broker if the Sub-adviser determines in good faith that the amount of the higher commission is reasonable in relation to the value of the brokerage and research services provided by such broker, viewed in terms of either the particular transaction or its overall responsibilities with respect to the Trusts’ relevant portfolio(s) and any other discretionary accounts it manages. In addition to statistical, quotation, brokerage or valuation services, a Sub-Adviser may receive from brokers or dealers may provide products or research that are used for both research and other purposes, such as administration or marketing. In such case, the Sub-adviser will make a good faith determination as to the portion attributable to research. Only the portion attributable to research will be paid through portfolio brokerage. The portion not attributable to research will be paid by the Sub-adviser, as applicable. Research products and services may be acquired or received either directly from executing brokers or indirectly through other



brokers in step-out transactions. A “step-out” is an arrangement by which a Sub-adviser executes a trade through one broker-dealer but instructs that entity to step-out all or a portion of the trade to another broker-dealer. This second broker-dealer will clear and settle, and receive commissions for, the stepped-out portion. The second broker-dealer may or may not have a trading desk of their own.

Under recent revisions to the EU’s Markets in Financial Instruments Directive (“MiFID II”), effective January 3, 2018, EU investment managers, including certain Sub-Advisers to John Hancock Funds, may only pay for research from brokers and dealers directly out of their own resources or by establishing “research payment accounts” for each client, rather than through client commissions. MiFID II is expected to limit the use of soft dollars by subadvisors located in the EU, if applicable, and in certain circumstances may result in other Sub-Advisers reducing the use of soft dollars as to certain groups of clients or as to all clients.

A Sub-adviser also receives research or research credits from brokers that are generated from underwriting commissions when purchasing new issues of fixed-income securities or other assets for portfolios of the Trusts. These services, which in some cases may also be purchased for cash, include such matters as general economic and security market reviews, industry and company reviews, evaluations of securities and recommendations as to the purchase and sale of securities.

Some of these services are of value to the Sub-Adviser in advising several of its clients (including the John Hancock Funds), although not all of these services are necessarily useful and of value in managing the portfolios of the John Hancock Funds. The management fee paid by a fund is not reduced because the Sub-Adviser and its affiliates receive such services.

As noted above, a Sub-adviser may purchase new issues of securities for a portfolio in underwritten fixed price offerings. In these situations, the underwriter or selling group member may provide the Sub-adviser with research in addition to selling the securities (at the fixed public offering price) to the portfolio or other advisory clients. Because the offerings are conducted at a fixed price, the ability to obtain research from a broker-dealer in this situation provides knowledge that may benefit the portfolio, other managed accounts, and the Sub-adviser without incurring additional costs. These arrangements may not fall within the safe harbor of Section 28(e) of the Securities Exchange Act of 1934 because the broker-dealer is considered to be acting in a principal capacity in underwritten transactions. However, FINRA has adopted rules expressly permitting broker-dealers to provide bona fide research to advisers in connection with fixed price offerings under certain circumstances. As a general matter in these situations, the underwriter or selling group member will provide research credits at a rate that is higher than that which is available for secondary market transactions.

Brokerage and research services provided by brokers and dealers include advice, either directly or through publications or writings, as to:

- the value of securities,
- the advisability of purchasing or selling securities,
- the availability of securities or purchasers or sellers of securities, and
- analyses and reports concerning (a) issuers, (b) industries, (c) securities, (d) economic, political and legal factors and trends and (e) portfolio strategy.

Research services are received primarily in the form of written reports, computer generated services, telephone contacts and personal meetings with security analysts. In addition, such services may be provided in the form of meetings arranged with corporate and industry spokespersons, economists, academicians and government representatives. In some cases, research services are generated by third parties but are provided by or through a broker.

To the extent research services are used by a Sub-adviser, such services would tend to reduce its expenses. However, the Sub-Advisers do not believe that an exact dollar value can be assigned to these services. Research services received by Sub-Advisers from brokers or dealers executing transactions for series of the Trusts, which may not be used in connection with a Fund, also will be available for the benefit of other funds managed by the Sub-Advisers.

*Sales of Fund Shares by Broker-Dealers.* Consistent with the duty to seek best execution, portfolio trades may be executed by dealers that also sell shares of that, or another, portfolio of the Trust. However, the Sub-Adviser is prohibited from considering such sales as a factor in the selection of broker-dealers to execute a fund's portfolio transactions. The Board has approved, and John Hancock Investment Management has implemented, policies and procedures that each consider to be reasonably designed to ensure that the selection of broker-dealers is not influenced by a broker-dealer's sales of fund shares.

*Allocation of Trades by the Sub-Advisers.* As described in Item 11 – Code of Ethics, Participation or Interest in Client Transactions and Personal Trading, the Sub-Advisers manage a number of accounts other than the portfolios of the Trusts. Although investment determinations for the portfolios of the Trusts will be made by a Sub-Advisor independently from the investment determinations it makes for any other account, investments deemed appropriate for a portfolio of the Trust by a Sub-Adviser also may be deemed appropriate by it for other accounts. Therefore, the same security may be purchased or sold at or about the same time for both a portfolio of a Trust and other accounts. In such circumstances, a Sub-Adviser may determine that orders for the purchase or sale of the same security for a portfolio of the Trusts and one or more other accounts should be combined. In this event the transactions will be priced and allocated in a manner deemed by the subadvisor to be equitable and in the best interests of the particular portfolio of the Trusts and such other accounts. While in some instances combined orders could adversely affect the price or volume of a security, the Trusts each believe that a portfolio's participation in such transactions on balance will produce better overall results for the portfolio.

For purchases of equity securities, when a complete order is not filled, a partial allocation will be made to each participating account pro rata based on the order size. For high demand issues (for example, initial public offerings), shares will be allocated pro rata by account size as well as on the basis of account objective, account size (a small account's allocation may be increased to provide it with a meaningful position), and the account's other holdings. In addition, an account's allocation may be increased if that account's portfolio manager was responsible for generating the investment idea or the portfolio manager intends to buy more shares in the secondary market. For fixed-income accounts, generally securities will be allocated when appropriate among accounts based on account size, except if the accounts have different objectives or if an account is too small to receive a meaningful allocation. For new issues, when a complete order is not filled, a partial allocation will be made to each account pro rata based on the order size. However, if a partial allocation is too small to be meaningful, it may be reallocated based on such factors as account objectives, strategies, duration benchmarks and credit and sector exposure. For example, value funds will likely not participate in initial public offerings as frequently as growth funds. In some instances, this investment procedure may adversely affect the price paid or received by the Funds or the size of the position obtainable for it. On the other hand, to the extent permitted by law, a subadvisor may aggregate securities to be sold or purchased for the Funds with those to be sold or purchased for other clients that it manages in order to obtain best execution.

*Affiliated Underwriting Transactions by the Sub-Advisers.* The Board of the Trusts has approved procedures in conformity with Rule 10f-3 under the 1940 Act whereby a portfolio may purchase securities that are offered in underwritings in which an affiliate of the Sub-Advisers participate. These procedures prohibit a portfolio from directly or indirectly benefiting John Hancock Investment Management, a Sub-Adviser or such an affiliate in connection with such underwritings. In addition, for underwritings where such an affiliate participates as a principal underwriter, certain restrictions may apply that could, among other things, limit the amount of securities that the portfolios could purchase.

*Affiliated Brokerage.* The Board of the Trusts has also approved procedures in conformity with Rule 17e-1 under the 1940 Act whereby a portfolio may execute portfolio transactions with or through brokers affiliated with the John Hancock Investment Management or Sub-Adviser ("Affiliated Brokers"). Affiliated Brokers may act as broker for portfolios on exchange transactions, subject, however, to the general policy set forth above and the Board's procedures. Commissions paid to an Affiliated Broker must be at least as favorable as those that the Board believe to be contemporaneously charged by other brokers in connection with comparable transactions involving similar securities being purchased or sold. A transaction would not be placed with an Affiliated Broker if a portfolio would have to pay a commission rate less favorable than the Affiliated Broker's contemporaneous charges for comparable transactions for its other most favored, but unaffiliated, customers, except for accounts for which the Affiliated Broker acts as clearing broker for another brokerage firm, and any customers of the Affiliated Broker not comparable to the portfolio, as determined by a majority of the Trustees of the Board who are not "interested persons" (as defined in the

1940 Act) of the John Hancock Funds, John Hancock Investment Management, the Sub-Advisor or the Affiliated Broker. Because John Hancock Investment Management or Sub-Advisor that is affiliated with the Affiliated Broker has, as an investment advisor to the portfolios, the obligation to provide investment management services, which includes elements of research and related investment skills such research and related skills will not be used by the Affiliated Broker as a basis for negotiating commissions at a rate higher than that determined in accordance with the above criteria.

*Funds of Funds.* Certain of the portfolios are “Fund of Funds.” A Fund of Funds invests primarily in shares of other investment companies, typically mutual funds or ETFs. With respect to mutual funds, such shares are purchased and redeemed directly with the fund’s principal underwriter at net asset value. Consequently, there is no opportunity to seek improvement in the price of the securities being purchased or a reduction in the transaction costs. However, where a mutual fund offers different share classes with differing “loads” or fees, the Sub-Adviser typically seeks to invest in the most efficient available share class. The same is true when a portfolio that is not a Fund of Funds invests in another fund. In cases where the underlying fund is an ETF, shares are traded through exchanges and the Sub-Adviser may be in a position to select which broker or dealer will effect the trade. In those cases, the considerations discussed above apply.

*Commission Recapture Program.* The Board of the Trusts has also approved each fund’s participation in a commission recapture program. Commission recapture is a form of institutional discount brokerage that returns commission dollars directly to a fund. It provides a way to gain control over the commission expenses incurred by a fund’s adviser and/or sub-adviser, which can be significant over time and thereby reduce expenses, improve cash flow and conserves assets. A fund can derive commission recapture dollars from both equity trading commissions and fixed income (commission equivalent) spreads. From time to time, the Board reviews whether participation in the recapture program is in the best interests of the fund.

## **Item 13 – Review of Accounts**

As indicated in response to Item 4 – Advisory Business, John Hancock Investment Management generally contracts with Sub-Advisers who manage fund assets under the supervision of John Hancock Investment Management. John Hancock Investment Management reviews the performance and compliance program of the portfolios managed by Sub-Advisers and reports to the Board of Trustees at least quarterly. Detailed information regarding the account reviews performed by John Hancock Investment Management is described in Item 4 – Advisory Business and Item 8 – Methods of Analysis, Investment Strategies and Risk of Loss.

John Hancock Investment Management’s finance department also performs monthly and quarterly close processes to ensure that John Hancock Investment Management’s financials accurately reflect its financial results. The finance department provides quarterly reports and analysis to the Board on behalf of John Hancock Investment Management, manages internal and external audits; and oversees a risk management

process that evaluates and controls financial and operational risk with respect to services provided to the Funds.

## **Item 14 – Client Referrals and Other Compensation**

John Hancock Investment Management does not directly or indirectly compensate any person who is not John Hancock Investment Management’s supervised person for client referrals.

John Hancock Investment Management and its related persons receive economic benefits from non-clients in connection with advice given to clients. To the extent assets of Fund of Funds managed by a Sub-Adviser are invested in underlying John Hancock Funds underwritten or advised by John Hancock Investment Management or its related persons, the Rule 12b-1 and management fees received by these related persons from the underlying funds are increased. In addition, to the extent the assets of an underlying John Hancock Fund subject to an expense limitation agreement increase due to investments by such fund-of-funds, the obligation of John Hancock Investment Management or a related person under such expense limitation agreement to waive or reimburse fees or expenses may be reduced or eliminated. Further, John Hancock Investment Management may receive a percentage of the advisory or other fees received by managers or underwriters of underlying funds attributable to assets of Fund of Funds advised by John Hancock Investment Management.

## **Item 15 – Custody**

Except in the case of fund of funds advised by John Hancock Investment Management, John Hancock Investment Management in its capacity as investment adviser does not maintain custody of client funds or securities. In the case of these fund of funds, John Hancock Investment Management holds custody of the shares of the underlying funds held by the fund of funds.

## **Item 16 – Investment Discretion**

As a manager of managers, John Hancock Investment Management administers the business and affairs of the Trusts, including the investment portfolios of the John Hancock Funds, and retains, supervises, and compensates Sub-Advisers to manage the assets of the investment portfolios of the John Hancock Funds. In its role as a manager-of-managers, John Hancock Investment Management has overall supervisory responsibility for the general management and investment activities of each John Hancock Fund, but does not, in the normal course of business, assume direct Investment discretion to manage the securities accounts of the John Hancock Funds.

John Hancock Investment Management also has the authority, with Board approval, to manage a Fund of Funds directly and, in that case, would be responsible for implementing asset allocation strategies, including by rebalancing the Fund of Fund's underlying funds to maintain target allocations. It is not the current practice of John Hancock Investment Management to exercise this authority in the normal course of business.

#### Model Portfolios

In the case of Model Portfolios, John Hancock Investment Management has investment discretion over accounts managed on a discretionary basis.

## **Item 17 – Voting Client Securities**

The Trusts' proxy voting policies and procedures (the "Procedures") delegate the responsibility for voting proxies relating to portfolio securities held by a John Hancock Fund to the fund's investment adviser, John Hancock Investment Management or, if John Hancock Investment Management has delegated portfolio management responsibilities to one or more Sub-Advisers, to the Sub-Adviser, subject to the Board's oversight. When serving as a manager of managers, John Hancock Investment Management delegates portfolio management responsibilities to one or more Sub-Advisers. Each Sub-Adviser has the responsibility to vote all proxies relating to securities held by a portfolio in accordance with the Sub-Adviser's proxy voting policies and procedures. John Hancock Investment Management retains the responsibility to oversee each Sub-Adviser's compliance with the Procedures. A Sub-Adviser has a duty to vote such proxies in the best interests of the John Hancock Fund and its shareholders. Complete descriptions of each Trust's Procedures and the proxy voting procedures of each of the Sub-Advisers are set forth in the currently effective registration statement's Statement of Additional Information (the "SAI") for the applicable Trust.

It is possible that conflicts of interest will arise for a Sub-Adviser when voting proxies. Such conflicts can arise, for example, when the Sub-Adviser or its affiliate has a client or other business relationship with the issuer of the security being voted or with a third party that has an interest in the vote. A conflict of interest can also arise when the Trust, its investment adviser or principal underwriter or any of their affiliates has an interest in the vote, for example, a vote to increase an advisory fee for a fund in the Trust.

In the event a Sub-Adviser becomes aware of a material conflict of interest, the Procedures generally require the Sub-Adviser to follow conflicts procedures included in the Sub-Adviser's proxy voting procedures. Although conflicts procedures will vary among Sub-Advisers, they generally provide for one or more of the following:

- (i) voting pursuant to the recommendation of a third party voting service;
- (ii) voting pursuant to pre-determined voting guidelines; or
- (iii) referring voting to a special compliance or oversight committee.

The specific conflicts procedures of each Sub-Adviser are set forth in its proxy voting procedures included in the SAI of each Trust. While these conflicts procedures may reduce, they will not necessarily eliminate, any influence on proxy voting of conflicts of interest.

Although Sub-Advisers have a duty to vote all proxies on behalf of the portfolios they sub-advise, it is possible that a Sub-Adviser may not be able to vote proxies under certain circumstances. For example, it may be impracticable to translate in a timely manner voting materials that are written in a foreign language or to travel to a foreign country when voting in person rather than by proxy is required. In addition, if the voting of proxies for shares of a security prohibits the Sub-Adviser from trading the shares in the marketplace for a period of time, the Sub-Adviser may determine that it is not in the best interests of the portfolio to vote the proxies. In addition, consistent with its duty to vote proxies in the best interests of a fund's shareholders, a Sub-Adviser may refrain from voting one or more of the fund's proxies if a Sub-Advisor believes that the costs of voting such proxies may outweigh the potential benefits. For example, a Sub-Adviser may also choose not to recall securities that have been loaned in order to vote proxies for shares of the security since the fund would lose security lending income if the security were recalled.

John Hancock Investment Management also has a Proxy Voting Committee (the "Committee") that was established pursuant to its Proxy Voting Policies and Procedures for the purpose of making recommendations to John Hancock Investment Management on the voting of proxies under specific conditions. For example, voting shares of an underlying fund held by a fund of funds advised by John Hancock Investment Management where in certain cases the fund of funds may mirror vote the vote of other shareholders in an underlying fund. In carrying out its proxy voting responsibilities, John Hancock Investment Management will monitor, and submit to the Committee for resolution, potential material conflicts between the interests of a fund and John Hancock Investment Management or any of its affiliated persons.

Information regarding how proxies relating to portfolio securities were voted during the most recent 12-month period is available (1) without charge, on [www.jhinvestments.com](http://www.jhinvestments.com) and (2) on the SEC's website at <http://www.sec.gov>. A copy of the Trust's proxy voting policy, John Hancock Investment Management's proxy voting policy and the proxy voting policy of each Sub-Adviser to a fund of the Trust is included as an exhibit to the Trust current Statement of Additional Information available on the SEC's website at <http://www.sec.gov> or on [www.jhinvestments.com](http://www.jhinvestments.com).

#### Model Portfolios

John Hancock Investment Management does not vote proxies for securities held in any client accounts managed using the Model Portfolios.

## **Item 18 – Financial Information**

John Hancock Investment Management is not aware of any financial condition that is reasonably likely to impair its ability to meet contractual and fiduciary commitments to clients, and has not been the subject of a bankruptcy petition at any time during the past ten years.