

Guadalupe-Blanco River Authority  
Defined Benefit Pension Plan Investment  
Practices and Performance Evaluation

# TABLE OF CONTENTS

Executive Summary	3
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## APPENDIX

1 Questionnaire	17
2 Investment Policy Statement	47
3 Performance Report	68
4 Asset Allocation Analysis	106
5 Risk Plus Analysis	115
6 Funding Policy	117
7 Valuation Report	126

# Executive Summary

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Consequent Capital Management (“CCM”) was engaged by the Guadalupe-Blanco River Authority (“GBRA”) to provide an independent review of investment practices and performance evaluations of the Retirement Plan for Employees of Guadalupe-Blanco River Authority (“Plan”) as required by Texas Government Code 802.19, created by Senate Bill 322, and applicable to Texas Public Retirement Systems with assets of \$30 million or greater.

It is important to note that CCM is an independent investment and financial advisory firm and the opinions and recommendations expressed within this document are based on the firms experience and expertise in working with public pension plans.

As set forth by the Texas Pension Review Board in the Guidance for Investment Practices and Performance Evaluations, the basis for the scope of the review included the evaluation of the following:

- Investment Policy Statement/Strategic Investment Plan
- Asset Allocation
- Appropriateness of Investment Fees
- Governance
- Investment Manager Selection & Monitoring

The following documents were provided to facilitate the review by CCM:

- Investment Policy Statement
- Quarterly Performance Reports from Cbiz (Q1 2018 through Q4 2019)
- Capital Market Assumptions from Cbiz and Rudd & Wisdom
- Meeting Minutes
- Funding Policy (adopted 11/20/2019)
- Actuarial Valuation Reports for Plan Years 2017 & 2018
- Annual Financial Reports for Years Ended December 31, 2017 & 2018
- Manager Search Reports
- Investment Manager Contracts/Prospectuses/LPA/Subscription Agreements

## **Conclusion:**

Based on our independent review of the Plan’s investment practices and performance criteria, it is in our opinion that the investment practices, governance, investment activities and methodologies are suitable and in line as compared with best practices of public pension plans.

## GBRA Best Practices:

- Investment Policy Statement/Strategic Investment Plan

GBRA does have a written investment policy statement and the policy has been designed to meet the needs and objectives of the Plan while addressing and incorporating investment related procedures and protocols. The policy does take into account the viability and funding objectives and requirements of the retirement plan. The policy also contains procedures that broadly conform with industry practices, which are written clearly and explicitly in order to facilitate management and compliance of the portfolio with desired intentions and objectives. Standard procedures and protocols that are addressed in the policy include:

- Policy Objectives
- Roles and Responsibilities
- Investment Objectives
- Asset Allocation
- Investment Manager Guidelines
- Investment Manager Communication & Service Requirements

- Asset Allocation

GBRA relies on the expertise of its investment consultant, which undertakes the analysis for the Plan's strategic asset allocation. Simulations run in the asset allocation analysis provide a quantification of downside investment returns. A discussion and review of these simulations help shape the Committee's view of its risk tolerance. The investment consultant periodically presents the results of their analysis, together with recommendations, to the Retirement and Benefit Committee, which then makes the final decision in implementing an asset allocation deemed appropriate in meeting the needs and objectives of the Plan. The investment consultant monitors and facilitates maintenance of asset allocation targets and ranges via rebalancing. This decision-making approach for strategic asset allocations is standard industry practice and in line with best practices for retirement plans engaging non-discretionary investment consultant services.

- Appropriateness of Investment Fees

GBRA does utilize the services of the investment consultant to negotiate and monitor fees. This is standard industry practice.

- Governance

GBRA currently maintains a standard and practical governance structure with a well-defined delineation of responsibilities incorporated in the investment policy that addresses the roles and responsibilities of the parties that are associated with the management and oversight of the Plan. The number of members (7) on the Retirement and Benefit Committee is an appropriate number and the mix of board and employee members also helps to facilitate efficient and effective management and oversight. The quarterly meeting



schedule is in line with industry best practices and facilitates compliance with policy and regulatory requirements.

- Investment Manager Selection & Monitoring

The Retirement and Benefit committee utilizes the services of an institutional investment consultant that provides the research, analysis, and potential candidates for selection by the committee as well as the ongoing monitoring of investment managers, in both traditional long-only and alternative investments, currently managing assets for the Plan. The committee follows a repeatable process, including presentations by finalist firms, which allows for the efficient and effective selection of investment managers. Quarterly meetings to discuss investment performance is considered best practice. GBRA's approach is standard industry practice and in line with best practices for public retirement plans engaging the services of a non-discretionary investment consultant.

As it pertains specifically to alternative investments, GBRA utilizes the services of the investment consultant to identify suitable alternative investment strategies, perform due diligence on prospective strategies, and facilitate the manager selection process while also monitoring the Plan's alternative investments. The process of selecting a new alternative manager/strategy culminates in a search report and mandatory presentations by finalist firms. The research and selection process is in line with the industry standards, comprised of specified research steps, including mandatory on-site visits.

Currently, the alternative investment strategies utilized by the Plan are appropriate, given the overall goal of reducing the Plan's volatility and adding diversification.

In completing our plan due diligence, we have developed several observations and recommendations pertaining to GBRA and the Plan. These recommendations and observations are based on interviews and materials provided to CCM and represent CCM's views for best practices. The following is a summary of the review and resulting recommendations.

## **BACKGROUND**

The Retirement Plan for Employees of Guadalupe-Blanco River Authority is a defined benefit pension plan that was established on January 1, 1966. As of December 31, 2019, the Plan had a market value of \$32,282,426 and 210 members. For the plan year ending December 31, 2018, the Plan had a funded ratio of 86.9% based on an actuarial value of assets (AVA) of \$30,900,491 and an actuarial liability (UAL) of \$35,544,198 and was expected to achieve an assumed rate of return of 7%. Based on the current funding policy, the actuary recommended a minimum contribution of \$653,540 as a level dollar amount for the plan year ending December 31, 2019, which is expected to amortize the UAL over the 10-year period beginning January 1, 2019. GBRA is the sole contributor to the Plan as there are no employee contributions. The Plan was closed in 2010 and was frozen effective December 31, 2018.

## RECOMMENDATIONS

### Investment Policy Statement/Strategic Investment Plan

GBRA does have a written investment policy statement and the policy has been designed to meet the needs and objectives of the Plan while addressing and incorporating investment related procedures and protocols. However, the policy was adopted in 2011 and has not been updated since its adoption.

Our recommendations are as follows:

- Incorporate language into the IPS, that we believe is in line with best practices of public pension plans:
  - Review investment policy annually
  - Receiving investment performance reports quarterly from the Investment Consultant and Flash performance reports monthly
  - Add quantifiable criteria for measuring investment manager performance, to include appropriate metrics and time periods (e.g. investment returns in comparison to the managers relevant benchmark index as well as peer group universes over trailing time periods of 1-, 3- and 5-years), as well as specific criteria for putting an investment manager on 'Watch' and/or terminating an investment manager
  - Add monitoring of investment management fees
  - Incorporate language in the IPS that explicitly defines two criteria for the evaluation of GBRA's asset allocation. The first criterion would measure the asset allocation's actual return compared to its stated expected investment return objective over an evaluation period of a market cycle, which is typically 5 to 7 years. The second criterion would evaluate the ranking of the GBRA's investment returns in a universe of similar public pension plans over 1-, 3- and 5-year trailing time periods. While the investment returns of GBRA and the rest of the universe would include both the effects of the asset allocations as well as manager-selection effects, this criterion would still be a good proxy because extensive academic research has shown that asset allocation accounts for over 90% of a plan's total return.
  - Add language to properly reflect the alternative investments universe and classify various alternative strategies and sub-strategies under a single Alternative Investments category; need to add language for real estate, private debt, private equity, hedge funds, and real assets (e.g. timber, infrastructure, etc.).
- Update actuarial assumed rate of return in policy.
- Current Target Allocation needs to be included as Schedule A of the IPS; the Target Allocation in Schedule A of the IPS is not current.

Source: eVestment, CBIZ

## **Asset Allocation**

GBRA's investment consultant undertakes the analysis for the Plan's strategic asset allocation and periodically presents the results of their analysis together with recommendations to the Retirement and Benefit Committee, which then makes the final decision in implementing an asset allocation deemed appropriate in meeting the needs and objectives of the Plan. This decision-making approach for strategic asset allocations is standard industry practice for retirement plans engaging non-discretionary investment consultant services.

Our recommendations are as follows:

- Generally, the time frame for reviewing strategic asset allocations is once a year, and this would be a recommended change for GBRA's consideration.
- GBRA's actuary and investment consultant should work in coordination utilizing reasonable assumption inputs to craft an appropriate asset allocation to achieve funding objectives in a risk prudent manner particularly considering the Plan's recent frozen status.
- It is critically important to have consistency in the expected returns between the investment consultant and the actuary. The actuarial required rate of return should be specified based on just the long-term required rate of return for GBRA to meet its projected liabilities. In other words, there should not be any asset class expected return assumptions made by the actuary that result in the actuarial required rate of return.
- It is imperative at the onset of the Plan's relationship with an alternative asset manager that GBRA, with assistance from the investment consultant, ensure that underlying funds' NAV is computed based on strategy-appropriate accounting/valuation practices for each type of alternative asset and that reputable independent, third-party administrators, custodians and auditors are retained by each underlying alternative manager. GBRA should be sure to rely on their investment consultant to assist in this endeavor.
- When implementing asset allocation consider passive investment vehicles in asset classes where median returns of active managers within a peer universe are not expected to generate excess returns over an appropriate benchmark index (e.g. U.S. large cap equity).

## **Appropriateness of Investment Fees**

GBRA does maintain a funding policy that addresses the sources of funding for costs associated with the management and oversight of the defined benefit plan but neither the funding policy nor the investment policy address the monitoring of direct and/or indirect compensation paid to investment managers.

Our recommendations are as follows:

- Incorporate language into the IPS pertaining to the party responsible for monitoring and periodically reviewing fees (e.g. annually).
- Require that quarterly performance reporting include information on median investment fees for asset class universes applicable to the Plan portfolio for comparison purposes. Inquire about investment fees for any investment manager with fees above median peer universe, particularly traditional long-only strategies within the equity and fixed income asset classes.

INVESTMENT	PEER UNIVERSE	INVESTMENT VEHICLE	MGMT FEE/ EXP. RATIO	MEDIAN PEER UNIVERSE MGMT FEE/EXP. RATIO
<b>Wells Fargo Adv Growth Fund</b>	U.S. Large Cap Growth Equity	Mutual Fund	0.75%	0.75%
<b>Eastern Shore Small Cap Core</b>	U.S. Small Cap Core Equity	Commingled Fund	0.90%	0.57%
<b>Diamond Hill Large Cap Value</b>	U.S. Large Cap Value Equity	Mutual Fund	0.58%	0.72%
<b>Sustainable Insight Capital</b>	U.S. Large Cap Value Equity	Separate Account	0.65%	0.62%
<b>Oppenheimer International Growth</b>	EAFE Large Cap Growth Equity	Mutual Fund	0.89%	0.92%
<b>LMCG Emerging Markets Equity</b>	All Emerging Market Equity	Commingled Fund	0.85%	0.90%
<b>Brandywine Global Opportunistic Fixed Income</b>	Global Government Fixed Income	Commingled Fund	0.45%	0.45%
<b>Johnson Core Bond</b>	U.S. Intermediate Duration Fixed Income	Mutual Fund	0.24%	0.48%
<b>Aberdeen Emerging Markets Debt</b>	Global Emerging Market Fixed Income (Hard Currency)	Mutual Fund	0.90%	0.74%
<b>Courage Credit Opportunities III</b>	-	Private Debt	1.75% / 20%	
<b>Ironwood Multi-Strategy</b>	-	Commingled Fund	1.20%	
<b>BTG Pactual Global Timberland Resources</b>	-	Private Equity	1.00%	
<b>TerraCap Partners III</b>	-	Private Real Estate	1.5% / 20%	
<b>TerraCap Partners IV</b>	-	Private Real Estate	1.5% / 20%	

## **Governance**

GBRA currently maintains a standard and practical governance structure with a well-defined delineation of responsibilities incorporated in the investment policy that addresses the roles and responsibilities of the parties below that are associated with the management and oversight of the Plan.

- Board of Directors
- Retirement and Benefit Committee
- Executive Manager of Finance and Administration
- Investment Consultant
- Investment Managers
- Custodian
- Actuary

Our recommendations are as follows:

- Consider posting investment performance reports and investment policy statement to “Transparency” webpage to enhance transparency.
- Develop on-boarding procedures, protocols, and materials to assist new board and committee members in understanding management of the retirement plan as well as their fiduciary responsibilities and regulatory requirements. In general, develop reasonable, manageable, cost-effective, and time appropriate materials and requirements such as development of trustee handbooks followed up with attestation to review of the selected materials to ensure compliance and accountability while enhancing knowledge of fiduciary duties.
- As it pertains to board and committee training, consider:
  - Requiring investment consultant to coordinate annual investment manager roundtables of existing investment managers
  - Requiring investment consultant to conduct 1–2 investment-related education workshops per year
- Pertaining to the Retirement and Benefit Committee, consider placing appropriate term limits on assigned board members and employee representatives and stagger the terms of the committee members to facilitate continuity.
- Best practices recommend issuing an investment consultant RFP every 3–5 years.
- In general, best practices recommend developing written governance policies and reviewing those policies annually.

## **Investment Manager Selection & Monitoring**

The Retirement and Benefit Committee has been delegated the responsibility to select and monitor investment managers. The committee utilizes the services of

an institutional investment consultant that provides the research, analysis, and potential candidates for selection by the committee as well as the ongoing monitoring of investment managers currently managing assets for the Plan. This approach is standard industry practice for public retirement plans engaging the services of a non-discretionary investment consultant.

Our recommendations are as follows:

- Consider establishing conflict of interest rules pertaining to committee members when selecting investment managers.

## OBSERVATIONS

### **Investment Policy Statement/Strategic Investment Plan**

GBRA does have a written investment policy containing procedures that broadly conforms with industry practices which are written clearly and explicitly so as to facilitate management and compliance of the portfolio with desired intentions and objectives. The policy has been designed to address achievement of objectives and incorporate investment-related procedures and protocol pertaining to policy objectives, roles and responsibilities, investment objectives, asset allocation, investment manager guidelines, and investment manager communication and service requirements.

However, the policy was adopted in July 2011 and has not been updated in almost 9 years. As such, the policy, in our view, requires updating to be more in line with best practices. The current policy makes no explicit mention of the following:

- Review of the policy annually
- Receiving quarterly investment reports and monthly flash reports from the investment consultant
- Quantifiable criteria for measuring and monitoring investment manager performance nor any criteria pertaining to placing a manager on “watch” or terminating a manager (e.g. manager is expected to outperform, on a net-of-fees basis, the specified benchmark over a 5-year time period or manager must rank in at least the top 50th percentile of its peer group universe over a rolling 3-year time period)
- Monitoring and review of investment fees

Specific elements in the IPS such as maximum weighting of a domestic equity holding at time of purchase to not exceed 8% or 5% more than the index weight, whichever is greater, are beyond the scope of this review. However, we have spoken with GBRA’s investment consultant and confirmed that there is a mechanism by which the consultant monitors these criteria on a quarterly basis. Another example is evaluating the investment holdings across portfolios against the maximum exposures by currency specified in the IPS. These are examples of specific monitoring undertaken by the investment consultant on a quarterly basis. Based on our calls

with the investment consultant, we believe these criteria and constraints are being regularly monitored. However, the Target Allocation in Schedule A of the IPS is not current and needs to be updated.

Also based on our conversations with GBRA's actuary and investment consultant, it is our understanding that assumptions and policy allocations have been analyzed, tested, discussed, and subsequently implemented to achieve stated investment objectives and sustain a commitment to the policies.

Based on our review, there is no evidence that the retirement plan is intentionally non-compliant with the IPS.

### **Asset Allocation**

GBRA's investment consultant undertakes the analysis for the Plan's strategic asset allocation and periodically presents the results of their analysis together with recommendations to the Retirement and Benefit Committee, which then makes the final decision in implementing an asset allocation deemed appropriate in meeting the needs and objectives of the Plan. This decision-making approach for strategic asset allocations is standard industry practice for retirement plans engaging non-discretionary investment consultant services.

GBRA's overall risk tolerance is expressed through the Retirement and Benefit Committee's evaluation, in conjunction with the investment consultant, of the strategic asset allocation analysis prepared by the investment consultant. Specifically, the simulations run in the asset allocation analysis provide a quantification of downside investment returns. A discussion and review of these simulations help shape the Committee's view of its risk tolerance.

The methodology for GBRA's strategic asset allocation is based on Morningstar's analytical software that utilizes a mean-variance framework to develop an efficient frontier for asset allocation analysis. Incorporated in the asset allocation analysis, are sensitivity analysis and Monte Carlo simulations to help identify a range of possible future outcomes, including downside investment returns, together with the associated probabilities for these outcomes.

Based on our conversations with GBRA's investment consultant, the strategic asset allocation is reviewed once every 3 years, and more frequently if needed, depending on market conditions. The last asset allocation study was conducted in late 2018. There is communication between the investment consultant and the actuary regarding their respective future capital market expectations. However, each uses its own expectations in the reports and analysis prepared for the GBRA's Retirement and Benefit Committee. In reviewing reports from the investment consultant, staff and the actuary, it is clear that there is a material difference in the underlying return expectations between the actuary and the investment consultant.

*For example, the investment consultant's nominal expected return for Domestic Large Cap Equity is 6%, while the corresponding expected return from the actuary is 8.8%, a variance between the two of 280 bp. Likewise, the consultant's expected returns for Domestic Small Cap and Emerging Markets Equity are 7% and 8% respectively, whereas*



*the actuary's expected returns for these two asset classes are 9.7% and 10.4% respectively, a variance of 240 bp to 270 bp.*

To the extent that long-term asset class expected returns result in a total Plan expected investment return that is lower than the actuarial assumption, the GBRA may need to lower the Plan's future liabilities and/or increase contributions to the Plan.

Tactical asset allocations are considered on a quarterly basis. The time horizon for tactical asset allocations is 18 months. An important element in the framework for evaluating tactical asset allocation opportunities is relative value. So, the investment consultant reviews and analyzes if there are relative value opportunities that can be capitalized on with a shorter time horizon than the strategic asset allocation. The framework and methodology utilized for tactical asset allocation decisions is reasonable and conforms to industry practice.

#### ASSET ALLOCATIONS

	GBRA	NASRA AVERAGE <sup>1</sup>
<b>Public Equity</b>	52%	49%
<b>Fixed Income</b>	26%	23%
<b>Alternatives</b>	12%	19%
<b>Real Estate</b>	10%	7%
<b>Short-Term Inv (Cash)</b>	0%	2%

<sup>1</sup>National Association of State Retirement Administrators Pension Plan Average

Based on the average pension plan asset allocations from NASRA, GBRA's asset allocation are in line (within +/- 3%) for all the asset classes except Alternatives, where GBRA's allocation is 7 percentage points below the pension plan average.

Asset class expected returns and expected risks are shown below from the investment consultant's most recent asset allocation study.

#### CAPITAL MARKET ASSUMPTIONS

	EXP RETURN	EXP RISK
<b>U.S. Large Cap Equity</b>	6%	17.1%
<b>U.S. Small Cap Equity</b>	7%	22%
<b>International Equity — Dev Mkts</b>	7.5%	19.9%
<b>International Equity — Emerging Mkts</b>	8%	25.4%
<b>Global Fixed Income</b>	3.9%	5.2%
<b>Alternatives</b>	6%	7.9%
<b>Real Estate</b>	9.5%	7.4%
<b>Short-Term Inv (Cash)</b>	2.5%	1.1%



It is important to note that the results from asset allocations analyses are projections and not guarantees. They are based on assumptions that may or may not materialize. With that said, assuming GBRA's investment consultant recommends (and the Committee accepts the recommendations) investment managers who will outperform their benchmarks, and investment return additive tactical asset allocations are recommended and implemented, it is reasonable to assume that GBRA's has the necessary mix of assets to achieve the Plan's investment return and risk objectives.

We did run an asset allocation analysis (Appendix 4, page 106) which uses as inputs the GBRA investment consultant's assumptions of asset class expected returns and expected risks, and the Plan's asset allocation guidelines specified in the IPS. For our analysis, we also only utilized the most current and specific asset class strategies that are in the GBRA portfolio as of 12/31/19. The results on page 113 show that by making some changes to the current asset class allocations, it may be possible to increase the total portfolio's annualized expected return by +50 bp, while maintaining the same level of risk. The changes in the asset class allocations for GBRA's review and consideration are summarized below.

ASSET CLASS STRATEGY	CURRENT WEIGHT	PROPOSED WEIGHT	CHANGE
Cash	4.6%	0%	-4.6%
U.S. Core Fixed Income	3.4%	5%	+1.6%
International Fixed Income	14.2%	5%	-9.2%
Private Credit/(U.S. High Yield)	1.3%	10%	+8.7%
U.S. Large Cap Equity	36.8%	10%	-26.8%
U.S. Small Cap Equity	7.4%	15%	+7.6%
International Equity	10.9%	14.7%	+3.8%
Emerging Markets Equity	3.9%	10%	+6.1%
Real Estate %	8.4%	10%	+1.6%
Hedge Fund of Funds	9.1%	20.3%	+11.2%
Expected Return (5 Years)	5.3%	5.8%	
Risk (Standard Deviation)	11.6%	11.6%	
Sharpe Ratio	0.30	0.34	

### Appropriateness of Investment Fees

GBRA does maintain a funding policy that addresses the sources of funding for costs associated with the management and oversight of the defined benefit plan but neither the funding policy nor the investment policy address the monitoring of direct and/or indirect compensation paid to investment managers. GBRA currently relies

on the expertise of their investment consultant to review, negotiate, and monitor investment expenses and asset management fees. However, there does not appear to be a formal protocol for the review of investment fees currently in place.

### **Governance**

The GBRA Board of Directors has delegated the responsibility of oversight and management of the Plan to the Retirement and Benefit Committee. The board members are appointed by the Governor of Texas. The Retirement and Benefit Committee consists of 3 board members and 4 employee representatives. The board members are assigned to the Committee by the Board of Directors. The employee representatives are selected by the General Manager and approved by the board members.

Training requirements are established by Texas laws and governed by the Texas Pension Review Board. New members (trustees & administrator) must earn 7 hours of training within their first year. Areas of training include: Benefits Administration, Risk Management, Ethics, Governance, Actuarial Matters, Fiduciary Matters, and Investments. After the first year, members must earn 4 training hours every two years. Training hours are reported annually to the Texas Pension Review Board. There is currently no investment-related formal training that is provided by the Board.

The Retirement and Benefit Committee meets quarterly to discuss matters, which include, but are not limited to, investment performance reviews from consultant, actions regarding investments, actuarial valuation reports from the actuary, and legislation impacting public pension plans. On average, 1.5 hours is devoted to the discussion and review of investment issues pertaining to the retirement plan in the Retirement and Benefit Committee meetings. Meeting minutes are available to the public and GBRA maintains a “Transparency” webpage enabling access to defined benefit plan information consisting of compliance confirmation, investment returns and assumptions, actuarial valuation report, and pension plan audits. The Board may want to consider providing access to investment performance reports or the investment policy statement.

While it is clear that GBRA is fulfilling its’ fiduciary responsibilities the board should consider providing additional trustee education and training regarding policies, procedures and plan strategy to help ensure that all board members have a thorough understanding of their fiduciary responsibilities. However, it is worth noting that current Retirement and Benefit Committee members have an average of over 7.5 years of membership on the committee. It is also not clear that GBRA has a formal protocol in place to review and update, if necessary, the current governance structure and procedures.

### **Investment Manager Selection & Monitoring**

The Retirement and Benefit Committee has responsibility for the selection and monitoring of investment managers. The committee utilizes the services of an institutional investment consultant to assist in its selection and monitoring process.

Selection criteria for including potential candidates managing assets in traditional, long-only strategies within equity and fixed income, include, but is not limited to:

- 3-year performance track record,
- Minimum product assets based on asset class,
- 3-year and 5-year batting average,
- Downside capture ratio
- Excess return over the appropriate benchmark.

Finalist candidates are selected by the Retirement and Benefit Committee after reviewing analysis by, and having discussions with, the investment consultant. All finalist candidates are required to present their firm and strategy to the committee. Each candidate is typically given 20 minutes to present, plus another 10 minutes for Q&A. The committee then discusses and votes on the manager and strategy that best fits the needs and objectives of the GBRA retirement plan portfolio. The quantitative and qualitative factors utilized in the selection process are also among the factors reviewed in monitoring managers currently managing assets for the Plan. As reported in GBRA's quarterly investment report, investment manager performance is benchmarked against asset class appropriate indexes and peer group universes.

### **Alternative Investment Strategies**

As it pertains to alternative investments, the investment consultant has the responsibility of identifying suitable alternative investment strategies, performing due diligence on prospective strategies/managers, leading the manager selection process and monitoring the Plan's alternative investments. The investment consultant, with 32 professionals tasked with manager research, seems appropriately staffed to perform the above mentioned functions. The Research Advisory Board ("RAB"), comprised of the Consultant's senior research professionals, provides guidance and general oversight of the research activities. The research and selection process is in line with the industry standards, comprised of specified research steps, including mandatory on-site visits.

The investment consultant maintains approved investment manager lists for liquid alternative strategies, while for closed-end funds, the recommended investment managers evaluation group are created as needed (each closed-end fund has a limited capital-raising period, during which new limited partners are admitted).

The process of selecting a new alternative manager/strategy culminates in a search report, created by the Investment Consultant. The search report, shared with the Plan Trustees, contains comparative analysis of several strategies (usually around five "finalists"). The Trustees are ultimately responsible for selecting one or more strategies the Plan's assets will be allocated to. Ensuring that Trustees can make a well-informed decision, in addition to the search report, the process mandates the finalist managers to present their firm and strategy to the Trustees during a scheduled Board meeting.

Once an alternative mandate is awarded, the investment consultant continues to monitor the investment. Each investment's performance is reviewed either monthly or quarterly (depending on the strategy). In addition to performance monitoring, the Investment Consultant performs quarterly qualitative reviews of managers, evaluating any changes from the business, team, process and operational perspective. At least annually, for each alternative investment the Investment Consultant will perform an in-depth review which includes an on-site visit.

The alternative investment strategies utilized by the Plan are appropriate, given the overall goal of reducing the Plan's volatility and adding diversification.

Given the Plan's size, the use of fund-of-funds in the hedge fund area is prudent. With the use of direct hedge fund investments, it would be hard to achieve the desired level of diversification to properly mitigate the idiosyncratic risk as well as achieve a proper allocation across various hedge fund strategies.

Each alternative investment manager reports their respective net asset value ("NAV") to the Plan on a monthly or quarterly basis (depending on the strategy) based on generally accepted accounting principles. The valuation methodology for each alternative asset varies depending on the asset class (e.g. real estate, timber, infrastructure) and valuations for each alternative asset manager are provided by a third-party administrator.

It is important to note that GBRA has a Board policy which addresses ethics and conflict of interest while Local Government Code Chapter 171 regulates conflicts of interest of Directors and officers of GBRA. However, the selection process for investment managers does not directly address potential conflicts of interest for committee members.

# APPENDIX I

## Questionnaire

## Investment Policy/Strategic Investment Plan

### 1 Does the system have a written investment policy statement (IPS)?

While GBRA has a written IPS, it was formulated in July 2011 and has not been updated in almost 9 years.

#### RECOMMENDATION:

*Under best industry practices the IPS should be reviewed annually and updated as needed.*

### 2 Are the roles and responsibilities of those involved in governance, investing, consulting, monitoring and custody clearly outlined?

There is a delineation of responsibilities incorporated in the investment policy statement that addresses the responsibilities of the following parties associated with the management and oversight of the Retirement Plan for Employees of the Guadalupe-Blanco River Authority:

- Board of Directors
- Retirement and Benefit Committee
- Executive Manager of Finance and Administration
- Investment Consultant
- Investment Managers
- Custodian
- Actuary

#### RECOMMENDATION:

*While the roles and responsibilities involved in governance matters are fairly well defined, we do recommend changes to include identifying more specificity for measurable criteria.*

*For example, the IPS states that the duties of the Retirement and Benefit Committee include to “periodically review the investment policy...”. We recommend changing this to “review the investment policy annually...”.*

*Another duty of the Committee stated in the IPS is “periodically meet with the investment consultant...to review investment performance...” We recommend changing this “meet with the investment consultant on, at least, a quarterly basis to review investment performance...”.*

*Similarly, under responsibilities of the Investment Consultant, the IPS states “Provide timely and regular investment reports showing investment performance...”. We recommend changing this to “On a quarterly basis, provide comprehensive investment reports showing investment performance.... On a monthly basis, provide investment Flash Reports which show summary monthly investment performance for the total plan and across individual investment managers.”*

*Additionally, the IPS states that the Investment Consultant's responsibility includes to "Regularly meet with the Committee ..." We recommend changing this to "Meet with the Committee at least quarterly..."*

**3** Is the policy carefully designed to meet the real needs and objectives of the retirement plan?

Per the policy, "The Plan has a single investment objective: achieve the actuarial assumed rate of return over a reasonable period of time while maintaining sufficient liquidity to timely meet all payment obligations to Participants".

The policy has been designed to address and incorporate the investment-related procedures and protocol pertaining to the following:

- Policy Objective
- Delineation of Responsibilities
- Investment Objective
- Portfolio Structure & Asset Allocation
- Investment Manager Investment Guidelines
- Investment Manager Communication & Service Requirements

However, there are areas within the IPS that can be further aligned with best practices.

**RECOMMENDATION:**

*Recommendations include adding language into the IPS pertaining to the following:*

- *Review the IPS annually*
- *Meeting with the Investment Consultant at least quarterly*
- *Receiving investment performance reports quarterly from the Investment Consultant and Flash performance reports monthly*
- *Quantifiable criteria for measuring investment manager performance and specific criteria for putting a manager on 'Watch' and for terminating a manager*
- *Monitoring of investment fees*

**4** Is the policy integrated with existing funding or benefit policies? (i.e. does the policy take into account the current funded status of the plan, the specific liquidity needs, the underlying nature of the liabilities being supported [e.g. pay-based vs. flat \$ benefit, automatic COLAs, DROP, etc.]?)

The investment policy, as it pertains to the objective of achieving the actuarial assumed rate of return, does take into account the viability and funding objectives and requirements of the retirement plan.

**5** Is the policy written so clearly and explicitly that anyone could manage a portfolio and conform to the desired intentions?

The current investment policy is written clearly and explicitly so as to facilitate management and compliance of the portfolio with desired intentions. However, there are areas within the document that can be further aligned with “best practices”.

**RECOMMENDATION:**

*Recommendations include adding language into the IPS pertaining to the following:*

- *Review the IPS annually*
- *Meeting with the Investment Consultant at least quarterly*
- *Receiving investment performance reports quarterly from the Investment Consultant and Flash performance reports monthly*
- *Quantifiable criteria for measuring investment manager performance and specific criteria for putting a manager on ‘Watch’ and for terminating a manager.*
- *Monitoring of investment fees*

**6** Does the policy follow industry best practices? If not, what are the differences?

GBRA’s written investment policies and procedures broadly conform with industry practices. However, industry practices that are not in GBRA’s investment policies and procedures include the following:

- Review the IPS annually
- Meeting with the Investment Consultant at least quarterly
- Receiving investment performance reports quarterly from the Investment Consultant and Flash performance reports monthly
- Quantifiable criteria for measuring investment manager performance and specific criteria for putting a manager on ‘Watch’ and for terminating a manager
- Monitoring of investment fees

**RECOMMENDATION:**

*Recommendations include adding language into the IPS pertaining to the following:*

- *Review the IPS annually*
- *Meeting with the Investment Consultant at least quarterly*
- *Receiving investment performance reports quarterly from the Investment Consultant and Flash performance reports monthly*
- *Quantifiable criteria for measuring investment manager performance and specific criteria for putting a manager on ‘Watch’ and for terminating a manager*
- *Monitoring of investment fees*



**7 Does the IPS contain measurable outcomes for managers? Does the IPS outline over what time periods performance is to be considered?**

The GBRA IPS does not currently contain explicit measurable outcomes to which managers are required to adhere nor any time periods over which said outcomes should be measured.

Within Section II B. (Investment Objectives), the IPS does state “The overall objective of the Plan’s investment pool is to achieve the actuarial assumed rate of return. A 5 to 7-year period is appropriate in measuring progress toward achieving this objective”. This statement could be erroneously viewed as an implied time period for measuring performance of investment managers.

**RECOMMENDATION:**

*Generally, Investment Policy Statements include expected outcomes for managers and over specified time periods. For example, a manager is expected to outperform, on a net-of-fees basis, the specified benchmark over a 5-year time period. Another example is the manager must rank in at least the top 50th percentile of its peer group universe over a rolling 3-year time period. It is recommended that the IPS include explicit and measurable outcomes over specified time period to which investment managers are required to adhere.*

**8 Is there evidence that the system is following its IPS? Is there evidence that the system is not following its IPS?**

Based on our review of the IPS and calls with the investment consultant and actuary, it appears that GBRA is broadly following the IPS. This is in terms of delineation of responsibilities, and overall asset allocation. Specific elements in the IPS such as maximum weighting of a domestic equity holding at time of purchase to not exceed 8% or 5% more than the index weight, whichever is greater, are beyond the scope of this review. However, we have spoken GBRA’s investment consultant and confirmed that there is a mechanism by which the consultant monitors these criteria on a quarterly basis. Another example is evaluating the investment holdings across portfolios against the maximum exposures by currency specified in the IPS. These are examples of specific monitoring undertaken by the investment consultant on a quarterly basis. Based on our calls with the investment consultant, we believe these criteria and constraints are being regularly monitored.

We did notice, however, that the Target Allocation in Schedule A of the IPS is not current; it is as of July 2011. The current Target Allocation needs to be included as Schedule A of the IPS.

Further evidence that the retirement plan is following the IPS includes, but may not be limited to, the following:

- Quarterly Performance Reports
- Fiscal Year Actuarial Valuation Reports
- Investment Manager Search Materials
- Meeting Minutes

To the best of our knowledge there is no evidence that the retirement plan is intentionally non-compliant with the IPS.

RECOMMENDATION:

*Incorporate specific criteria to measure and monitor the performance of investment managers.*

**9** What practices are being followed that are not in, or are counter to, written investment policies and procedures?

GBRA's written investment policies and procedures broadly conform with industry practices. However, industry practices that are not in GBRA's investment policies and procedures include the following:

- Reviewing the IPS annually
- Meeting with the Investment Consultant at least quarterly
- Receiving investment performance reports quarterly from the Investment Consultant and Flash performance reports monthly
- Quantifiable criteria for measuring investment manager performance and specific criteria for putting a manager on 'Watch' and for terminating a manager.
- Language pertaining to monitoring investment fees

RECOMMENDATION:

*Incorporate into the IPS measurable criteria to include:*

- *Reviewing the IPS annually*
- *Meeting with the Investment Consultant at least quarterly*
- *Receiving investment performance reports quarterly from the Investment Consultant and Flash performance reports monthly*
- *Quantifiable criteria for measuring investment manager performance and specific criteria for putting a manager on 'Watch' and for terminating a manager*
- *Language pertaining to monitoring investment fees*

**10** Are stated investment objectives being met?

Per the IPS, "The overall objective of the Plan's investment pool is to achieve the actuarial assumed rate of return...". However, net investment returns failed to meet the actuarial assumed rate of return of 7% on an actuarial value of assets basis in the last 2 plan years, generating a return of 5.7% for plan year 2017 and 3.2% for plan year 2018.

**11** Will the retirement fund be able to sustain a commitment to the policies under stress test scenarios?

The Great Financial Crisis (GFC) that began in 2008 represents the period of greatest stress for the financial markets since the Great Depression more than 90 years ago. We ran a risk analysis on the GBRA's portfolio (using standard benchmarks to represent the portfolio's asset allocations). The stress tests cover over 30 years of history and encompass periods ranging from the Stock Market Crash of 1987 and the Kuwait Invasion in 1990 to the World Trade Center attack in 2001 and the Great Financial Crisis in 2008. The summary results of the stress tests are in Appendix 5, page 115. The left hand, middle section in Appendix 5, page 115 shows that the impacts on GBRA's portfolio from the 11 crises periods in the past 33 years range from +0.2% to -26%. The maximum negative effect is the -26% from the GFC crisis. This figure represents the maximum drawdown at the peak of the crisis from 9/2/08 to 11/20/08, a period of 58 trading days. The number of days for the maximum drawdowns during the peaks of the 11 crises periods range from 15 days to 104 days. It is important to note that the GBRA's IPS specifies a period of 5 to 7 years for measuring progress towards achieving the Plan's investment objectives.

**12** Will the investment managers be able to maintain fidelity to the policy under the same scenarios?

There is no reason to believe that investment managers will be unable to maintain fidelity to the GBRA policy. GBRA will rely on their investment consultant to assist in ensuring that managers maintain fidelity to not only the policy but the investment manager contract as well.

**13** Will the policy achieve the stated investment objectives under the same scenarios?

In our conversation with GBRA's investment consultant it is our understanding that the consultant has analyzed, tested, discussed, and implemented policy allocations designed to achieve stated investment objectives.

**14** How often is the policy reviewed and/or updated? When was the most recent substantial change to the policy and why was this change made?

The investment policy has not been updated since 2011.

**RECOMMENDATION:**

*Review the IPS annually and update policy as needed.*

## Asset Allocation Process

**1** Does the system have a formal and/or written policy for determining and evaluating its asset allocation? Is the system following this policy?

GBRA has written language in its IPS that addresses asset allocation. Policy Objectives #2 (page 3) states “create the framework for a well-diversified asset mix that can be expected to generate achievable long-term returns at a level of risk acceptable to the Plan”. The IPS goes on to state that the framework should include “describing an appropriate risk exposure for investment of Plan Funds”, “establishing investment guidelines...diversification of assets”, and “specifying the criteria for evaluating the performance of the Plan’s investment managers”. “specifying broad target asset allocation ranges and constraints”.

In Section III of the IPS (Portfolio Structure and Asset Allocation), the minimum and maximum ranges by major asset class are specified. From our discussions with staff and the investment consultant and in reviewing various reports provided by staff, the investment consultant and the Plan’s actuary, GBRA is following the written policy. There is, however, no written policy that explicitly addresses the evaluation of the asset allocation other than Section II Investment Objectives (page 7) in the IPS which states that “The Plan has a single investment objective: achieve the actuarial assumed rate of return (currently 8% per annum) over a reasonable period of time while maintaining sufficient liquidity to timely meet all payment obligations to Participants”.

### RECOMMENDATION:

- *Incorporate language in the IPS that explicitly defines two criteria for the evaluation of GBRA’s asset allocation. The first criterion would measure the asset allocation’s actual return compared to its stated expected investment return objective over an evaluation period of a market cycle, which is typically 5 to 7 years. The second criterion would evaluate the ranking of the GBRA’s investment returns in a universe of similar public pension plans over 1-, 3- and 5-year trailing time periods. While the investment returns of GBRA and the rest of the universe would include both the effects of the asset allocations as well as manager-selection effects, this criterion would still be a good proxy because extensive academic research has shown that asset allocation accounts for over 90% of a plan’s total return.*
- *The written policy in the IPS (page 3) states “specifying the criteria for evaluating the performance of the Plan’s Investment Managers”. On Page 7 of the IPS (II Investment Objectives), the criterion for the managers’ net-of-fees returns is versus relevant market indices. We would recommend that the language in this section be expanded to also include a measurement of the managers investment returns in comparison to the managers relevant peer group universes over trailing time periods of 1-, 3- and 5-years.*
- *The Target Allocation in Schedule A of the IPS is not current; it is as of July 2011. The current Target Allocation needs to be included as Schedule A of the IPS.*

**2 If no formal policy exists, what is occurring in practice?**

A formal policy exists as described in response to #1 above.

**3 Who is responsible for making the decisions regarding strategic asset allocation?**

GBRA's investment consultant undertakes the analysis for the GBRA Plan's strategic asset allocation and presents the results of the analysis together with recommendations to the Retirement and Benefit Committee, which then makes the final decision.

The above decision-making approach for strategic asset allocations is standard industry practice for non-discretionary retirement plans.

**4 How is the system's overall risk tolerance expressed and measured? What methodology is used to determine and evaluate the strategic asset allocation?**

Currently, GBRA's overall risk tolerance is expressed through the Retirement and Benefit Committee's evaluation, in conjunction with the investment consultant, of the strategic asset allocation analysis prepared by the investment consultant. Specifically, the simulations run in the asset allocation analysis provide a quantification of downside investment returns. A discussion and review of these simulations help shape the Committee's view of its risk tolerance.

The methodology for GBRA's strategic asset allocation is based on Morningstar's analytical software that utilizes a mean-variance framework to develop an efficient frontier for asset allocation analysis. Incorporated in the asset allocation analysis, are sensitivity analysis and Monte Carlo simulations to help identify a range of possible future outcomes, including downside investment returns, together with the associated probabilities for these outcomes. While the evaluation of GBRA's strategic asset allocation has not been explicitly defined in the IPS in terms of a quantified metric, the IPS does state that "the single investment objective for the Plan is to achieve the actuarial assumed rate of return over a reasonable period of time while maintaining sufficient liquidity to timely meet all payment obligations to Participants".

**RECOMMENDATION:**

*Incorporate language in the IPS that explicitly defines two criteria for the evaluation of GBRA's strategic asset allocation. The first criterion would measure the strategic asset allocation's actual return compared to its stated expected investment return objective over an evaluation period of a market cycle, which is typically 5 to 7 years. The second criterion would evaluate the ranking of the GBRA's investment returns in a universe of similar public pension plans over trailing time periods of 1-, 3- and 5-year time periods. While the investment returns of GBRA and the rest of the universe would include both the effects of the strategic asset allocations as well as manager-selection effects, this would still be a good proxy because extensive academic research has shown that asset allocation accounts for over 90% of a plan's total return.*

## 5 How often is the strategic asset allocation reviewed?

Based on our conversations with GBRA's investment consultant, the strategic asset allocation is reviewed once every 3 years, and more frequently if needed, depending on market conditions. The last asset allocation study was conducted in late 2018.

### RECOMMENDATION:

*Generally, the time frame for reviewing strategic asset allocations is once a year, and this would be a recommended change for GBRA's consideration.*

## 6 Do the system's investment consultants and actuaries communicate regarding their respective future expectations?

Based on our discussions with GBRA's investment consultant and the Plan's actuary, there is communication between the two regarding their respective future expectations. However, each uses its own expectations in the reports and analysis prepared for the GBRA's Retirement and Benefit Committee. The investment consultant utilizes its expected returns and risks by asset class in the asset allocation analysis prepared for the Committee. Likewise, the Plan's actuary uses its own expected returns by asset class in preparing its actuarial adequacy report for the Committee.

In reviewing reports from the investment consultant, staff and the actuary, it is clear that there is a material difference in the underlying return expectations between the actuary and the investment consultant. For example, the investment consultant's nominal expected return for Domestic Large Cap Equity is 6%, while the corresponding expected return from the actuary is 8.8%, a variance between the two of 280 bp. Likewise, the consultant's expected returns for Domestic Small Cap and Emerging Markets Equity are 7% and 8% respectively, whereas the actuary's expected returns for these two asset classes are 9.7% and 10.4% respectively, a variance of 240 bp to 270 bp.

### RECOMMENDATION:

*It is critically important to have consistency in the expected returns between the investment consultant and the actuary. GBRA's IPS states in Section II Investment Objectives (Page 7) that the "the Plan has a single investment objective: achieve the actuarial rate of return...". In Section III of the IPS (page 7), the asset class exposures (developed in conjunction with the investment consultant) are specified. These asset class expected returns are different from the actuary's expected returns for the same asset classes. Therefore, the GBRA IPS currently has a return objective that is based on assumptions that are different from the asset class expected return assumptions in the asset allocation that are meant to achieve the actuarial return objective.*

*The methodology and assumptions used by the investment consultant conform with standard industry practice. Our recommendation is that the actuarial required rate of return be specified based on just the long-term required rate of return for GBRA to meet its projected liabilities. In other words, there should not be any asset class expected return assumptions made by the actuary that result in the actuarial required rate of return.*



**7** How does the current assumed rate of return used for discounting plan liabilities factor into the discussion and decision-making associated with setting the asset allocation?

Based on our review of documents and discussions with GBRA's investment consultant and actuary, the actuarial assumed rate of return for discounting plan liabilities is recognized by the investment consultant as the Plan's investment return objective as stated in the IPS. However, the asset allocation analysis which results in setting target asset allocations is based on the investment consultant's asset class expected returns and the Committee's risk tolerance.

This approach is fairly standard across public pension plans. The actuarial required rate of return is calculated by the actuary as the long term required rate of return to meet the Plan's projected liabilities. However, the investment consultant's asset class expected return assumptions must be based on market conditions and expectations. To the extent that long-term asset class expected returns result in a total Plan expected investment return that is lower than the actuarial assumption, the GBRA may need to lower the Plan's future liabilities and/or increase contributions to the Plan.

**8** Is the actuarial expected return on assets a function of the asset allocation or has the asset allocation been chosen to meet the desired actuarial expected return on assets?

It is critically important to have consistency in the expected returns between the investment consultant and the actuary. GBRA's IPS states in Section II Investment Objectives (Page 7) that "the Plan has a single investment objective: achieve the actuarial rate of return...". In Section III of the IPS (page 7), the asset class exposures (developed in conjunction with the investment consultant) are specified. These asset class expected returns are different from the actuary's expected returns for the same asset classes. Therefore, the GBRA IPS currently has a return objective that is based on assumptions that are different from the asset class expected return assumptions in the asset allocation that are meant to achieve the actuarial return objective.

The methodology and assumptions used by the investment consultant conform with standard industry practice. Our recommendation is that the actuarial required rate of return be specified based on just the long-term required rate of return for GBRA to meet its projected liabilities. In other words, there should not be any asset class expected return assumptions made by the actuary that result in the actuarial required rate of return.

**9** Is the asset allocation approach used by the system based on a specific methodology? Is this methodology prudent, recognized as best practice, and consistently applied?

The asset allocation approach used by the GBRA's Investment Consultant is one that is based on Morningstar's analytical software that utilizes a mean-variance framework to develop an efficient frontier for asset allocation analysis. Incorporated

in the asset allocation analysis, are sensitivity analysis and Monte Carlo simulations to help identify a range of possible future outcomes, including downside investment returns, together with the associated probabilities for these outcomes. This methodology is prudent, widely used in the industry and considered best practice. It appears to have been consistently used in the asset allocation analysis for GBRA.

**10 Does the system implement a tactical asset allocation? If so, what methodology is used to determine the tactical asset allocation?**

Based on our discussions with GBRA's investment consultant, tactical asset allocations are considered on a quarterly basis. The time horizon for tactical asset allocations is 18 months. An important element in the framework for evaluating tactical asset allocation opportunities is relative value. So, the investment consultant reviews and analyzes if there are relative value opportunities that can be capitalized on with a shorter time horizon than the strategic asset allocation. The opportunities would encompass both inter and intra asset class. For example, Growth versus Value in Domestic Large Cap.

The framework and methodology utilized for tactical asset allocation decisions is reasonable and conforms to industry practice.

**11 Who is responsible for making decisions regarding the tactical asset allocation?**

GBRA's investment consultant undertakes all the analysis regarding tactical asset allocations and presents the analysis and the consultant's recommendations for the Retirement and Benefit Committee's review. The Committee makes the final decision.

In non-discretionary retirement plans, the approach to tactical asset allocation decision-making described above is standard industry practice.

**12 How does the asset allocation compare to peer systems?**

	<b>GBRA</b>	<b>NASRA AVERAGE<sup>1</sup></b>
<b>Public Equity</b>	52%	49%
<b>Fixed Income</b>	26%	23%
<b>Alternatives</b>	12%	19%
<b>Real Estate</b>	10%	7%
<b>Short-Term Inv (Cash)</b>	0%	2%

<sup>1</sup>National Association of State Retirement Administrators Pension Plan Average

Based on the average pension plan asset allocations from NASRA, GBRA's asset allocation are in line (within +/- 3%) for all the asset classes except Alternatives, where GBRA's allocation is 7 percentage points below the pension plan average.



## Asset Class

### 1 What are the strategic and tactical allocations?

GBRA's asset allocations shown below were obtained from the investment consultant's preliminary Investment Performance Analysis report as of 12/31/19. The strategic allocations represent the Policy index's allocation, while the current asset allocation reflects the tactical allocation.

ASSET ALLOCATIONS (12/31/19)	STRATEGIC	TACTICAL
Domestic Equity	37%	44.2%
International Equity	15%	14.8%
Global Fixed Income	26%	18.9%
Alternatives	12%	9.1%
Real Estate	10%	8.4%
Short-Term Inv (Cash)	0%	4.6%

### 2 What is the expected risk and expected rate of return of each asset class?

Asset class expected returns and expected risks are shown below from the investment consultant's most recent asset allocation study.

	EXP RETURN	EXP RISK
U.S. Large Cap Equity	6%	17.1%
U.S. Small Cap Equity	7%	22%
International Equity — Dev Mkts	7.5%	19.9%
International Equity — Emerging Mkts	8%	25.4%
Global Fixed Income	3.9%	5.2%
Alternatives	6%	7.9%
Real Estate	9.5%	7.4%
Short-Term Inv (Cash)	2.5%	1.1%

### 3 How is this risk measured and how are the expected rates of return determined? What is the time horizon?

GBRA's investment consultant measures risk for each asset class by calculating historical standard deviations by asset class. For expected returns by asset class, the

firm meets on a quarterly basis to discuss the assumptions underlying each asset class and changes to expected returns are made as needed. The time horizon assumed by the consultant is 3 to 5 years.

Asset allocation analysis is part science and part art. The general framework that GBRA's consultant uses for determining expected returns and expected risks is along the lines of standard industry practice.

#### 4 What mix of assets is necessary to achieve the plan's investment return and risk objectives?

For retirement plans in general, a diversified mix of assets is necessary to achieve stated return and risk objectives. In GBRA's case, the investment consultant's return expectations for Fixed Income and International Equity are 3.9% and 7.5% respectively. Clearly, if 100% of GBRA's assets was invested in Fixed Income, the Plan would not meet its return objective. On the other hand, if the Plan invested 100% of its assets in International Equity, it would appear that the Plan would meet its return objective, but the Plan would be exposed to significant risk because the risk associated with the International Equity asset class is almost 20% compared to a risk level of 5.2% for Fixed Income. Therefore, in developing asset allocations for retirement plans, a proper balance needs to be maintained between asset classes taking into account expected returns, expected risks and correlations between asset classes. In the latest (November 2018) asset allocation study run by GBRA's investment consultant, the Monte Carlo simulations over a 7-year period show that the GBRA's recommended asset allocation has returns that range from -0.8% to 13.9% with the 50th percentile return at 5.9%. These returns are based on just asset class (benchmark) expected returns. The total return over the 7-year period would also include contributions to return from tactical asset allocations as well as from investment managers excess returns (i.e. outperformance over benchmarks).

The results from asset allocations analyses are projections and not guarantees. They are based on assumptions that may or may not materialize. With that said, assuming GBRA's investment consultant recommends (and the Committee accepts the recommendations) investment managers who will outperform their benchmarks, and investment return additive tactical asset allocations are recommended and implemented, it is reasonable to assume that GBRA's has the necessary mix of assets to achieve the Plan's investment return and risk objectives.

#### RECOMMENDATION:

*We ran an asset allocation analysis (Appendix 4, page 106) which uses as inputs the GBRA investment consultant's assumptions of asset class expected returns and expected risks, and the Plan's asset allocation guidelines specified in the IPS. For our analysis, we also only utilized the most current and specific asset class strategies that are in the GBRA portfolio as of 12/31/19. The results on page 113 show that by making some changes to the current asset class allocations, it may be possible to increase the total portfolio's annualized expected return by +50 bp, while maintaining the same level of risk. The changes in the asset class allocations for GBRA's review and consideration are summarized below.*

ASSET CLASS STRATEGY	CURRENT WEIGHT	PROPOSED WEIGHT	CHANGE
Cash	4.6%	0%	-4.6%
U.S. Core Fixed Income	3.4%	5%	+1.6%
International Fixed Income	14.2%	5%	-9.2%
Private Credit/(U.S. High Yield)	1.3%	10%	+8.7%
U.S. Large Cap Equity	36.8%	10%	-26.8%
U.S. Small Cap Equity	7.4%	15%	+7.6%
International Equity	10.9%	14.7%	+3.8%
Emerging Markets Equity	3.9%	10%	+6.1%
Real Estate %	8.4%	10%	+1.6%
Hedge Fund of Funds	9.1%	20.3%	+11.2%
Expected Return (5 Years)	5.3%	5.8%	
Risk (Standard Deviation)	11.6%	11.6%	
Sharpe Ratio	0.30	0.34	

## 5 Is the approach used by the system to formulate asset allocation strategies sound, consistent with best practices, and does it result in a well-diversified portfolio?

The approach used by the GBRA's Investment Consultant to formulate asset allocation strategies is one that is based on Morningstar's analytical software that utilizes a mean-variance framework to develop an efficient frontier for asset allocation analysis. Incorporated in the asset allocation analysis, are sensitivity analysis and Monte Carlo simulations to help identify a range of possible future outcomes, including downside investment returns, together with the associated probabilities for these outcomes. This approach is widely used in the industry, consistent with best practices and results in a well-diversified portfolio.

## 6 How often are the strategic and tactical allocations reviewed?

Based on our conversations with GBRA's investment consultant, the strategic asset allocation is reviewed once every 3 years, and more frequently if needed, depending on market conditions. The last asset allocation study was conducted in late 2018. Tactical asset allocations are considered by the consultant on a quarterly basis.

### RECOMMENDATION:

*Generally, the time frame for reviewing strategic asset allocations is once a year, and this would be a recommended change for GBRA's consideration.*

## Alternatives Selection & Valuation

### 1 How are alternative and illiquid assets selected, measured and evaluated?

The Investment Consultant has the responsibility of identifying suitable alternative strategies, performing due diligence on prospective strategies/managers, leading the manager selection process and monitoring the Plan's alternative investments.

The Investment Consultant, with 32 individuals tasked with manager research, seems appropriately staffed to perform the above mentioned functions. The Research Advisory Board ("RAB"), comprised of the Consultant's senior research professionals, provides guidance and general oversight of the research activities.

The research and selection process is in line with the industry standards, comprised of specified research steps, including mandatory on-site visits. The final approval decisions are made by RAB.

The Investment Consultant maintains approved manager lists for liquid alternative strategies, while for closed-end funds, the recommended lists are created as needed (each closed-end fund has a limited capital-raising period, during which new limited partners are admitted).

The process of selecting a new alternative manager/strategy culminates in a search report, created by the Investment Consultant. The search report, shared with the Plan Trustees, contains comparative analysis of several strategies (usually around five "finalists"). The Trustees are ultimately responsible for selecting one or more strategies the Plan's assets will be allocated to. Ensuring that Trustees can make a well-informed decision, in addition to the search report, the process mandates the finalist managers to present their firm and strategy to the Trustees during a scheduled Board meeting.

Once an alternative mandate is awarded, the Investment Consultant continues to monitor the investment. Each investment's performance is reviewed either monthly or quarterly (depending on the strategy). In addition to performance monitoring, the Investment Consultant performs quarterly qualitative reviews of managers, evaluating any changes from the business, team, process and operational perspective. At least annually, for each alternative investment the Investment Consultant will perform an in-depth review which includes an on-site visit.

#### RECOMMENDATION:

*The Plan's quarterly Investment Performance Reports should include the benchmark information for the Courage Credit Opportunities Fund III and TerraCap Partners III and IV so that each strategy performance can be properly evaluated.*

### 2 Are the system's alternative investments appropriate given its size and level of investment expertise?

The alternative strategies utilized by the Plan are appropriate, given the overall goal of reducing the Plan's volatility and adding diversification.

Given the Plan's size, the use of fund-of-funds in the hedge fund area is prudent. With direct hedge fund investments, it would be hard to achieve the desired level of diversification to properly mitigate the idiosyncratic risk as well as achieve a proper allocation across various hedge fund strategies.

The allocation to alternatives is within the Investment Policy prescribed ranges.

### 3 Does the IPS outline the specific types of alternative and illiquid investments allowed, as well as the maximum allocation allowable?

The IPS breaks down alternative investments in two groups:

- 1 Alternative Investments (the IPS Investment Range 0% - 25%)  
This group includes convertible securities, hedge funds, private equity and managed futures.
- 2 Real Estate (the IPS Investment Range 0% - 10%)

This group includes private equity real estate, REITs, infrastructure and timber.

Within the two groups, the IPS does not specify the sub-strategy limits. In addition, there are no specified allocation limits to individual managers. Also, only for Real Estate the IPS provides specific descriptive language regarding diversification and currency hedging.

#### RECOMMENDATION:

*The IPS should be updated to properly reflect the alternative investments universe and classify various alternative strategies and sub-strategies under a single Alternative Investments category.*

*For example, in the current IPS, Real Estate is identified as a distinctive category, separate from the Alternative Investments class. We recommend Real Estate to be included with other Alternative Investments. In addition, Infrastructure and Timber are currently classified under Real Estate, instead of Real Assets. Moreover, the IPS should include some other alternative investments often utilized by pension plans, such as private debt, commodities and others. Specific language should be applied to each alternative strategy listed in the IPS, preferably with recommended allocation ranges.*

### 4 What valuation methodologies are used to measure alternative and illiquid assets?

Each alternative investment manager reports their respective net asset value ("NAV") to the Plan on a monthly or quarterly basis (depending on the strategy) based on generally accepted accounting principles. The valuation methodology for each alternative asset varies depending on the asset class (e.g. real estate, timber, infrastructure). Each alternative asset manager's valuations come from a third-party administrator.

#### RECOMMENDATION:

*It is imperative at the onset of the Plan's relationship with an alternative asset manager*

*that GBRA, with assistance from the investment consultant, ensure that underlying funds' NAV is computed based on strategy-appropriate accounting/valuation practices for each type of alternative asset and that reputable independent, third-party administrators, custodians and auditors are retained by each underlying alternative manager.*

**5** What alternative valuation methodologies exist and what makes the chosen method most appropriate?

See response to Question 4 above.

## Cash Flow/Liquidity Needs

**1** What are the plan's anticipated future cash flow and liquidity needs? Is this based on an open or closed group projection?

The defined benefit plan was closed in 2010 and frozen in 2018. After freezing the plan, a 10-year amortization period was instituted to achieve full funding. In coordination with the actuary and investment consultant, GBRA assesses cash flow and liquidity needs on an annual basis

**2** When was the last time an asset-liability study was performed?

An asset-liability study has not been performed since the inception of the plan in 1966.

**3** How are system-specific issues incorporated in the asset allocation process?

System specific risks are addressed via the adopted funding policy which then facilitates the crafting of an appropriate asset allocation.

**4** What is the current funded status of the plan and what impact does it have?

As of January 1, 2019, the funded ratio of the plan is 86.9% and the unfunded actuarial liability (UAL) is \$4,643,707. Based on the current funding policy, the actuary recommended a minimum contribution of \$653,540 as a level dollar amount for the plan year ending December 31, 2019, which is expected to amortize the UAL over the 10-year period beginning January 1, 2019.

**5** What changes should be considered when the plan is severely underfunded, approaching full funding, or in a surplus?

Employing an appropriate asset allocation to address growth of assets and liabilities with an emphasis on risk management in addressing the funded status of the plan while minimizing budget impacts is integral.

#### RECOMMENDATION:

*Work closely with actuary and investment consultant to utilize reasonable assumption inputs and craft appropriate asset allocation to achieve funding objectives in a risk prudent manner.*

#### **6** How does the difference between expected short-term inflows (contributions, dividends, interest, etc.) and outflows (distributions and expenses) impact the allocation?

In discussions with the investment consultant, typically, a portion of annual contributions are held in short term investments for the purpose of meeting short term payments. In the event cash needs to be raised, the investment consultant looks at asset classes out of allocation ranges, asset classes that have had a significant run up, and/or asset classes where the investment consultant's outlook may have changed significantly. If there are no obvious areas, funds can be raised from several managers to keep allocations in line. Also, distributions from alternative investments can be utilized if a distribution occurs during the period covered, but typically, three to six months of expenses are in cash.

#### **7** How does the underlying nature of the liabilities impact the allocation (e.g. pay-based vs. flat \$ benefit, automatic COLAs, DROP, etc.)?

Underlying liabilities impact asset allocations specifically and directly in terms of future cash flow requirements. So, pay-based liabilities have more factors that need to be estimated and predicted compared to flat-dollar benefits. When liabilities are explicitly incorporated in the asset allocation analysis, the resulting optimal asset allocation may be somewhat different from an asset allocation that has only an actuarial rate of return objective. The GBRA Plan's IPS only specifies an actuarial rate of return objective.

Although future liabilities underly all public pension plans, it is fairly common in the industry to have just an actuarial rate of return as the objective for the asset allocation. There are very few plans that explicitly include a requirement for the plans' underlying liabilities to be incorporated in the design of the asset allocation. So, in this regard, GBRA's approach conforms with a majority of industry practice.

#### **8** What types of stress testing are incorporated in the process?

The asset allocation is stress tested utilizing monte-carlo simulation to assess the potential range of outcomes over long-term periods while the actuarial valuation reports incorporates the changes in various assumptions including discount rates and their impact on valuation of plan liabilities and subsequent effects on required contributions.

## Investment Fees & Commissions

**1** Do the system's policies describe the management and monitoring of direct and indirect compensation paid to investment managers and other service providers?

Guadalupe-Blanco River Authority does maintain a Funding Policy that addresses the sources of funding for costs associated with the management and oversight of the defined benefit plan, as seen below, but neither the Funding Policy nor the Investment Policy address the monitoring of direct and/or indirect compensation paid to investment managers or other service providers.

### PLAN COSTS/FEES FUNDING SOURCES

Paid via annual operating budget:

- Administrative & Trustee Services
- Investment Consulting
- Legal Counsel

Paid via defined benefit plan:

- Investment Management

### RECOMMENDATION:

*Specific language pertaining to the management and monitoring of fees should be incorporated into the IPS.*

**2** What direct and indirect investment fees and commissions are paid by the system?

Per the funding policy, expected costs and fees are as follows:

- Administrative and Trustee/Custody
- Investment Consulting
- Legal Counsel
- Investment Management

**3** Who is responsible for monitoring and reporting fees to the board?

Per the IPS, the Retirement and Benefit Committee of the Guadalupe-Blanco River Authority is responsible for the overall governance of the plan and serves as the plan's governing body. The committee has the authority to hire and oversee external professionals to assist in the management of the plan.



#### 4 Is monitoring and reporting of fees clearly defined in the investment policy?

The investment policy does not currently address the monitoring and reporting of fees.

##### RECOMMENDATION:

*Include language in the IPS pertaining to monitoring and reporting of fees; the investment management fees, in particular.*

#### 5 Are all forms of manager compensation included in reported fees?

Investment manager compensation is stated in the investment manager contracts.

#### 6 How do these fees compare to peer group and industry averages for similar services?

INVESTMENT	PEER UNIVERSE	INVESTMENT VEHICLE	MGMT FEE/ EXP. RATIO	MEDIAN PEER UNIVERSE MGMT FEE/EXP. RATIO
<b>Wells Fargo Adv Growth Fund</b>	U.S. Large Cap Growth Equity	Mutual Fund	0.75%	0.75%
<b>Eastern Shore Small Cap Core</b>	U.S. Small Cap Core Equity	Commingled Fund	0.90%	0.57%
<b>Diamond Hill Large Cap Value</b>	U.S. Large Cap Value Equity	Mutual Fund	0.58%	0.72%
<b>Sustainable Insight Capital</b>	U.S. Large Cap Value Equity	Separate Account	0.65%	0.62%
<b>Oppenheimer International Growth</b>	EAFE Large Cap Growth Equity	Mutual Fund	0.89%	0.92%
<b>LMCG Emerging Markets Equity</b>	All Emerging Market Equity	Commingled Fund	0.85%	0.90%
<b>Brandywine Global Opportunistic Fixed Income</b>	Global Government Fixed Income	Commingled Fund	0.45%	0.45%
<b>Johnson Core Bond</b>	U.S. Intermediate Duration Fixed Income	Mutual Fund	0.24%	0.48%
<b>Aberdeen Emerging Markets Debt</b>	Global Emerging Market Fixed Income (Hard Currency)	Mutual Fund	0.90%	0.74%
<b>Courage Credit Opportunities III</b>	-	Private Debt	1.75% / 20%	
<b>Ironwood Multi-Strategy</b>	-	Commingled Fund	1.20%	
<b>BTG Pactual Global Timberland Resources</b>	-	Private Equity	1.00%	
<b>TerraCap Partners III</b>	-	Private Real Estate	1.5% / 20%	
<b>TerraCap Partners IV</b>	-	Private Real Estate	1.5% / 20%	

Source: eVestment, CBIZ

## 7 How are the fee benchmarks determined?

Investment manager fees were benchmarked against median fees in appropriate asset class/strategy and investment vehicle universes provided in the eVestment database, an institutional investment data provider recognized in the institutional investment industry.

## 8 Does the system have appropriate policies and procedures in place to account for and control investment expenses and other asset management fees?

GBRA does maintain a funding policy that addresses the sources of funding for costs associated with the management and oversight of the defined benefit plan but neither the funding policy nor the investment policy address the monitoring of direct and/or indirect compensation paid to investment managers and/or policies pertaining to review and control of investment expenses.

## 9 What other fees are incurred by the system that are not directly related to the management of the portfolio?

In addition to utilizing the services of an institutional investment consultant, GBRA is also serviced by an actuary and a custody bank.

## 10 How often are the fees reviewed for reasonableness?

Currently there are no standard timeframes or protocol in place for GBRA's review of the reasonableness of fees. GBRA currently relies on the expertise of their investment consultant to review, negotiate, and monitor investment expenses and asset management fees.

### RECOMMENDATION:

*Services provided by an actuary, investment consultant, and custody bank should be reviewed every 3–5 years while investment manager fees should be reviewed every 1–2 years.*

## 11 Is an attorney reviewing any investment fee arrangements for alternative investments?

GBRA relies on its institutional investment consultant to review, negotiate, and monitor fee arrangements for alternative investments on their behalf.

## Governance

### Transparency

**1** Does the system have a written governance policy statement outlining the governance structure? Is it a stand-alone document or part of the IPS?

GBRA does not have a stand-alone governance policy statement. However, governance related roles and responsibilities are incorporated into the IPS.

**2** Are all investment-related policy statements easily accessible by the plan members and the public (e.g. posted to system website)?

GBRA maintains a “Transparency” webpage enabling access to defined benefit plan information consisting of compliance confirmation, investment returns and assumptions, actuarial valuation report, and pension plan audits. The webpage does not currently provide access to investment performance reports or the investment policy statement.

#### RECOMMENDATION:

*Consider posting investment performance reports and investment policy statement to webpage.*

**3** How often are board meetings?

The R&B Committee has been delegated the authority with management and oversight responsibilities for the retirement plan. The committee meets quarterly.

**4** What are the primary topics of discussion at Board meetings?

Primary topics of discussion include quarterly review of investment performance, discussions and possible actions regarding investments, actuarial valuation and plan contribution approvals, and legislation affecting public pension plans.

**5** How much time, detail, and discussion are devoted to investment issues at Board meetings?

On average, 1.5 hours is devoted to the discussion and review of investment issues in the Retirement and Benefit Committee meeting pertaining to the retirement plan. As previously mentioned, Primary topics of discussion include quarterly review of investment performance, discussions and possible actions regarding investments, actuarial valuation and plan contribution approvals, and legislation affecting public pension plans.

**6** Are meeting agendas and minutes available to the public? How detailed are the minutes?

Meeting agendas and minutes are made available to the public with sufficient detail.

## Investment Knowledge/Expertise

### 1 What are the backgrounds of the board members?

R&B COMMITTEE MEMBERS	TITLE	GBRA ROLE	YEARS ON BOARD	R&B COMMITTEE ROLE	YEARS ON R&B COMMITTEE	YEAR STARTED ON COMMITTEE
<b>Dr. Kenneth Motl</b>	Veterinarian	GBRA Board of Directors	January 2013	Committee Chair	7 years	January 2013
<b>Will Carbonara</b>	Insurance Agent	GBRA Board of Directors	May 2013	Member	7 years	January 2013
<b>Ron Hermes</b>	School Teacher (Physics)	GBRA Board of Directors	August 2016	Member	1 year	January 2019
<b>Susan Hubbert</b>	Deputy CFO	Employee	N/A	Member	12 years	January 2008
<b>Darel Ball</b>	Advisor to the General Manager	Employee	N/A	Member	23 years	July 1997
<b>Lauren Willis</b>	Director of Regulatory & Consumer Affairs	Employee	N/A	Member	3 years	January 2017
<b>Anna Daniels</b>	Lower Basin — Regional Representative	Employee	N/A	Member	6 months	August 2019
<b>Randy Staats</b>	CFO	Employee	N/A	Administrator	1.5 years	June 2018

### 2 Are there any investment-related educational requirements for board members?

Training requirements are established by Texas laws and governed by the Texas Pension Review Board. New members (trustees & administrator) must earn 7 hours of training within their first year. Areas of training include: Benefits Administration, Risk Management, Ethics, Governance, Actuarial Matters, Fiduciary Matters, and Investments.

After the first year, members must earn 4 training hours every two years.

Training hours are reported semi-annually to the Texas Pension Review Board.

### 3 What training is provided and/or required of new board members?

There is currently no investment-related formal training that is provided by the Board. However, new members (trustees & administrator) must earn 7 hours of training within their first year of membership.

#### RECOMMENDATION:

*Develop on-boarding procedures, protocols, and materials to assist new board and committee members in understanding management of the retirement plan as well as their fiduciary responsibilities and regulatory requirements.*

#### 4 How frequently are board members provided investment-related education?

Formal investment-related education is not currently provided. However, the board and R&B Committee members are kept abreast of industry and market trends via their service providers and are required to earn 7 hours of training within their first year of membership and 4 hours every 2 years thereafter.

##### RECOMMENDATION:

*Potential options include:*

- *Requiring investment consultant to coordinate annual investment manager roundtables of existing investment managers*
- *Requiring investment consultant to conduct 1–2 investment-related education workshops per year*

#### 5 What are the minimum ethics, governance, and investment education requirements? Have all board members satisfied these minimum requirements?

There are currently no minimum ethics, governance, and investment education requirements set forth by the board.

##### RECOMMENDATION:

*Develop reasonable, manageable, cost-effective, and time appropriate requirements such as development of trustee handbooks and attestation to reading of the selected handbook materials.*

#### 6 Does the system apply adequate policies and/or procedures to help ensure that all board members understand their fiduciary responsibilities?

While it is clear that GBRA is fulfilling its fiduciary responsibilities it is not clear that GBRA is currently applying adequate policies and/or procedures to help ensure that all board members have a thorough understanding of their fiduciary responsibilities. However, current Retirement and Benefit Committee members have an average of over 7.5 years of membership on the committee.

##### RECOMMENDATION:

*Develop appropriate minimum ethics, governance, and investment education requirements then subsequently, develop trustee handbook to include appropriate policies and procedures and require attestation on an annual basis by committee members.*

#### 7 What is the investment management model (i.e. internal vs. external investment managers)?

GBRA currently utilizes external investment managers to manage the assets of the retirement plan.

**8 Does the board receive impartial investment advice and guidance?**

The retirement plan is currently advised by an institutional investment consultant.

**9 How frequently is an RFP issued for investment consultant services?**

The last Investment Consultant RFP was issued in 2010.

**RECOMMENDATION:**

*Best practices recommend issuing an investment consultant RFP every 3–5 years.*

## **Accountability**

**1 How is the leadership of the board and committee(s), if any, selected?**

The members of the GBRA Board of Directors are appointed by the Governor of Texas. The Board of Directors assigns committee memberships for each board member. The Board of Directors has delegated the management and oversight of the GBRA retirement plan to the Retirement and Benefits Committee. The R&B Committee consists of three GBRA board members and four employee representatives. The GBRA Board of Directors assigns the board members serving on the R&B Committee and the board members serving on the Committee in turn select the employee representatives.

**2 Who is responsible for making decisions regarding investments, including manager selection and asset allocation?**

The R&B Committee has been given the authority by the GBRA Board of Directors to make the appropriate decisions regarding the management and oversight of the retirement plan which includes, but is not limited to, investment manager selection and asset allocation.

**3 How is authority allocated between the full board, a portion of the board (e.g. an investment committee), and internal staff members and/or outside consultants?**

The Board of Directors has delegated the management and oversight of the GBRA retirement plan to the Retirement and Benefits Committee. The R&B Committee has hired, and monitors, professionals in the following areas to assist in the management and oversight of the plan and facilitate compliance with regulatory requirements and fiduciary responsibilities.

Professional Services Utilized:

- Actuary
- Institutional Investment Consultant
- Custody Bank

**4 Does the IPS clearly outline investment decision responsibility?**

The IPS does outline the investment decision roles and responsibilities.

**5 Is the board consistent in its use of the structure/delegation of authority?**

The board has been consistent in its use of the structure/delegation of authority.

**6 Does the system have policies in place to review the effectiveness of its investment program, including the roles of the board, internal staff and outside consultants?**

GBRA does have policies incorporated into the investment policy statement to review the effectiveness of its investment programs. However, as previously mentioned, although the roles and responsibilities of the parties involved in governance matters are fairly well defined and the written investment policies and procedures broadly conform with industry practices, we do recommend changes to include identifying and incorporating more specificity for measurable criteria.

**7 Is the current governance structure striking a good balance between risk and efficiency?**

The GBRA Board of Directors has delegated the responsibility of management and oversight of the retirement plan to the Retirement and Benefit Committee. The R&B Committee currently consists of 3 assigned board members and 4 employee representatives. We do believe the governance structure is striking a good balance between risk and efficiency.

**RECOMMENDATION:**

*If feasible, place term limits on employee representative members, as board members are already limited to 2 terms consisting of 6 years each, and be sure to stagger the terms to facilitate continuity.*

**8 What controls are in place to ensure policies are being followed?**

The Retirement and Benefit Committee has been given responsibility for management and oversight of the retirement plan. The committee meets quarterly to review and discuss the various aspects of the plan and, in coordination with the professional experts that service the committee, make decisions regarding the monitoring and management of the plan to facilitate compliance with policies and regulatory requirements.

**9 How is overall portfolio performance monitored by the board?**

The R&B Committee utilizes the services of an institutional investment consultant to manage and monitor the portfolio of the retirement plan. The committee

formally meets quarterly with the investment consultant to discuss the portfolio's performance and make appropriate decisions as necessary.

**10** How often are the investment governance processes reviewed for continued appropriateness?

Currently there is no standard timeframe in place for reviewing the investment government processes.

**RECOMMENDATION:**

*The investment governance processes should typically be reviewed on an annual basis.*

## **Investment Manager Selection & Monitoring**

**1** Who is responsible for selecting investment managers?

The Retirement and Benefit Committee is delegated the responsibility to select investment managers. The committee utilizes the services of an institutional investment consultant to assist in its selection of investment managers.

**2** How are the managers identified as potential candidates?

The Retirement and Benefit Committee utilizes the services of an institutional investment consultant to provide potential investment manager candidates for selection.

**3** What are the selection criteria for including potential candidates?

Selection criteria for including potential candidates include, but is not limited to, 3-year performance track record, minimum product assets based on asset class, 3-year and 5-year batting average, downside capture ratio, and excess return over the appropriate benchmark.

**4** What are the selection criteria when deciding between multiple candidates?

Finalist candidates are selected by the Retirement and Benefit Committee after reviewing analysis by, and discussions with, the investment consultant. All finalist candidates are required to present their firm and strategy to the committee. Each candidate is typically given 20 minutes to present, plus another 10 minutes for Q&A. The committee then discusses and votes on the manager and strategy that best fits the needs and objectives of the GBRA retirement plan portfolio.

**5** How does the selection process address ethical considerations and potential conflicts of interest for both investment managers and board members?

GBRA has a Board policy which addresses ethics and conflict of interest. Local



Government Code Chapter 171 regulates conflicts of interest of Directors and officers of GBRA. However, the selection process for investment managers does not directly address potential conflicts of interest for committee members.

**RECOMMENDATION:**

*Consider crafting explicit statement of conflict of interest rules pertaining to committee members.*

**6 Who is responsible for developing and/or reviewing investment consultant and/or manager contracts?**

The Retirement and Benefit Committee is responsible for reviewing the investment consultant. The committee relies on the assistance of the investment consultant in reviewing investment manager contracts.

**7 What is the process for monitoring individual and overall fund performance?**

The Retirement and Benefit Committee relies on the services of the investment consultant to measure, monitor, and report on investment manager and overall fund performance with a minimum frequency of quarterly. Measures monitored by the investment consultant pertaining to investment managers include, but are not limited to, trailing period returns (Quarter, 1-year, 3-year, 5-year) relative to benchmarks and peer groups, 5-year standard deviation, 3-year and 5-year batting average, downside capture ratio, and excess return over an appropriate benchmark. At the overall fund level, trailing period returns (Quarter, 1-year, 3-year, 5-year, 7-year) relative to target weighted policy index and plan universe peer group are measures that are consistently monitored.

**8 Who is responsible for measuring the performance?**

The Retirement and Benefit Committee relies on the services of the investment consultant to measure, monitor, and report performance.

**9 What benchmarks are used to evaluate performance?**

As reported in GBRA's quarterly investment report, investment manager performance is benchmarked against asset class appropriate indexes and peer group universes while overall fund performance is benchmarked against the target weighted policy index and a net of fee plan universe consisting of public defined benefit plans with market values of less than \$50 million.

**10 What types of performance evaluation reports are provided to the board? Are they provided in a digestible format accessible to trustees with differing levels of investment knowledge/expertise?**

An investment report is provided to GBRA by the investment consultant on a quarterly basis. The report is provided in an accessible format to trustees.

**11** How frequently is net-of-fee and gross-of-fee investment manager performance reviewed?

Investment manager performance, at a minimum, is reviewed quarterly.

**12** Is net-of-fee and gross-of-fee manager performance compared against benchmarks and/or peers?

Investment manager performance is compared against asset class and strategy appropriate benchmarks and peer groups.

**13** What is the process for determining when an investment manager should be replaced?

Currently, the investment consultant advises and presents to the R&B Committee on investment managers that should be terminated/replaced for approval by the committee.

**RECOMMENDATION:**

*GBRA should include language in the IPS specific to the criteria for termination/replacement of an investment manager.*

**14** How is individual performance evaluation integrated with other investment decisions such as asset allocation and investment risk decisions?

Investment manager performance and risk attributes are a component of overall fund performance and volatility metrics of the fund. Therefore, investment manager performance evaluation and investment manager compliance with investment policy statement objectives is integral in achieving the stated objective of achieving the actuarial assumed rate of return over a reasonable period of time while maintaining sufficient liquidity to timely meet all payment obligations to Participants.

## **APPENDIX 2**

# Investment Policy Statement

**Investment Policy Statement**  
**For**  
**Retirement Plan for Employees of**  
**Guadalupe-Blanco River Authority**

**Adopted on July 29, 2011**

# TABLE OF CONTENTS

<b>Purpose.....</b>	<b>2</b>
<b>Policy Objectives.....</b>	<b>2</b>
<b>Procedures for Implementation.....</b>	<b>3</b>
<b>Delineation of Responsibilities .....</b>	<b>3</b>
The Guadalupe-Blanco River Authority Board of Directors .....	3
The Retirement and Benefit Committee of the Guadalupe-Blanco River Authority .....	3
The Executive Manager of Finance and Administration.....	4
Investment Consultant.....	5
Investment Managers .....	5
Custodians.....	6
Actuary.....	6
<b>Investment Objectives .....</b>	<b>7</b>
<b>Portfolio Structure and Asset Allocation .....</b>	<b>7</b>
Purpose .....	7
Asset Class Exposure .....	7
Target Allocation.....	8
<b>Investment Manager General Guidelines.....</b>	<b>9</b>
All Investment Managers .....	9
Domestic Equity Holdings.....	9
International Equity Holdings.....	9
Global Fixed Income (Including High Yield) .....	9
Alternative Investments .....	10
Real Estate .....	10
Short-Term Investments .....	10
<b>Investment Manager Relations.....</b>	<b>10</b>
Communication Requirements .....	10
Periodic Meetings .....	11
Proxy Voting .....	11
Commission Recapture .....	12
<b>Schedule A.....</b>	<b>13</b>
Target Allocations .....	13

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### **Purpose**

This Investment Policy Statement has been adopted by the Retirement and Benefit Committee (Committee) of the Guadalupe-Blanco River Authority to outline the prudent and acceptable investment philosophy of the Retirement Plan for Employees of Guadalupe-Blanco River Authority ("Plan"). It will also define the Plan's investment management procedures and long-term goals. It is meant to provide a clear understanding between the Board, Committee, Staff, the Investment Consultant and Investment Managers concerning the investment policies and objectives of the Plan.

The Plan is a qualified governmental defined benefit plan that was closed to new participants on December 31, 2010.

### **Investment-Related Duties of the Committee**

The Plan is a "public retirement system" as defined in and made subject to Title 8 of the Texas Government Code. As a result, the Committee, its "governing body," is subject to certain investment-related requirements of Title 8, including the following:

- Developing and maintaining a written investment policy, making it available for public view, and filing a copy with the Texas Pension Review Board within 90 days of its adoption.
- Discharging its investment-related duties solely in the interest of the Participants and for the exclusive purposes of providing benefits to Participants and defraying reasonable expenses of administering the Plan, with the care, skill, prudence, and diligence under the prevailing circumstances that a prudent person acting in a like capacity and familiar with matters of the type would use in the conduct of an enterprise with a like character and like aims; by diversifying the investments of the Plan to minimize the risk of large losses, unless under the circumstances it is clearly prudent not to do so; and in accordance with the documents and instruments governing the Plan to the extent that the documents and instruments are consistent with Chapter 802 of the Texas Government Code.
- Acting prudently and in the best interests of Participants in choosing, contracting for, and continuing the services of professional investment managers (and, by extension, mutual funds).
- Requiring investment managers chosen to invest all or a part of the fund to acknowledge in writing their fiduciary responsibilities to the fund.
- Limiting investment managers to the following: a person who is registered under the Investment Advisors Act of 1940, a bank (as defined in that Act), or an insurance company qualified to perform investment services under the laws of more than one state.
- Including in contracts with investment managers all policies, requirements and restrictions, including criteria for determining the quality of investments and for the use of standard rating services, that the Committee adopts for the Plan's investments.
- Contracting for a custodian that is a bank, depository trust company, or brokerage firm to hold assets managed by an investment manager. Any such brokerage firm must meet the requirements of Section 802.205(d)-(g) of the Texas Government Code.
- Monitoring investments made by an investment manager at frequent intervals, with or without the assistance of a professional evaluation service.

### **Policy Objectives**

The purpose of this Investment Policy Statement (IPS) is to establish a clear understanding regarding the Plan's investment objectives and management practices. This Investment Policy Statement will:

1. Establish reasonable expectations, objectives and guidelines for the investment of the assets in the Plan.
2. Create the framework for a well-diversified asset mix that can be expected to generate achievable long-term returns at a level of risk acceptable to the Plan, including:
  - Describing an appropriate risk posture for the investment of Plan Funds;
  - Specifying broad target asset allocation ranges and constraints;
  - Establishing investment guidelines regarding the selection of investment managers, permissible securities and diversification of assets;
  - Specifying the criteria for evaluating the performance of the Plan's Investment Managers.
3. Define the responsibilities of the Committee, the Consultant and the Investment Managers.
4. Encourage effective communication between the Committee, its Consultant and the Investment Managers.

It is the Committee's intent that the investment policies described in this IPS be dynamic. As such, these policies are intended to reflect the Committee's current philosophy and current status regarding the investment of the Plan's Funds. These policies will be reviewed and revised periodically by the Committee to ensure they adequately reflect any changes related to the Plan and capital markets expectations.

#### **Procedures for Implementation**

##### **I. Delineation of Responsibilities**

###### **A. The Guadalupe-Blanco River Authority Board of Directors**

The Guadalupe-Blanco River Authority (GBRA) is the "Employer" and sponsor of the Retirement Plan for Employees of the Guadalupe-Blanco River Authority. GBRA is governed by its Board of Directors, which consists of nine members, each appointed by the Governor of Texas. The responsibilities of the GBRA Board as they relate to the Plan include but are not limited to, appointing members to the Committee, appointing the Plan's Trustee, and approving an Annual Work Plan and Budget which includes funds for contributions to the Plan as well as funds for the engagement of professional services to administer and manage the Plan.

###### **B. The Retirement and Benefit Committee of the Guadalupe-Blanco River Authority**

Responsibility for overall governance of the Plan resides with the Committee, the Plan's governing body. The Committee has the authority to advise the Trustee in writing of its intention to direct the Trustee in the investment of the Trust fund, and once such notice is given, will be responsible for overseeing the management of the investment portfolio of the Plan. Committee members shall discharge their duties solely in the interest of the Plan's participants with care, skill, prudence and diligence. Committee members are expected to exercise their oversight in accordance with the care that a prudent person acting in a like capacity and familiar with such matters would exercise, as outlined above under "Investment-Related Duties of the Committee." Currently, the Committee is comprised of three members of the GBRA Board of Directors and three employee members of the GBRA staff.

The detailed duties of the Committee are as follows:



1. Discharge all of the duties set forth above under Investment-Related Duties of the Committee.
2. Select and oversee the performance of Investment Consultants, Investment Managers, Actuaries, and other professionals. This oversight shall include the ongoing evaluation of all professionals hired by the Committee to assist in managing the investment portfolio as well as the replacement of any professionals which do not meet the Committee's expectations.
2. Periodically review the Investment Policy and, if needed, make changes, after considering the advice and recommendations of the Executive Manager of Finance and Administration, Investment Consultant and any other experts deemed appropriate by the Committee. All policy changes shall be in writing.
3. Periodically review with the Trustee or custodian the operation and effectiveness of the Plan's system of internal controls to safeguard investment assets and provide timely and accurate reports.
4. Periodically meet with the Investment Consultant and others to review investment performance in comparison to the Investment Policy, benchmarks, peer groups, investment objectives, investment restrictions and specific Investment Manager instructions. The Committee will also periodically reevaluate the Target Allocation.
5. Annually review the actuarial report.

C. Executive Manager of Finance and Administration

The Executive Manager of Finance and Administration serves as the Chief Financial Officer of the Guadalupe-Blanco River Authority. This position is the primary conduit for communication with all parties involved with the investment activities of the Plan, including Committee members, Investment Consultant, Investment Managers, Custodians and other professionals.

Responsibilities of the Executive Manager of Finance and Administration as they relate to the Plan include, but are not limited to:

1. Advise on matters requiring Committee approval, such as Investment Manager changes or changes in the Target Allocation based on the advice of the Investment Consultant.
2. Assist the Committee in the negotiation of written contracts with the Investment Consultant, Investment Managers, Custodians, Actuary and other professionals setting forth the terms and conditions of their contractual relationship with the Plan and/or GBRA. These contracts will meet all legal requirements set forth under Investment-Related Duties of the Committee, above, and will include, but will not be limited to, the requirement to comply with the Investment Policy (and its investment restrictions), fees, and other applicable terms and conditions.
3. On behalf of the Committee, provide specific instructions to the Investment Consultant, Investment Managers and Custodians regarding withdrawals, distributions, transfers and other transactions required in the ordinary course of business for the Plan.
4. Assist the Committee in its duty to monitor the performance of the Investment Consultant and Custodians for compliance with the Investment Policy and with contractual terms.



5. Interact with the Custodian, Investment Consultant, and other parties to regularly provide accurate and timely reports on investment performance and compliance monitoring to the Committee. Provide special reports to the Committee as requested by the Committee members.
6. On behalf of the Committee, authorize payment of all Investment Manager, Custodian, Actuary and Investment Consultant fees.

**D. Duties of the Investment Consultant**

The Investment Consultant shall be a Registered Investment Advisor with demonstrated expertise in investing and investment management and will acknowledge that it is a fiduciary with respect to the Plan. With respect to each Investment Manager, the Investment Consultant will regularly monitor investment performance, as well as compliance with the Investment Policy, changes in management or ownership structure, and adverse publicity. The Investment Consultant is expected to keep abreast of changing economic trends and issues and provide timely advice to the Committee regarding investment allocation, Investment Manager selection and other matters of importance.

Additional responsibilities of the Investment Consultant include:

1. Provide timely and regular investment reports showing the investment performance of the entire investment portfolio and each individual Investment Manager. Regular reports will also include an evaluation of compliance with the Investment Policy. Reports will be in a presentation and format acceptable to the Committee.
2. Provide recommended changes to the Investment Policy, including suggested changes to asset allocation ranges and targets, investment objectives and similar matters.
3. Conduct initial screening in any new Investment Manager search for the consideration and evaluation by the Committee. Assist the Committee in the final selection of Investment Managers, and in the decisions to retain or terminate the services of Investment Managers.
4. Assist in the negotiation of contractual terms and conditions for each Investment Manager, Custodians or other professionals utilized by the Plan.
5. Regularly meet with the Committee and the Executive Manager of Finance and Administration to review reports on investment performance, compliance, suggested changes to the Investment Policy, retaining or terminating specific managers, and other matters.
6. Provide as requested, information to the Committee necessary for the preparation of accurate and timely financial statements.
7. Perform special reports or studies as requested.

**E. Investment Managers**

Investment Managers must meet the requirements set forth under Investment-Related Duties of the Committee, above. Their responsibilities include the following:

1. Make all investment decisions and exercise other discretionary authority over the assets allocated to each individual Investment Manager in accordance with the Investment Policy, the written contract with the Plan and other requirements and restrictions adopted by the Plan.
2. Provide written documentation of portfolio activity, valuations, performance data, etc., as requested by the Executive Manager of Finance and Administration and/or the Investment Consultant.
3. Cooperate effectively with other professionals involved in the Plan's investment portfolio such as Custodians and Commission Recapture Firms.
4. Attend meetings with representatives of the Plan, as requested.
5. Act solely in the interest of the Plan.

**F. Custodians**

The Custodian shall be a bank, depository trust company, or brokerage firm; if a brokerage firm, the Custodian must meet the requirements of Section 802.205(d)-(g) of the Texas Government Code. The Custodian shall act as the receiving and disbursing agent for the investment portfolio and shall hold all investments. Receipts can occur from funds deposited by Guadalupe-Blanco River Authority. Receipts also result from investing activity such as proceeds from investment sales, dividends, interest and principal payments from securities owned by the Plan. Disbursements can arise from payments to Plan members or from Committee instructions such as to transfer funds between Investment Managers as a result of portfolio rebalancing, or from the sale of investments.

Other specific responsibilities of the Custodian include:

1. Provide monthly reports on a timely basis detailing investment holdings and account transactions.
2. Establish and maintain directed account relationships with each Investment Manager.
3. Provide all usual and customary custodial functions including security safekeeping, collection of income, settlement of trades, collection of proceeds of maturing securities, distribution of income and daily investment of cash.
4. Prepare additional reports, as requested.

**G. Actuary**

The actuary shall provide the Committee with the appropriate information relating to the financial needs of the Plan, to include an annual report, funding options, and recommended assumptions. The actuary shall assist the Committee in its compliance with State law filing obligations with respect to the Plan.

## II. Investment Objectives

The Plan has a single investment objective: achieve the actuarial assumed rate of return (currently 8% per annum) over a reasonable period of time while maintaining sufficient liquidity to timely meet all payment obligations to Participants.

- A. The Plan's Trust Fund consists of unrestricted cash and investments. As discussed in the purpose section at the beginning of this policy, these funds are intended to assure the long-term financial viability of the Plan, and should be invested with a long-term perspective. The overall objective of the Plan's investment pool is to achieve the actuarial assumed rate of return. A 5 to 7-year period is appropriate in measuring progress toward achieving this objective.
- B. The returns (net of manager fees and other related fees and expenses) on the asset classes within the Plan's investment pool should exceed the return on a composite of non-managed market indices weighted in proportion to the actual structure of the Plan portfolio. In brief, the investment portfolio should benefit from active management.

## III. Portfolio Structure and Asset Allocation

The structure and asset allocation of each Investment Manager's investment account within the Trust Fund must be periodically revised to result in a high probability of achieving the investment objectives. The structure and asset allocation of each such account must be updated and revised as the financial needs of the Plan and/or the outlook for the capital markets change.

### A. Purpose

The ranges for the asset allocation are designed to allow flexibility of the Trust Fund as a whole over a market cycle. The ranges are given so that adjustments can be made for a variety of reasons including changes in the cash needs of the Plan and/or changes in the capital markets.

### B. Asset Class Exposure

Following are the minimum and maximum authorized investment exposures to the various asset classes in which Plan may invest as categorized by management style:

<u>Asset Class</u>	<u>Exposure</u>	<u>Plan</u>
Domestic Equities	Maximum	60%
	Minimum	25%
International Equities	Maximum	25%
	Minimum	0%
Alternatives	Maximum	25%
	Minimum	0%

Real Estate	Maximum	10%
	Minimum	0%
Global Fixed Income	Maximum	50%
	Minimum	20%
Short-Term Investments	Maximum	25%
	Minimum	0%

#### C. Target Allocation

Each quarter, the Executive Manager of Finance and Administration and the Investment Consultant will review the actual target allocations for each Investment Manager's account with the Committee and will make any recommended changes to the Committee. The target allocation must be within the minimum and maximum asset class exposure and must conform to all other provisions of this Investment Policy. Any approved changes to the target allocation must be documented in the official Committee minutes. The most recent approved target allocations are included in Schedule A of this Investment Policy Statement.

### IV. Investment Manager General Guidelines

#### A. Guidelines applicable to all Investment Managers:

1. Securities should be readily marketable. No investment should be made in non-marketable securities without prior permission from the Committee.
2. Any Investment Manager not fully invested should invest excess cash in short-term interest bearing investments with minimal risk or price fluctuation.
3. Each separately managed account Investment Manager shall agree to adhere to a separate agreement outlining performance standards and permissible investment guidelines that are specific to its investment strategy.
4. The policies and controls for derivative management are intended to ensure proper use of derivatives by separate account managers. It should be noted, however, that derivative transactions are not considered in isolation but as part of an overall investment process. Derivative instruments refer to Exchange Traded Futures and options, over the counter derivatives, such as currency forwards, swaps, and options and other structured securities. Specific uses are as follows:
  - a. Derivative use is only permissible by account documents.
  - b. Hedging to protect an asset in a portfolio against a fluctuation in market values, including foreign currency hedging.
  - c. Reducing volatility.
  - d. Efficient portfolio management, such as:
    1. Increasing or decreasing asset exposures within the parameters set in the investment strategy to take advantage of market opportunities.
    2. Lowering the transaction cost of achieving required exposure.

3. Managing the impact on portfolio valuations of market movements caused by significant cash inflows and outflows (mostly by eliminating cash drag).

5. Restrictions on the use of derivatives

- a. Unless specifically authorized in writing, leverage (Gearing) may not be used. All derivative positions will have appropriate and sufficient cover.
- b. Counterparty risk is controlled as follows:
  1. Only derivatives trading on recognized exchanges approved by the Commodities and Futures Trading Commission (CFTC) is permitted.
  2. OTC Counterparties are approved after attaining "A" or better by credit rating agencies. Counterparty exposure limits may exist per specific written requirements.
  3. OTC derivative trades are executed with Counterparties based on approved ISDA Master Agreements.
  4. The manager will monitor the Counterparty credit exposures within its portfolio.

B. Domestic Equity Holdings

1. The maximum weighting (at time of purchase) in any one company of the Investment Manager's portfolio holdings should not exceed 8% or 5% more than the index weight, whichever is greater, unless specific approval is given by the Committee (as documented in the Investment Manager's written contract).
2. Domestic equity managers must receive written permission from the Committee to engage in option or futures activity.

C. International Equity Holdings

1. The maximum weighting (at time of purchase) in any one company of the Investment Manager's portfolio holdings should not exceed 7%.
2. Currency hedging, foreign exchange contracts and similar strategies are permitted as part of a defensive strategy to protect the portfolio assets and enhance return.

D. Global Fixed Income (Including High Yield)

1. The fixed income portfolio may include both domestic and/or international fixed income securities.
2. Unless authorized by the Committee in advance and in writing, the minimum quality rating on all issues in which an Investment Manager may invest in is BBB-. For an issue that is not rated, the security must be of "equivalent" quality to a BBB- rating or above in the opinion of the Investment Manager, or the security must be a government bond or a bond of a supranational authority which does not have a recognized credit rating.
3. For investment grade fixed income managers, the weighted average credit quality of the portfolio must be at least A-, unless the manager is given written permission to invest in securities with a lower credit quality.
4. The maximum holding (cost basis) in any one security in the Investment Manager's portfolio should not exceed 5% excluding AAA rated sovereign debt.

5. To manage currency risk, no Investment Manager should have exposure to any one currency exceeding the following:

<u>Currency</u>	<u>Maximum Exposure</u>
Euro	70%
Japanese Yen	50%
British Sterling	40%
Other (excluding U.S. Dollar)	25%

6. Currency hedging, foreign exchange contracts and similar strategies are permitted as part of a strategy to protect the portfolio assets and enhance return.

**E. Alternative Investments**

Alternative investments include convertible securities, hedge funds, private equity, and managed futures. These alternative investments should add diversification and reduce volatility for the overall portfolio.

**F. Real Estate**

1. Diversification should be made between property type, and economic and geographic location. Real estate investments shall be passive (e.g., through REITs) rather than direct ownership of property.
2. Currency hedging, foreign exchange contracts and similar strategies are permitted as part of a defensive strategy to protect the portfolio assets and enhance return.
3. Investments in timber and infrastructure will be included in the real estate allocation.

**G. Short-Term Investments**

The maximum holding (cost basis) in any one security in the Investment Manager's portfolio shall not exceed 10%. This is not applicable to U.S. Government and Agency issues and approved sovereign investments.

**V. Investment Manager Relations**

**A. Communication Requirements**

In addition to the achievement of performance objectives and adherence to investment guidelines, the Committee expects to receive a high level of communication and service from each Investment Manager. Specific requirements include:

1. Each Investment Manager must enter into a written contract with the Committee on behalf of the Plan. Each Investment Manager's contract will, among other things, specifically define the Investment Manager's investment goals and the benchmark against which the Investment Manager will be evaluated. Each Investment Manager must specifically agree to manage the investment portfolio in accordance with this Investment Policy and the contract. Each Investment Manager will serve as a fiduciary



to the Plan and be responsible for prudent and careful selection of securities within their investment mandates. It is understood that certain commingled funds may be excluded from the above provisions.

2. Each Investment Manager shall provide a quarterly report to the Executive Manager of Finance and Administration and the Investment Consultant containing at least the following:
  - a. Portfolio composition and structure.
  - b. Individual security holdings.
  - c. Investment performance along with a brief discussion of the key factors that contributed to investment results.
  - d. A brief review of any changes in strategy during the quarter, current investment outlook, and expected changes in portfolio strategy.
3. Upon request, each Investment Manager shall supply:
  - a. Documentation in support of any purchase or sell decision.
  - b. Statements of any fiduciary, liability or bonding insurance coverage.
4. The Executive Manager of Finance and Administration and the Investment Consultant shall be notified promptly of any of the following:
  - a. A significant change in investment strategy and portfolio structure.
  - b. A material change in the ownership, personnel, financial condition or investment approach of the organization.
  - c. Any changes in the regulatory environment that would affect the investment or the organization's role in their management.
  - d. Any litigation or violation of securities regulations in which the Investment Manager is involved.
  - e. Additionally, each Investment Manager shall provide the Committee a copy of its Form ADV as filed with the Securities Exchange Commission.

**B. Periodic Meetings**

As requested, Investment Managers will be expected to periodically meet with the Committee to review investment performance, compliance with investment policies, evaluation of the financial markets and other matters.

**C. Proxy Voting**

All proxy votes shall be exercised by the Investment Manager in the best interest of the Plan. The Investment Manager must be able to document all proxy voting in written form as requested.

**D. Commission Recapture**

Investment Managers will accept instructions from the Committee regarding the recapture of commissions to pay for services deemed valuable to the attainment of the investment accounts' objectives. Execution is of prime importance and the Investment Manager should perform trades that are always in the best interest of the Plan.

5/18/11  
\_\_\_\_\_  
Date

\_\_\_\_\_  
Chair, Guadalupe-Blando River Authority Retirement and Benefit Committee



**SCHEDULE A – Target Allocations**  
**July 2011**

<u>Asset Class</u>	<u>Exposure</u>	<u>Range Min-Max</u>	<u>Plan Targets</u>
Domestic Equities	Target	25%-60%	35%
International Equities	Target	0%-25%	10%
Alternatives	Target	0%-25%	20%
Real Estate	Target	0%-10%	0%
Global Fixed Income	Target	20%-50%	35%
Short-Term Investments	Target	0%-25%	0%

# Investment Policy Statement

**Guadalupe-Blanco River Authority  
Employee Defined Contribution Retirement Plans**

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***Date: May 18, 2011***

**I. Plan Summary Information**

<b>Plan Name:</b>	Guadalupe-Blanco River Authority Employee Defined Contribution Retirement Plans	
<b>Type of Plan:</b>	401(a)	457(b)
<b>Plan Effective Date:</b>	1-1-2011	1-1-1999
<b>Plan Year-End:</b>	All Plans 12-31-XXXX	
<b>Plan Number:</b>	001	002

**II. Statement of Purpose**

This Investment Policy Statement has been adopted by the GBRA Retirement and Benefit Committee as the Governing Body and Plan Administrator in order to provide guidelines for the investment and management of funds held in trust for the benefit of participants in and beneficiaries ("Participants") of the Guadalupe-Blanco River Authority Employee Defined Contribution Retirement Plans ("the Plans"). The Committee has adopted these statements after review and input by legal counsel and its retained Investment Consultant.

Because the fiduciary duties of the Committee toward each of the Plans differ, for purposes of this Investment Policy, the Committee shall consider each Plan separately, even though the ultimate result may be the selection of the same funds for each Plan.

**III. Investment-Related Duties of the Committee**

GBRA's Employees' Defined Contribution Plan is a "public retirement system" as defined in and made subject to Title 8 of the Texas Government Code. As such, it is subject to certain investment-related requirements of Title 8, including the following responsibilities of the Committee:

- Developing and maintaining a written investment policy, making it available for public view, and filing a copy with the Texas Pension Review Board within 90 days of its adoption.
- Discharging its investment-related duties solely in the interest of the Participants and for the exclusive purposes of providing benefits to Participants and defraying reasonable expenses of administering the Plan, with the care, skill, prudence, and diligence under the prevailing circumstances that a prudent person acting in a like capacity and familiar with matters of the type would use in the conduct of an enterprise with a like character and like aims; by diversifying the investments of the Plan to minimize the risk of large losses, unless under the circumstances it is clearly prudent not to do so; and in accordance with the documents and instruments governing the Plan to the extent that the documents and instruments are consistent with Chapter 802 of the Texas Government Code.
- Acting prudently and in the best interests of Participants in choosing, contracting for, and continuing the services of professional investment managers (and, by extension, mutual funds).

GBRA's 457 Deferred Compensation Plan is a "457 plan" as defined in Chapter 609 of the Texas Government Code. As such, it is subject to certain investment-related provisions of Chapter 609, including the following:

- A "qualified vendor" is one which meets the requirements of Chapter 609 and of the Committee, as plan administrator.
- A "qualified investment product" is a life insurance policy, fixed or variable rate annuity, mutual fund, CD, money market account, passbook savings account, stock, bond, obligation, or other investment product not prohibited by Code Section 457 offered by a qualified vendor and approved in writing by the Committee pursuant to a contract with the qualified vendor.
- All employee deferrals, investment income, and qualified investment products of the Plan must be held in trust (including custodial accounts and contracts under Code section 457) for the exclusive benefit of Participants.
- If the above rules are observed, GBRA, its Board, the Committee, and GBRA employees assisting the Committee are not responsible for losses resulting from investment with a qualified vendor. Rather, Participants are responsible for monitoring the financial status of the qualified vendor in whose funds the Participant is invested, market conditions, and the amount of the Participant's deferrals and investment income that is invested in the qualified vendor's product.
- Notwithstanding the rule above, the Committee may notify a Participant of a qualified vendor's significant financial difficulties or that the amount the Participant has invested with the vendor exceeds any insured or guaranteed level without incurring any liability for losses resulting from a failure to so notify any Participant.
- The Committee may transfer all amounts from the contract of a vendor which ceases to be qualified to a general fund of the Plan, and no fee or penalty may be imposed because of the transfer. Immediately after the transfer, the Committee must notify each affected Participant notice of the transfer, of the ineligibility of that vendor to receive new deferrals, and of the Participant's duty to designate a new qualified vendor for the transferred funds.

#### **IV. Plan Purpose and Objectives**

GBRA established the Plans to provide employees with a vehicle to accumulate assets on a tax deferred basis. The Plans will be operated in accordance with all applicable state and federal laws and regulations. The Plans will also be operated as "Participant Self-Directed Plans" in which the Plan Committee selects a group of funds and Participants decide in which of these funds they wish to invest.

##### **A. Investment Philosophy**

1. In order to provide Participants with flexibility over their investments, the Committee shall provide Participants in the Plans with the following:
  - The opportunity to select from several investment funds.
  - Access to historical performance information to facilitate Participant judgments regarding which selected investment funds are appropriate for their individual circumstances.
  - Access to periodic information as to investment performance, fund descriptions and educational material and how additional information or materials can be obtained.
2. It is the intent of the Committee to provide Participants a range of investment categories under the Plans that will enable Participants to invest according to varying risk tolerance, savings time horizon, and financial goals.

##### **B. Investment Strategy**

Among the factors considered in the development of this investment policy are: (i) the Plans' overall primary investment goal; (ii) the Plans' overall investment risk tolerance; and (iii) the Plans' overall investment time horizon.

The Committee reserves the right to revise the investment policy of the Plans as required by changing legal, economic, or investment conditions in order to meet its fiduciary responsibilities.

#### 1. Primary Investment Goal

The goal of the investment policy is to earn a competitive total return in each investment category with comparable risk appropriate for each category. This objective will be achieved through offering a diverse group of investment categories.

#### 2. Investment Risk Tolerance

Risk is defined in terms of portfolio variability. The Committee will evaluate the aggregate risk of all investment funds offered to Participants from time to time to be certain that as a group of funds, it falls within reasonable risk parameters.

#### 3. Investment Time Horizon

In making investment decisions and in evaluating investment performance, the Committee shall focus on a long-term investment time horizon of three to seven years or a complete market cycle.

#### C. Investment Objectives

- Select investment funds that offer competitive returns based on risk level;
- Control overall plan costs;
- Provide participants with the opportunity to defer taxable income.

#### V. *Investment Categories*

The investment categories and funds to be offered under each Plan will be determined upon input, review and recommendation from the Committee and Investment Consultant, and upon consideration of the capabilities of the Plans' respective Record Keepers.

##### A. Fund Categories—Investment opportunities will be provided in the following categories:

- **Stable Value/Money Market Funds:** Reasonably stable return with reduced risk to principal by investing in traditional investment contracts (GICs), short-term securities, and money market instruments.
- **Bond Fund:** Current income through investing in fixed income securities such as Treasury bonds, corporate bonds, mortgage-backed securities and foreign bonds.
- **Large Cap Growth Fund:** Long-term capital growth through investments in stocks of large companies. Stocks are selected as a result of the fund manager's focus on companies with attractive growth investment characteristics.
- **Large Cap Value Fund:** Long-term capital growth through investments in stocks of large companies. Stocks are selected as a result of the fund manager's focus on companies with attractive value investment characteristics.
- **S & P 500 Equity Index Fund:** A fund that replicates the Standard & Poor's 500 Index, which represents a broad-based measure of the U.S. stock market reflecting the performance of 500 of the largest U.S. traded companies selected by the S&P Index Committee. The S & P 500 is a market value-weighted index, in that each stock's weight in the index is proportionate to its market value.



- **Small Cap Growth Fund:** Long-term capital growth through investments in stocks of small companies. Stocks are selected as a result of the fund manager's focus on companies with attractive growth investment characteristics.
  - **Small Cap Value Fund:** Long-term capital growth through investments in stocks of small companies. Stocks are selected as a result of the fund manager's focus on companies with attractive value investment characteristics.
  - **International Fund:** Long-term capital growth through investments in foreign stocks. Stocks are selected by the fund manager after consideration of company investment characteristics and each country's economic strength.
  - **Target Retirement Funds (Lifecycle Strategy):** A series of funds that are designed to help Participants capitalize on growth opportunities. As Participants approach retirement, the fund automatically adjusts its holdings to reduce investment risk and provide greater stability. The Committee will take into consideration the fact that target funds may vary significantly in their approach to this strategy.
  - **Balanced/Asset Allocation Funds:** A series of growth funds including conservative, traditional, long-term, and all-equity, with varying degrees of current income and risk.
- B. **Participant Fund Selection**--In addition to the funds offered by the Committee, this Investment Policy allows Participants to invest in other, individual mutual funds through a brokerage window if such an option is provided for by the Plans' Record Keeper.
- C. **Default Fund**—The Committee shall, as required by Section 8.9.b of the Employees' Defined Contribution Plan, designate a default fund into which any monies not directed by Participants shall be invested under that Plan.

## **VI. Investment Performance Evaluation**

### **A. Investment Performance Evaluation**

The Committee will periodically review and analyze the investment categories and funds offered under the Plans. The Investment Consultant will prepare and present performance reporting and compliance information to the Committee to assist this review process. Investment performance will be evaluated on a total rate of return basis (capital appreciation plus interest/dividends), net of fees. The Committee will evaluate each investment fund in terms of the performance compared to relevant market indices and peer groups. Further, the investment funds will be evaluated relative to other available funds. In addition, time-weighted rates of return will be used in order to measure performance without regard to contributions and distributions. Other important factors the Committee will closely consider in evaluating investment performance include:

1. Continuity in the management of the investment fund.
2. Consistency of the primary investment approach and methodology.
3. Fees and costs associated with each investment fund.

The Committee shall formally meet at least one time per year to review investment performance and other pertinent factors. The Plans' overall performance will be evaluated on the basis of meeting or exceeding the stated investment objectives outlined earlier in this policy.

In addition to the Committee, the Investment Consultant will review and analyze the investment categories and the funds offered under the Plans. A review of fund performance will be presented by the Investment Consultant to the Committee on a quarterly basis.

B. Investment Fund Termination

The Committee may terminate a selected investment fund or group of funds when it becomes concerned that the investment performance goals are not being met. If the Committee terminates an investment fund it will select an alternate fund to replace the one being terminated, if advisable. If an alternate investment fund is selected, a plan to "map" the assets from the investment fund being terminated to the new investment fund will be communicated to Participants in advance of the transfers. In the period leading up to the transfer, Participants will be free to transfer their balances to the remaining Plan categories if they so desire.

This Investment Policy Statement shall remain in effect until revised or amended by the Committee, and shall be reviewed by the Committee no less frequently than bi-annually.

5/18/11  
Date

  
Chair - Guadalupe-Blanco River Authority Retirement and Benefit Committee

**APPENDIX 3**  
Performance Report



# **Guadalupe-Blanco River Authority Defined Benefit Plan**

Investment Performance Analysis

Period Ended

September 30, 2019

We have compiled the accompanying summary of the market value, performance statistics and performance results of Guadalupe-Blanco River Authority Defined Benefit Plan as of September 30, 2019. Our responsibility is to evaluate the performance results of the investment advisors or unregistered money managers through comparisons with market indices and other universe performance data deemed appropriate and to make observations and recommendations thereon.

We performed time-weighted rates of return and internal rate of return calculations in accordance with standards recommended by the CFA Institute. The calculations performed are based on information provided to us by the custodians, administrators, investment advisors, and/or unregistered money managers. Our approach is to analyze transactions reflected in the custodian and/or administrator statements as well as review the audited market values of the portfolio. This provides us with a reasonable basis, not absolute, that the investment information presented is free from a significant misstatement. We believe that our method of evaluating and measuring performance results contained herein provides us a reasonable basis for our observations and recommendations.

The investment information referred to above presents the market value as of September 30, 2019 and the performance results of the investment advisors or unregistered money managers for the calendar quarter. Based on our procedures, nothing came to our attention that would cause us to believe the information is significantly misstated; however, we do not warrant the complete accuracy of the information.

GAVION does not provide legal or tax advice to clients. All clients with tax considerations, including the effect of UBTI resulting from alternative investment strategies, are strongly urged to consult their tax advisers regarding such issues. A copy of GAVION's current Form ADV Part II may be obtained by contacting the firm's compliance department at (901)-761-8080. Certain of the information contained herein: (1) is proprietary to third party content providers; (2) may not be copied or distributed; and (3) is not warranted to be accurate, complete or timely. Third party content providers are not responsible for any damages or losses arising from any use of this information. We urge you to compare the GAVION reported performance information presented in this report against the account statements you receive from your custodian or other third party statement providers.

Past performance is no guarantee of future results.

GAVION, LLC

## **CONTENTS**

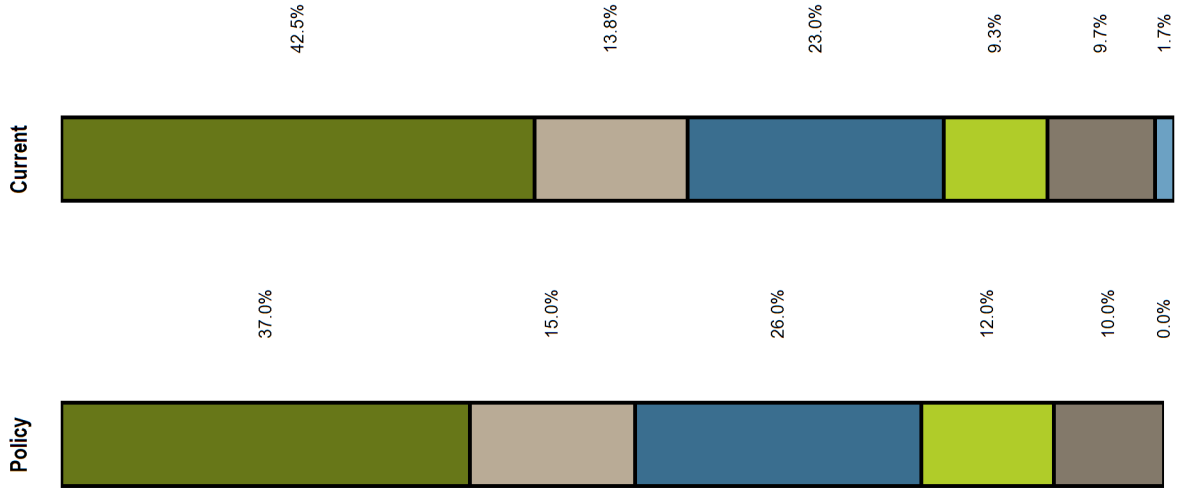
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<b>1</b>	<b>Performance Summary</b>
<b>5</b>	<b>Wells Fargo Advantage Growth Fund Instl</b>
<b>7</b>	<b>Diamond Hill Capital Management</b>
<b>9</b>	<b>Sustainable Insight Capital Management</b>
<b>11</b>	<b>Eastern Shore Capital Management</b>
<b>13</b>	<b>Oppenheimer International Growth Fund</b>
<b>15</b>	<b>LMCG Emerging Markets Equity</b>
<b>17</b>	<b>Brandywine Global Opportunistic Fixed Income Fund</b>
<b>19</b>	<b>Johnson Institutional Core Bond Fund</b>
<b>21</b>	<b>Aberdeen Emerging Markets Debt Fund</b>
<b>24</b>	<b>Courage Credit Opportunities III</b>
<b>26</b>	<b>Ironwood Institutional Multi-Strategy Fund LLC</b>
<b>28</b>	<b>BTG Pactual Global Timberland Resources Fund (US), LLC</b>
<b>30</b>	<b>TerraCap Partners III</b>
<b>32</b>	<b>TerraCap Partners IV</b>
<b>35</b>	<b>Expense Summary</b>
<b>36</b>	<b>Notes</b>

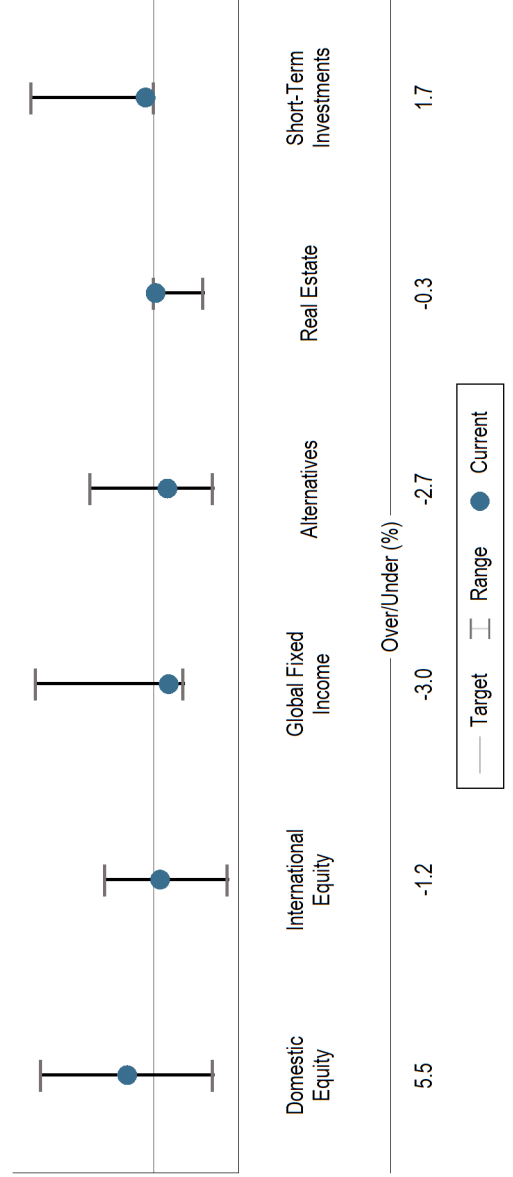
# Asset Allocation vs. Target Policy

## Total Portfolio

Asset Allocation vs. Target As Of September 30, 2019									
	Policy	Range	Current	%	Difference*	%			
Domestic Equity	25.0% - 60.0%		\$11,442,240	37.0%	\$1,693,688	5.5%			
International Equity	0.0% - 25.0%		\$4,638,746	15.0%	-\$379,276	-1.2%			
Global Fixed Income	20.0% - 50.0%		\$8,040,493	26.0%	-\$919,370	-3.0%			
Alternatives	0.0% - 25.0%		\$3,710,997	12.0%	-\$840,417	-2.7%			
Real Estate	0.0% - 10.0%		\$2,870,580	9.3%	-\$95,686	-0.3%			
Short-Term Investments	0.0% - 25.0%		\$2,996,811	9.7%					
			\$541,060	1.7%	\$541,060	1.7%			
<b>Total</b>			<b>\$30,924,973</b>	<b>100.0%</b>	<b>\$30,924,973</b>	<b>100.0%</b>			



Actual vs. Target



## Performance Summary

## Total Portfolio

Ending September 30, 2019

	Market Value	% of Portfolio	QTD	YTD	1 Yr	3 Yrs	5 Yrs	7 Yrs	Inception	Inception Date
<b>Total Portfolio</b>	<b>30,924,973</b>	<b>100.0</b>	<b>-0.4</b>	<b>12.4</b>	<b>2.2</b>	<b>7.3</b>	<b>4.9</b>	<b>5.9</b>	<b>4.1</b>	<b>Dec-99</b>
<i>Policy Index</i>			0.3	11.4	3.2	5.9	4.3	5.1	4.3	Dec-99
<b>Equities</b>	<b>17,395,398</b>	<b>56.3</b>	<b>-0.9</b>	<b>18.9</b>	<b>0.5</b>	<b>9.9</b>	<b>6.6</b>	<b>8.6</b>	<b>3.8</b>	<b>Dec-99</b>
<i>MSCI ACWI</i>			0.0	16.2	1.4	9.7	6.7	8.8	4.1	Dec-99
<b>Domestic Equity</b>	<b>13,135,929</b>	<b>42.5</b>	<b>0.0</b>	<b>21.7</b>	<b>1.8</b>	<b>12.5</b>	<b>7.7</b>	<b>9.8</b>	<b>--</b>	<b>Dec-99</b>
<i>S&amp;P 500</i>			1.7	20.6	4.3	13.4	10.8	13.3	5.7	Dec-99
Wells Fargo Advantage Growth Fund Instl		16.2	-1.4	26.8	4.6	18.2	13.1	13.3	14.3	Jan-12
<i>Russell 3000 Growth</i>	5,001,741		1.1	22.7	2.7	16.4	13.1	14.8	15.5	Jan-12
Eastern Shore Small Cap	2,157,319	7.0	-2.0	16.6	-6.3	--	--	--	-1.4	May-18
<i>Russell 2000</i>			-2.4	14.2	-8.9	8.2	8.2	10.4	0.6	May-18
Diamond Hill Capital Management	3,132,122	10.1	1.1	22.4	5.8	--	--	--	10.3	Jun-18
<i>Russell 1000 Value</i>			1.4	17.8	4.0	9.4	7.8	11.3	7.6	Jun-18
Sustainable Insight Capital	2,844,746	9.2	3.0	16.5	-0.4	--	--	--	2.6	Jun-18
<i>Russell 1000 Value</i>			1.4	17.8	4.0	9.4	7.8	11.3	7.6	Jun-18
<b>International Equity</b>	<b>4,259,470</b>	<b>13.8</b>	<b>-3.5</b>	<b>11.1</b>	<b>-3.5</b>	<b>3.5</b>	<b>4.1</b>	<b>5.3</b>	<b>--</b>	<b>Dec-99</b>
Invesco Oppenheimer International Growth	3,125,812	10.1	-2.9	14.7	-2.1	3.6	4.5	--	4.5	Oct-14
<i>MSCI ACWI ex USA</i>			-1.8	11.6	-1.2	6.3	2.9	5.0	2.9	Oct-14
LMCG Emerging Markets Equity	1,133,657	3.7	-5.2	2.3	-7.2	3.3	--	--	3.3	Nov-15
<i>MSCI Emerging Markets</i>			-4.2	5.9	-2.0	6.0	2.3	2.4	6.9	Nov-15
<b>Fixed Income</b>	<b>7,121,123</b>	<b>23.0</b>	<b>-0.7</b>	<b>5.9</b>	<b>3.5</b>	<b>2.8</b>	<b>1.7</b>	<b>1.5</b>	<b>4.5</b>	<b>Dec-99</b>
<i>BBgBarc Global Aggregate TR</i>			0.7	6.3	7.6	1.6	2.0	1.2	4.5	Dec-99
Brandywine Global Opportunistic Fixed Income Fund	3,369,277	10.9	-1.7	4.9	3.6	1.7	1.6	1.9	2.6	Feb-12
<i>FTSE WGBI TR</i>			0.8	6.3	8.1	1.2	1.8	0.6	0.8	Feb-12
Johnson Institutional Core Bond Fund	1,103,570	3.6	2.3	9.2	10.7	3.3	--	--	3.2	Aug-16
<i>BBgBarc US Aggregate TR</i>			2.3	8.5	10.3	2.9	3.4	2.7	2.7	Aug-16
Aberdeen Emerging Markets Debt Fund	2,039,250	6.6	1.0	12.5	10.7	4.0	0.9	-0.5	0.1	Apr-12
<i>JPM EMBI Global Diversified</i>			1.5	13.0	11.6	4.6	5.7	4.8	5.8	Apr-12
Courage Credit Opportunities III	609,027	2.0								
<b>Alternatives</b>	<b>2,870,580</b>	<b>9.3</b>	<b>0.6</b>	<b>4.9</b>	<b>2.3</b>	<b>5.2</b>	<b>3.2</b>	<b>4.3</b>	<b>3.8</b>	<b>Mar-12</b>
<i>Ironwood Institutional Multi-Strategy Fund LLC</i>			0.6	4.9	2.3	5.2	3.2	5.1	5.3	Mar-12
<i>HFRI Fund of Funds Composite Index</i>			-1.0	5.1	-0.1	3.1	1.9	3.2	2.9	Mar-12
<b>Real Estate</b>	<b>2,996,811</b>	<b>9.7</b>	<b>1.9</b>	<b>5.8</b>	<b>11.7</b>	<b>11.0</b>	<b>6.6</b>	<b>7.4</b>	<b>7.2</b>	<b>Aug-12</b>
BTG Pactual Global Timberland Resources Fund (US), LLC	1,061,555	3.4	1.7	8.5	10.9	6.2	3.7	5.3	5.2	Aug-12
<i>NCREIF Timberland Index</i>			0.2	1.3	2.1	3.1	4.4	6.1	6.0	Aug-12
TerraCap Partners III	827,011	2.7								
TerraCap Partners IV	1,108,245	3.6								
<b>Short-Term Investments</b>	<b>541,060</b>	<b>1.7</b>								

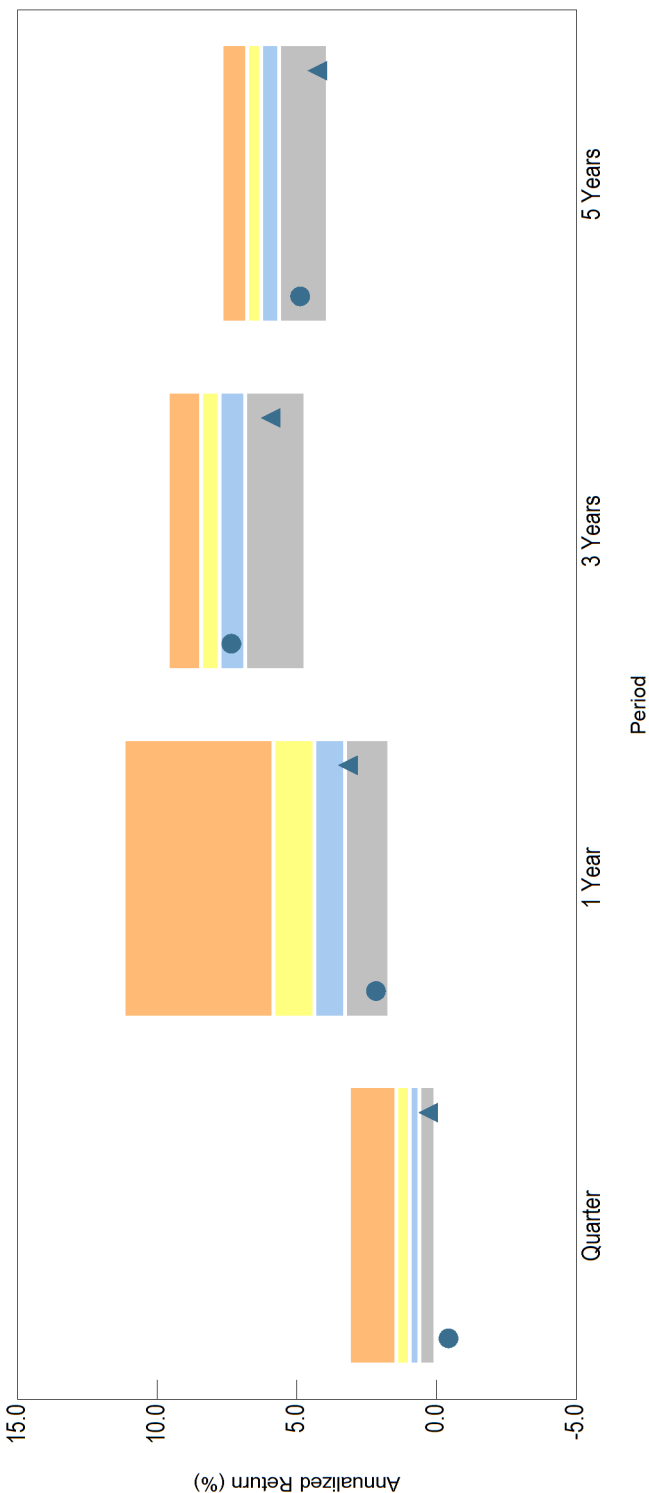
Since Inception IRR for BTG Pactual Global Timberland Resources Fund (US), LLC: 4.91% as of 9/30/2019

Since Inception IRR for TerraCap Partners III: 11.25% as of 9/30/2019

Since Inception IRR for Courage Capital Opportunities III: -4.1% as of 9/30/2019

Policy Index is comprised of 35% Russell 3000, 10% MSCI EAFE, 10% HFRI Fund of Funds Composite, 35% Barclays Global Aggregate, and 10% of the DJ UBS Commodities Index. Prior to 3/12/2012, it was a 60/40 blend of S&amp;P500 and the bond market.

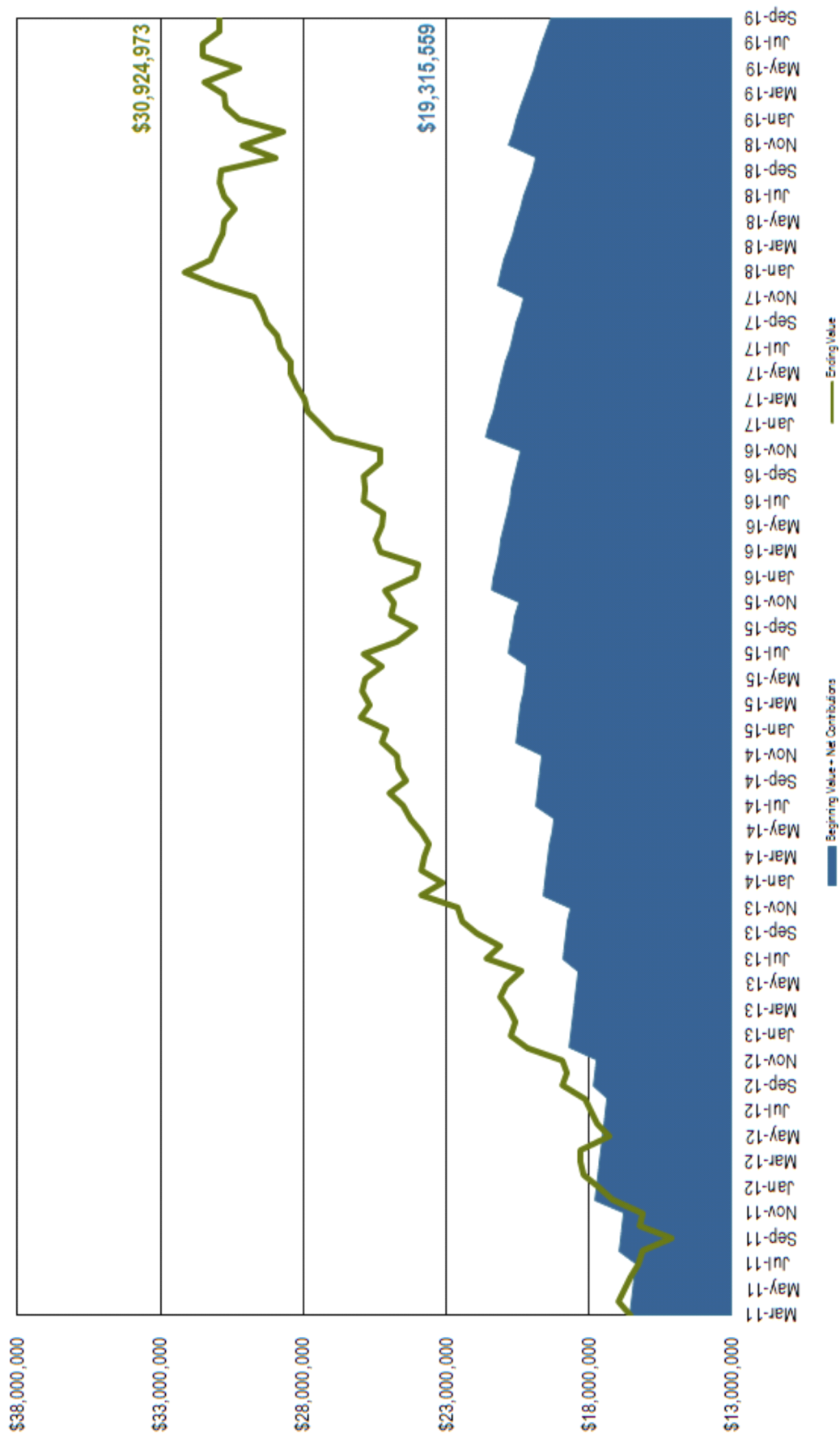
InvMetrics All DB < \$50mm Net Return Comparison  
Ending September 30, 2019



Return (Rank)	Quarter	1 Year	3 Years	5 Years
5th Percentile	3.1	11.2	9.6	7.7
25th Percentile	1.5	5.8	8.4	6.8
Median	1.0	4.4	7.8	6.3
75th Percentile	0.6	3.3	6.9	5.6
95th Percentile	0.1	1.7	4.7	3.9
# of Portfolios	648	635	596	518
Total Portfolio	-0.4 (99)	2.2 (91)	7.3 (63)	4.9 (88)
Policy Index	0.3 (91)	3.2 (78)	5.9 (89)	4.3 (94)

Growth of Assets

Ending September 30, 2019



CBIZ IAS, LLC

## Wells Fargo Advantage Growth Fund Instl

September 30, 2019

Under normal circumstances, the fund invests at least 80% of the Fund's total assets in equity securities and up to 25% of the Fund's total assets in equity securities of foreign issuers through ADRs and similar investments. The investment process is centered around finding companies with under-appreciated prospects for robust and sustainable growth in earnings and revenue. To find that growth, Wells Fargo uses bottom-up research, emphasizing companies whose management teams have a history of successfully executing their strategy and whose business model has sufficient profit potential. The fund may invest in any sector, and at times may emphasize one or more particular sectors.

## Portfolio Fund Information as of September 30, 2019

Ticker	SGRX
Morningstar Category	Large Growth
Average Market Cap (\$mm)	51,038.86
Net Assets (\$mm)	1,436.80
% Assets in Top 10 Holdings	35.73
Total Number of Holdings	97
Manager Name	Thomas C. Ognar
Manager Tenure	18
Expense Ratio	0.75%
Closed to New Investors	No

## Top Holdings as of September 30, 2019

AMAZON.COM INC	6.94%
ALPHABET INC A	5.16%
MICROSOFT CORP	4.92%
MICROCHIP TECHNOLOGY INC	3.39%
MASTERCARD INC A	3.28%
VISA INC CLASS A	3.04%
MONOLITHIC POWER SYSTEMS INC	2.43%
APPLE INC	2.27%
BURLINGTON STORES INC	2.23%
ENVESTNET INC	2.06%

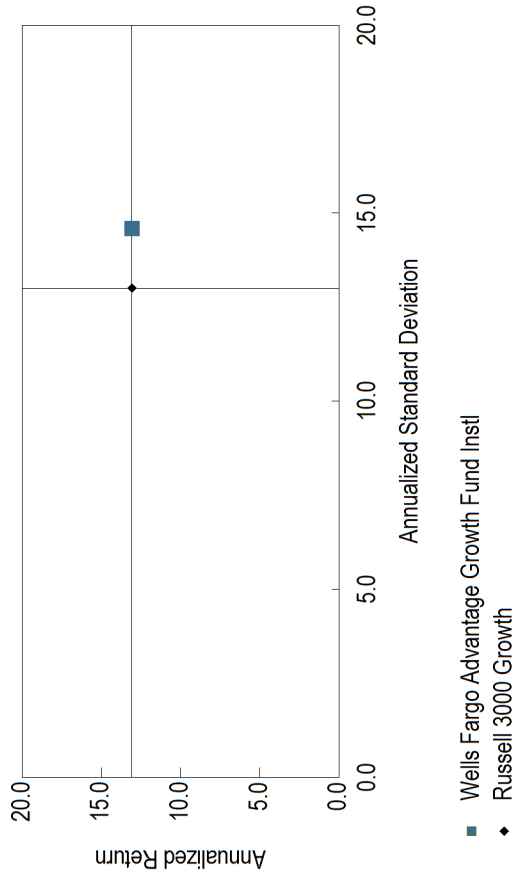
## Sector Allocation as of September 30, 2019

BASIC MATERIALS	1.69%
COMMUNICATION SERVICES	0.95%
CONSUMER CYCLICAL	15.48%
CONSUMER DEFENSIVE	6.24%
ENERGY	0.00%
FINANCIAL SERVICES	11.93%
HEALTHCARE	9.42%
INDUSTRIALS	12.32%
REAL ESTATE	0.77%
TECHNOLOGY	41.20%
UTILITIES	0.00%

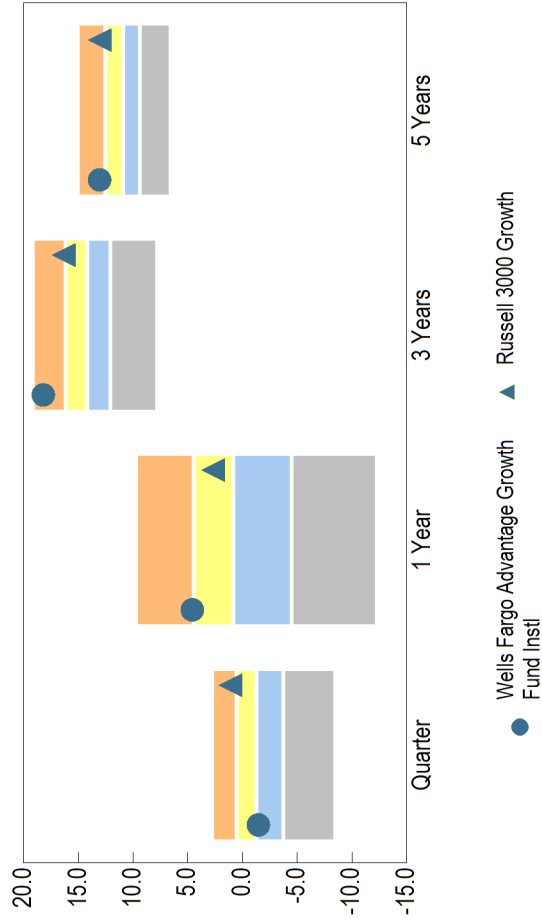
	Third Quarter		Year-To-Date		1 Year Ending 9/30/19		3 Years Ending 9/30/19		5 Years Ending 9/30/19		Since 1/1/12	
	Return	Rank	Return	Rank	Return	Rank	Return	Rank	Return	Rank	Return	Rank
<b>Wells Fargo Advantage Growth Fund Instl</b>	<b>-1.4%</b>	<b>53</b>	<b>26.8%</b>	<b>12</b>	<b>4.6%</b>	<b>25</b>	<b>18.2%</b>	<b>9</b>	<b>13.1%</b>	<b>19</b>	<b>14.3%</b>	<b>41</b>
Russell 3000 Growth	1.1%	18	22.7%	38	2.7%	37	16.4%	23	13.1%	19	15.5%	16



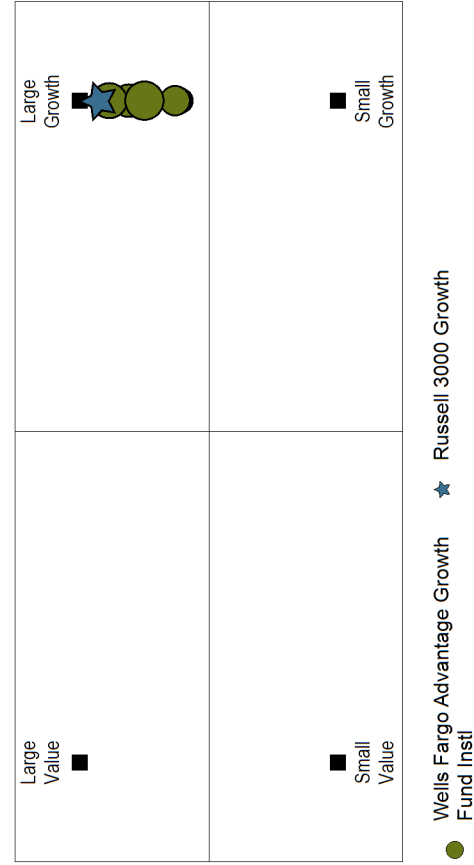
Annualized Return vs. Annualized Standard Deviation  
5 Years Ending September 30, 2019



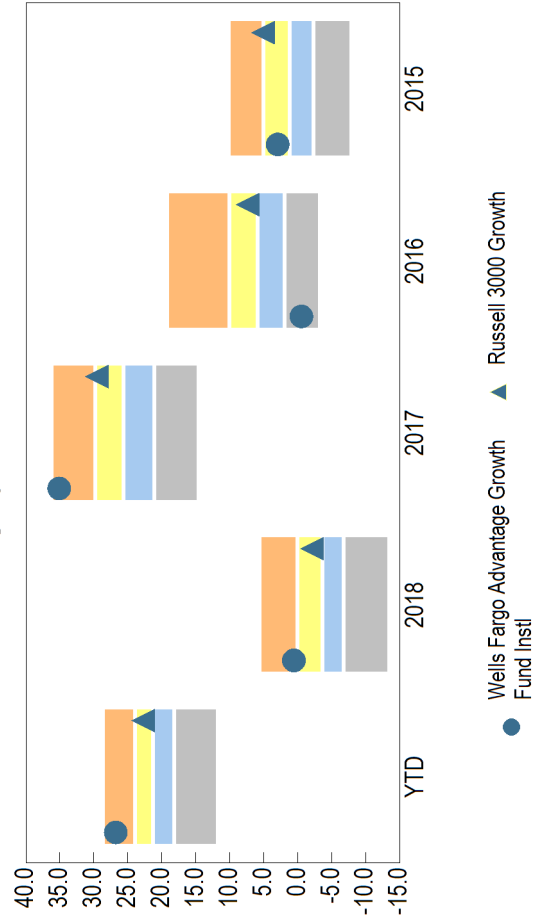
All Cap Growth MStar MF Return Comparison  
Ending September 30, 2019



U.S. Effective Style Map  
5 Years Ending September 30, 2019



All Cap Growth MStar MF Return Comparison  
Ending September 30, 2019



## Diamond Hill Capital Management

September 30, 2019

The fund seeks long-term capital appreciation by investing in companies selling for less than their estimate of intrinsic value. To estimate intrinsic value, the business must be understandable, and they must be able to reasonably forecast its cash flows. They seek businesses with sustainable competitive advantages, conservative balance sheets, and management with an ownership mentality. Investments are sold when the stock price reaches their estimate of intrinsic value, our estimate of intrinsic value is revised such that there is no longer a discount to intrinsic value, a holding reaches the stated maximum position size, or to raise proceeds for a more attractive opportunity.

## Portfolio Fund Information as of September 30, 2019

Ticker	DHLYX
Morningstar Category	Large Value
Average Market Cap (\$mm)	83,687.46
Net Assets (\$mm)	1,395.88
% Assets in Top 10 Holdings	32.34
Total Number of Holdings	52
Manager Name	Charles S. Bath
Manager Tenure	17
Expense Ratio	0.55%
Closed to New Investors	No

## Top Holdings as of September 30, 2019

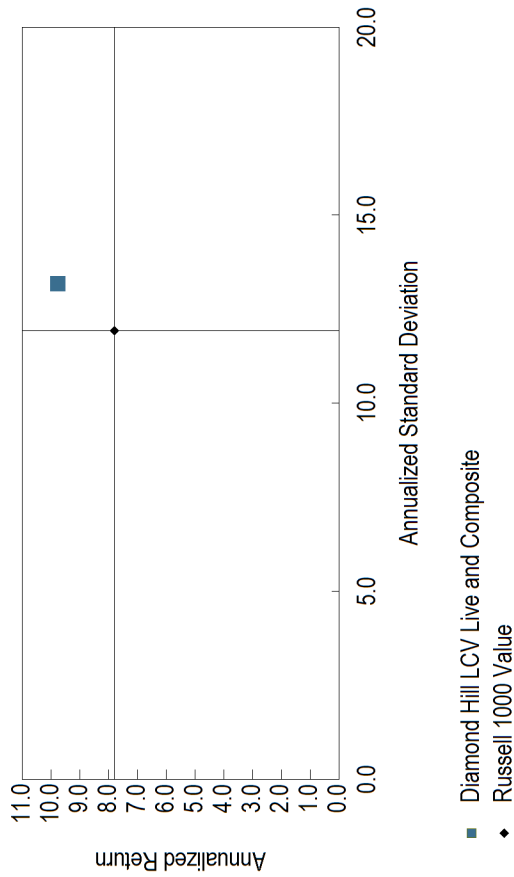
CITIGROUP INC	4.43%
ABBOTT LABORATORIES	4.17%
ALPHABET INC A	3.27%
BERKSHIRE HATHAWAY INC B	3.22%
METLIFE INC	3.03%
MEDTRONIC PLC	2.90%
TJX COMPANIES INC	2.89%
AMERICAN INTERNATIONAL GROUP INC	2.88%
UNITED TECHNOLOGIES CORP	2.81%
PHILIP MORRIS INTERNATIONAL INC	2.74%

## Sector Allocation as of September 30, 2019

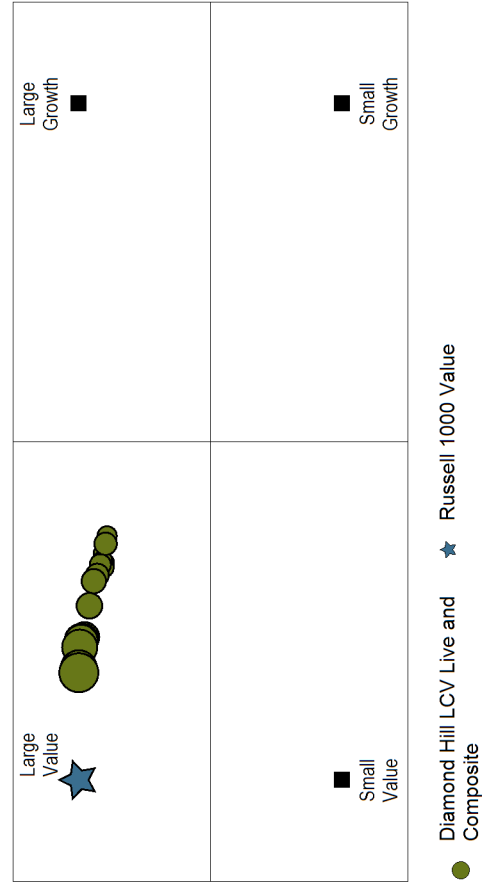
BASIC MATERIALS	3.43%
COMMUNICATION SERVICES	3.80%
CONSUMER CYCLICAL	17.06%
CONSUMER DEFENSIVE	10.76%
ENERGY	3.54%
FINANCIAL SERVICES	28.53%
HEALTHCARE	13.98%
INDUSTRIALS	9.23%
REAL ESTATE	0.00%
TECHNOLOGY	9.67%
UTILITIES	0.00%

	Third Quarter		Year-To-Date		1 Year Ending 9/30/19		3 Years Ending 9/30/19		5 Years Ending 9/30/19		Since 10/1/14	
	Return	Rank	Return	Rank	Return	Rank	Return	Rank	Return	Rank	Return	Rank
<b>Diamond Hill LCV Live and Composite</b>	<b>1.1 %</b>	<b>63</b>	<b>22.4 %</b>	<b>7</b>	<b>5.8 %</b>	<b>20</b>	<b>12.0 %</b>	<b>16</b>	<b>9.8 %</b>	<b>13</b>	<b>9.8 %</b>	<b>13</b>
Russell 1000 Value	1.4 %	55	17.8 %	44	4.0 %	32	9.4 %	57	7.8 %	44	7.8 %	44

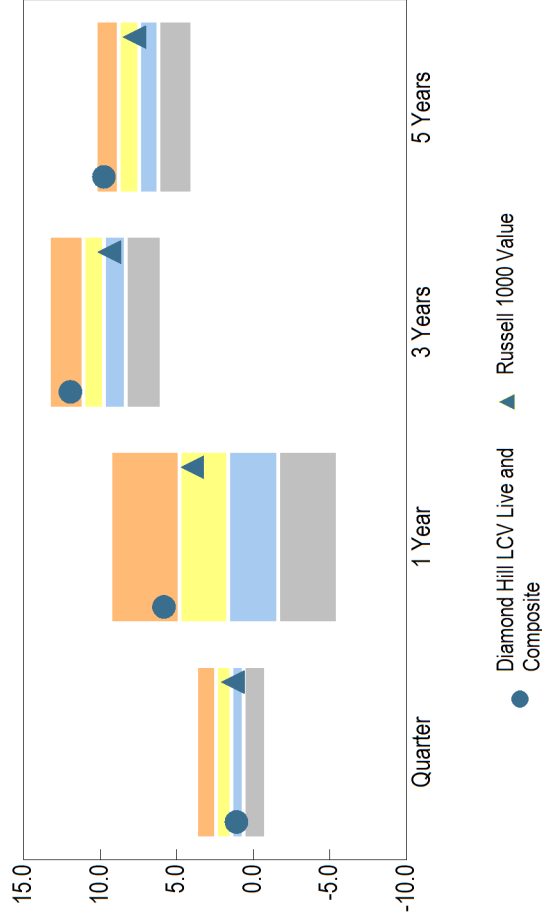
Annualized Return vs. Annualized Standard Deviation  
5 Years Ending September 30, 2019



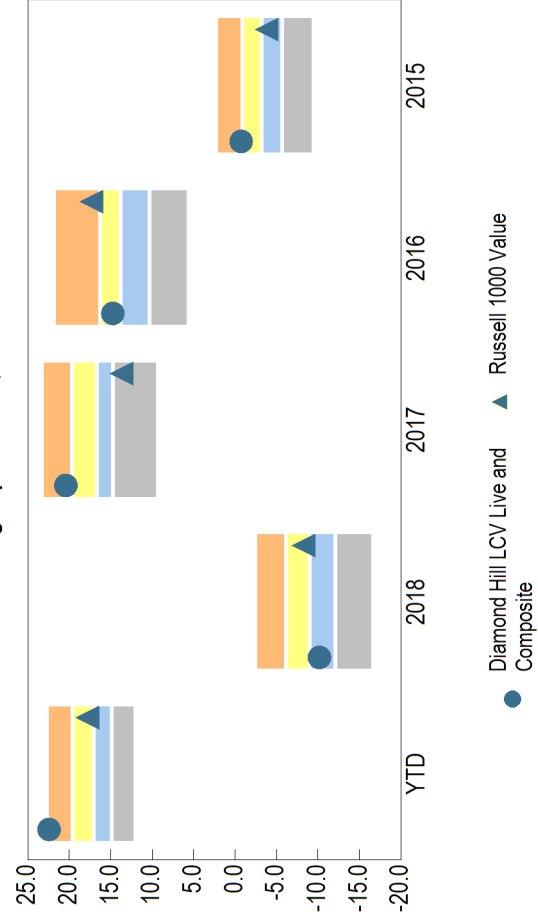
U.S. Effective Style Map  
5 Years Ending September 30, 2019



eV US Large Cap Value Equity Net Return Comparison  
Ending September 30, 2019



eV US Large Cap Value Equity Net Return Comparison  
Ending September 30, 2019



## Sustainable Insight Capital

September 30, 2019

The firm's investment philosophy is based on three core ideas: 1) Security selection is fundamental to delivering positive expected returns, 2) Sustainability factors impact the pricing and the risk of listed assets, and 3) Risk management - identifying and controlling active exposures to intended and unintended risk source - is a critical success factor in delivering alpha to clients. By combining a highly differentiated security selection process and disciplined portfolio construction method with proprietary ESG inputs, SICM seeks to deliver positive active returns while minimizing exposure to unintended and unrewarded active risks. In terms of philosophy, SICM looks for broken stocks, not broken companies. Their value philosophy maintains that true value is defined by companies that trade at a discount to that their fundamentals merit. Identifying sound companies out of favor with investors due to temporary conditions has historically proven to be a very successful strategy as their true value is ultimately recognized in the marketplace.

### Characteristics

	Portfolio	Russell 1000 Value	Top Holdings	Return %
Number of Holdings	49	760	LOCKHEED MARTIN	3.13%
Weighted Avg. Market Cap. (\$B)	102.62	114.23	AMERIPRISE FINL.	2.96%
Median Market Cap. (\$B)	45.93	8.98	YUM! BRANDS	2.95%
Price To Earnings	15.84	16.68	ABBVIE	2.90%
Price To Book	3.91	2.24	CELANESE	2.76%
Price To Sales	1.48	1.50	BRISTOL MYERS SQUIBB	2.76%
Return on Equity (%)	191.86	14.92	APPLE	2.75%
Yield (%)	2.78	2.62	AES	2.74%
Beta		1.00	BOEING	2.67%
R-Squared		1.00	HOME DEPOT	2.67%

### Top Positive Contributors in Percentage

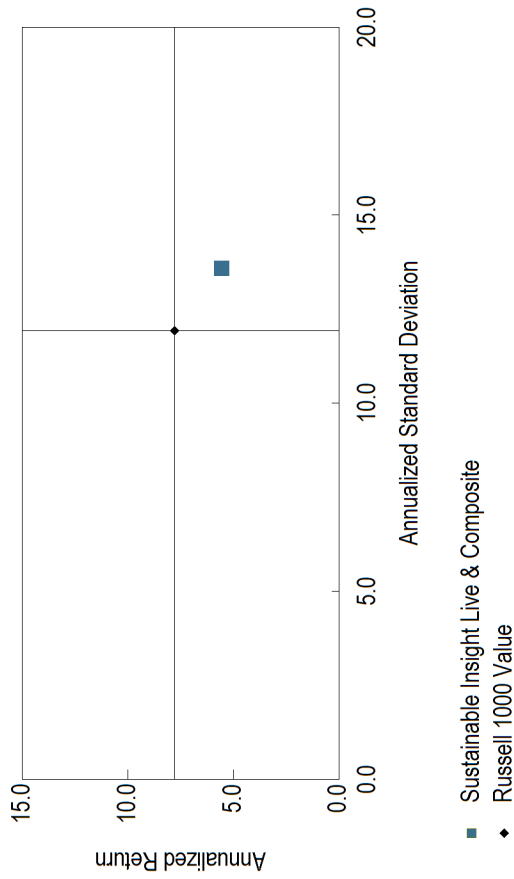
WESTERN DIGITAL (WDC)	25.43%
KROGER (KR)	19.61%
WESTERN UNION (WU)	17.49%
UNITED PARCEL SER.'B' (UPS)	16.99%
AT&T (T)	14.64%

### Top Negative Contributors in Percentage

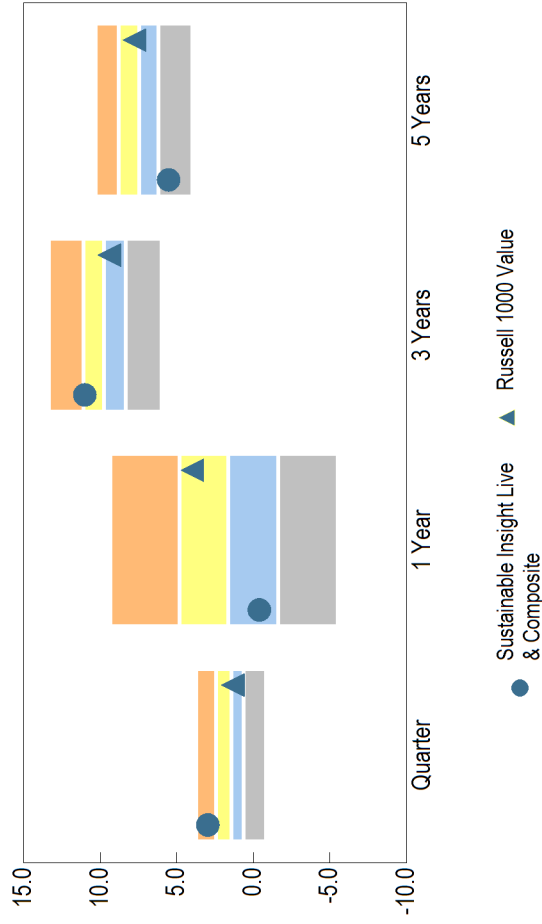
CONTINENTAL RESOURCES (CLR)	-26.74%
EOG RES. (EOG)	-20.07%
ALTRIA GROUP (MO)	-11.89%
OCCIDENTAL PTL. (OXY)	-10.00%
PRUDENTIAL FINL. (PRU)	-9.86%

	Third Quarter		Year-To-Date		1 Year Ending 9/30/19		3 Years Ending 9/30/19		5 Years Ending 9/30/19		Since 10/1/14	
	Return	Rank	Return	Rank	Return	Rank	Return	Rank	Return	Rank	Return	Rank
<b>Sustainable Insight Live &amp; Composite</b>	<b>3.0 %</b>	<b>12</b>	<b>16.5 %</b>	<b>57</b>	<b>-0.4 %</b>	<b>65</b>	<b>11.0 %</b>	<b>28</b>	<b>5.5 %</b>	<b>86</b>	<b>5.5 %</b>	<b>86</b>
Russell 1000 Value	1.4 %	55	17.8 %	44	4.0 %	32	9.4 %	57	7.8 %	44	7.8 %	44

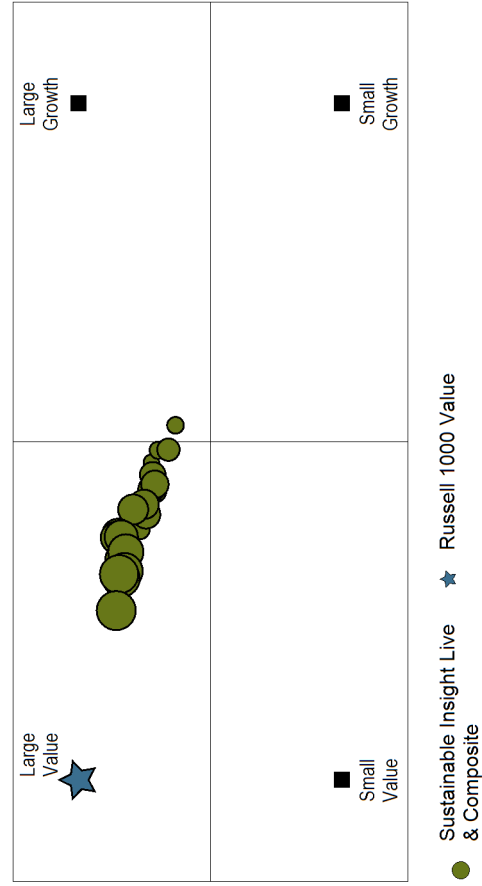
Annualized Return vs. Annualized Standard Deviation  
5 Years Ending September 30, 2019



eV US Large Cap Value Equity Net Return Comparison  
Ending September 30, 2019



U.S. Effective Style Map  
5 Years Ending September 30, 2019



eV US Large Cap Value Equity Net Return Comparison  
Ending September 30, 2019



## Eastern Shore Small Cap

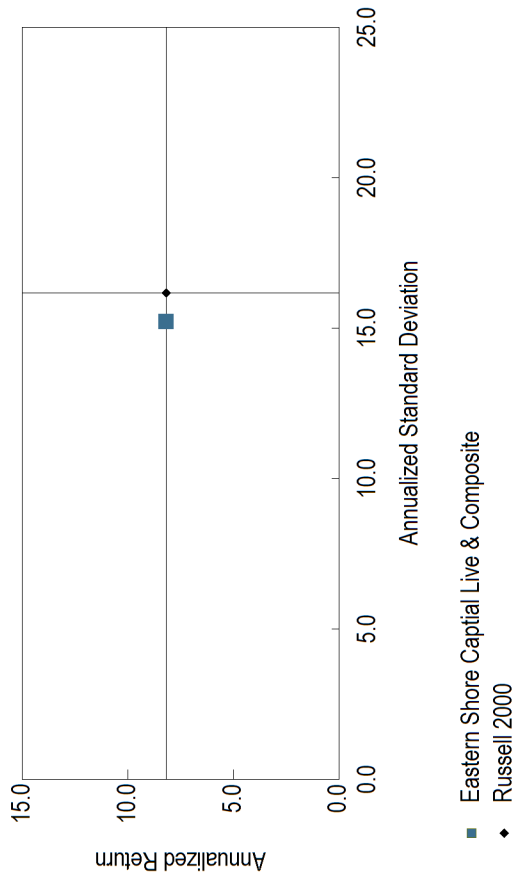
September 30, 2019

The goal of Eastern Shore's Small Cap strategy is to produce greater returns with lower volatility than the benchmark across any given market cycle through superior quality stock selection based on rigorous bottom-up fundamental analysis. Portfolio managers achieve this goal through the implementation of a consistent, disciplined and repeatable investment process utilizing proprietary screening methodologies and detailed fundamental and valuation analyses. The goal of both the quantitative screening and the more qualitative fundamental analysis is to identify quality companies that exhibit the following characteristics: strong or improving financial positioning,

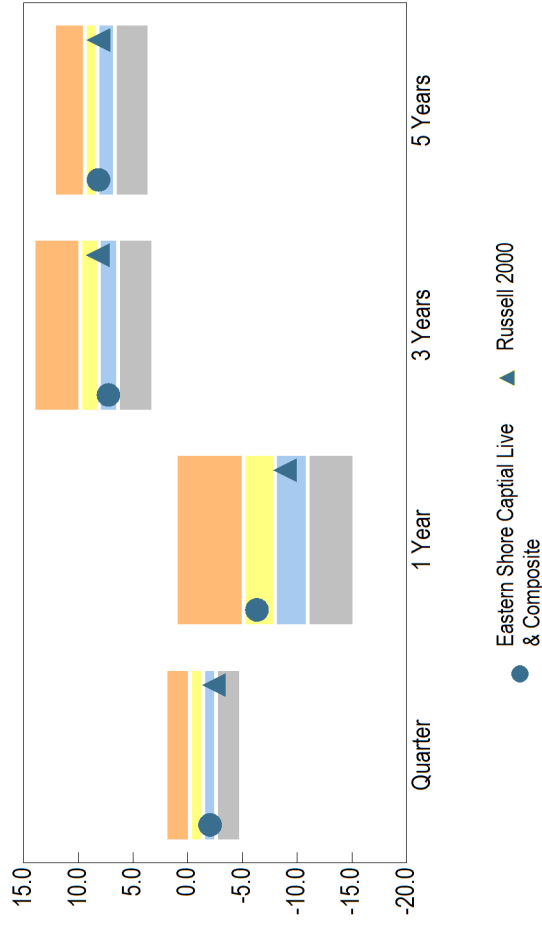
Characteristics		Characteristics		Top Holdings	
	Russell 2000		Russell 2000		
Number of Holdings	92	INDUSTRY SECTOR DISTRIBUTION (% Equity)	Portfolio	REXFORD INDUSTRIAL REAL.	3.11%
Weighted Avg. Market Cap. (\$B)	3.29	Energy	1.85	CABOT MICROELS.	2.86%
Median Market Cap. (\$B)	2.86	Materials	3.40	SOUTHWEST GAS HOLDINGS	2.85%
Price To Earnings	26.10	Industrials	23.06	TERRENO REALTY	2.64%
Price To Book	2.99	Consumer Discretionary	9.84	CHESAPEAKE UTILS.	2.42%
Price To Sales	2.42	Consumer Staples	5.18	INDEPENDENT BANK MASS.	2.12%
Return on Equity (%)	7.81	Health Care	12.42	BALCHEM	2.08%
Yield (%)	0.88	Financials	14.27	NOMAD FOODS	2.05%
Beta	1.00	Information Technology	14.48	FRONTDOOR	1.95%
R-Squared	1.00	Communication Services	1.58	IAA	1.90%
		Utilities	6.80		
		Real Estate	7.10		
			8.00		

	Third Quarter		Year-To-Date		1 Year Ending 9/30/19		3 Years Ending 9/30/19		5 Years Ending 9/30/19		Since 1/1/12	
	Return	Rank	Return	Rank	Return	Rank	Return	Rank	Return	Rank	Return	Rank
<b>Eastern Shore Capital Live &amp; Composite</b>	<b>-2.0 %</b>	<b>61</b>	<b>16.6 %</b>	<b>31</b>	<b>-6.3 %</b>	<b>36</b>	<b>7.3 %</b>	<b>65</b>	<b>8.2 %</b>	<b>52</b>	<b>12.3 %</b>	<b>33</b>
Russell 2000	-2.4 %	72	14.2 %	54	-8.9 %	59	8.2 %	47	8.2 %	52	11.3 %	57

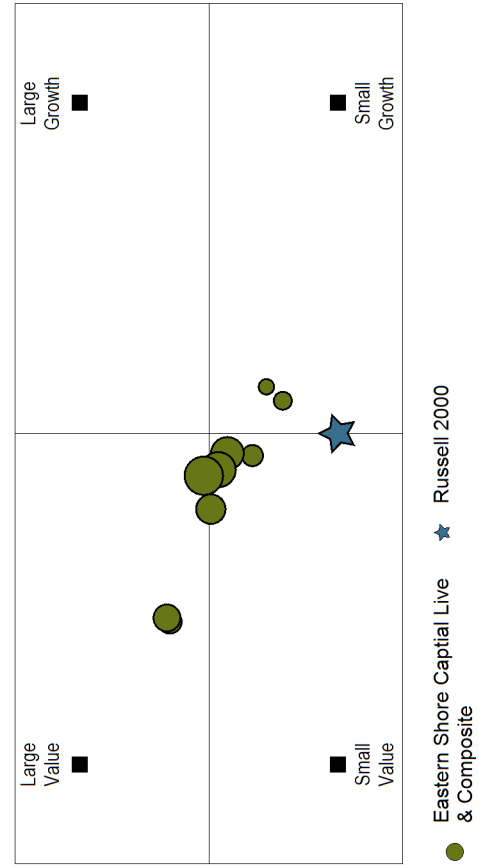
Annualized Return vs. Annualized Standard Deviation  
5 Years Ending September 30, 2019



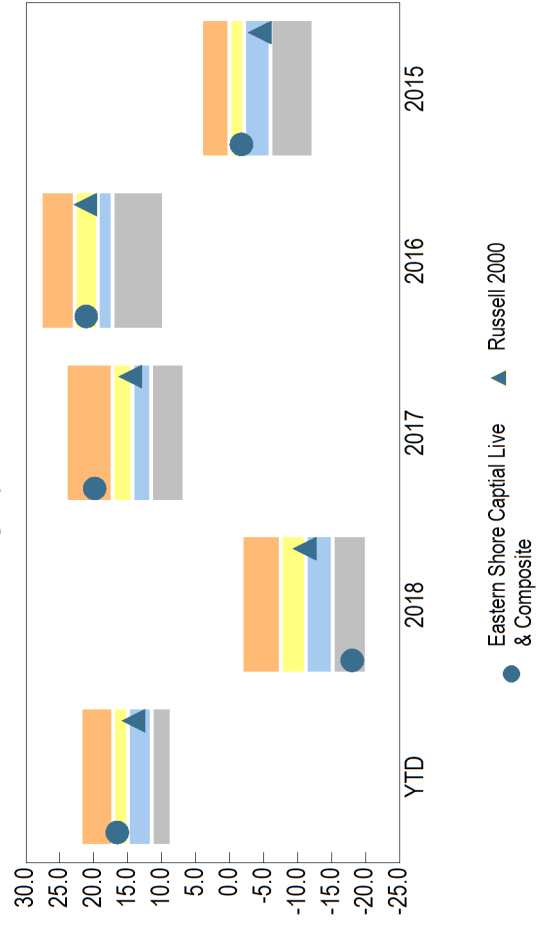
eV US Small Cap Core Equity Net Return Comparison  
Ending September 30, 2019



U.S. Effective Style Map  
5 Years Ending September 30, 2019



eV US Small Cap Core Equity Net Return Comparison  
Ending September 30, 2019



## Invesco Oppenheimer International Growth

September 30, 2019

The investment seeks capital appreciation. The fund mainly invests in the common stock of growth companies that are domiciled or have their primary operations outside of the United States. It may invest 100% of its assets in securities of foreign companies. The fund may invest in emerging markets as well as in developed markets throughout the world. It normally will invest at least 65% of its total assets in common and preferred stocks of issuers in at least three different countries outside of the United States, and emphasize investments in common stocks of issuers that the portfolio managers consider to be "growth" companies.

## Portfolio Fund Information as of September 30, 2019

Ticker	OIGYX
Morningstar Category	Foreign Large Growth
Average Market Cap (\$mm)	26,183.41
Net Assets (\$mm)	5,943.99
% Assets in Top 10 Holdings	23.97
Total Number of Holdings	83
Manager Name	George R. Evans
Manager Tenure	24
Expense Ratio	0.85%
Closed to New Investors	No

## Top Holdings as of September 30, 2019

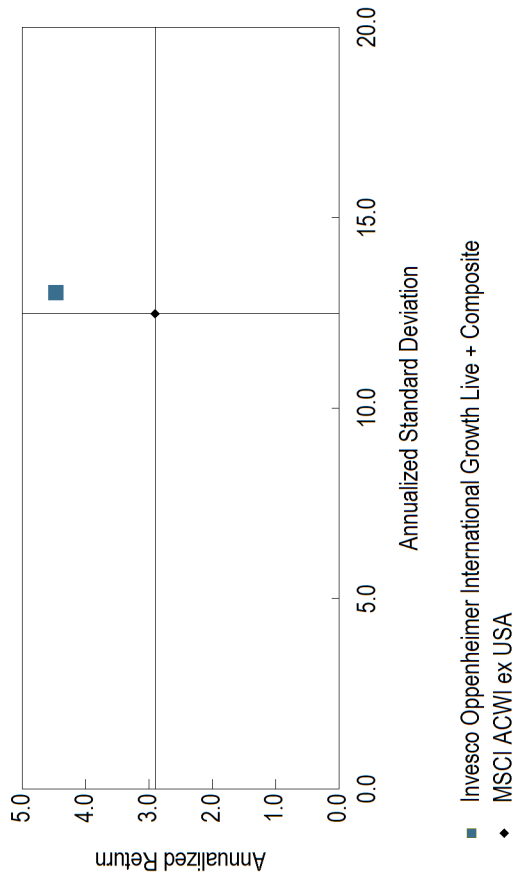
ASML HOLDING NV	2.93%
HITACHI LTD	2.66%
HERMES INTERNATIONAL SA	2.63%
SAP SE	2.62%
HOYA CORP	2.33%
EDENRED SA	2.27%
NOKIA OYJ	2.25%
GRIFOLS SA A	2.16%
ICICI BANK LTD ADR	2.06%
KEYENCE CORP	2.06%
France	15.15%
Japan	12.84%
Switzerland	12.06%
Germany	7.64%
United States	7.36%
United Kingdom	7.10%
Canada	6.13%
Netherlands	5.80%
Spain	4.78%
Australia	2.79%

## Top Countries as of September 30, 2019

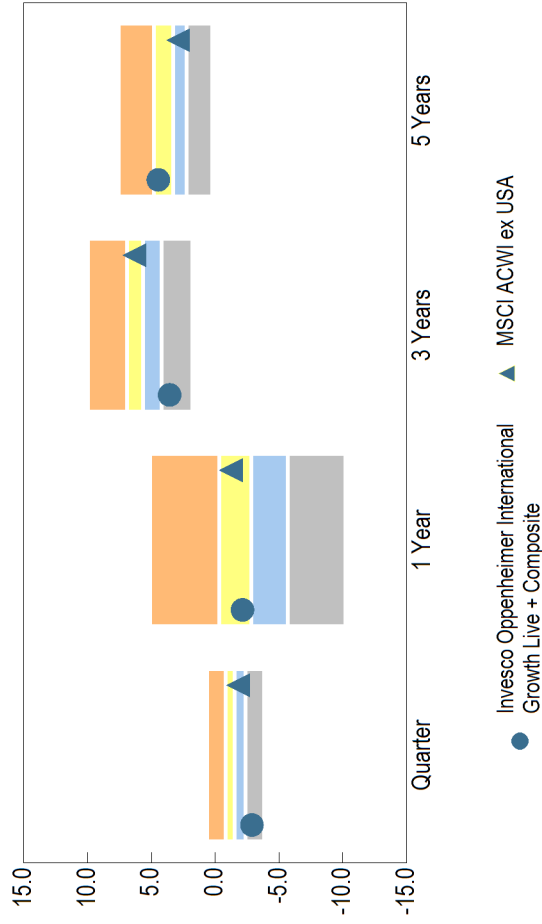
	Third Quarter		Year-To-Date		1 Year Ending 9/30/19		3 Years Ending 9/30/19		5 Years Ending 9/30/19		Since 10/1/14	
	Return	Rank	Return	Rank	Return	Rank	Return	Rank	Return	Rank	Return	Rank
Invesco Oppenheimer International Growth Live + Composite	-2.9 %	95	14.7 %	16	-2.1 %	48	3.6 %	92	4.5 %	6	4.5 %	6
MSCI ACWI ex USA	-1.8 %	70	11.6 %	64	-1.2 %	31	6.3 %	25	2.9 %	63	2.9 %	63



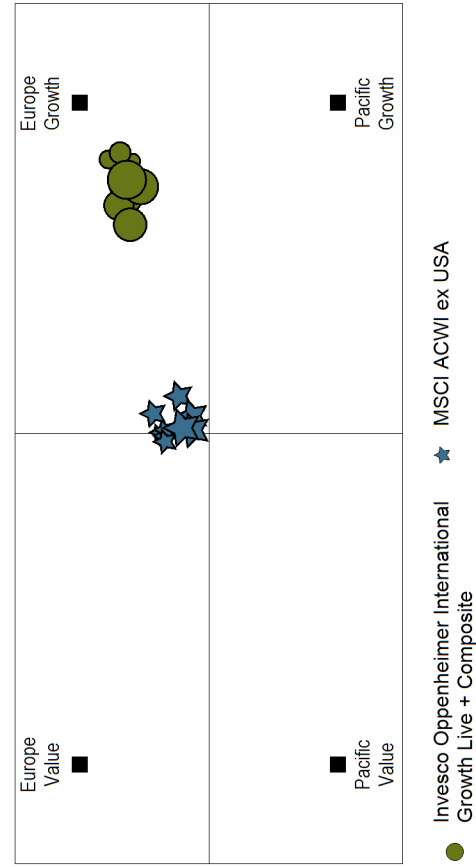
Annualized Return vs. Annualized Standard Deviation  
5 Years Ending September 30, 2019



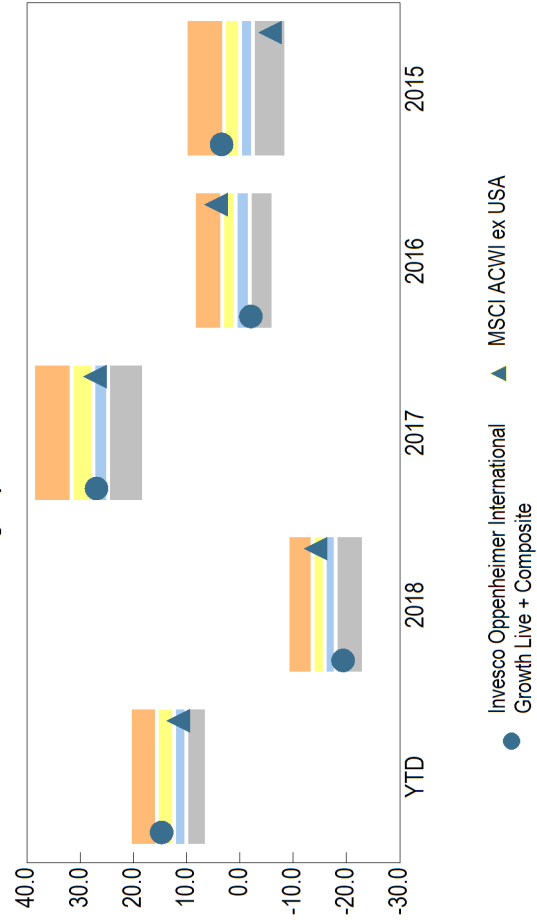
Foreign MStar MF Return Comparison  
Ending September 30, 2019



Non U.S. Regional Effective Style Map  
5 Years Ending September 30, 2019

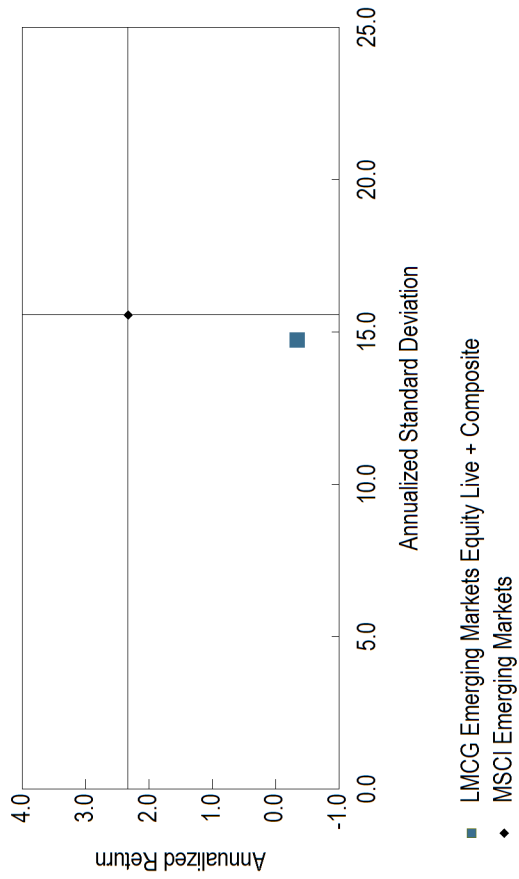


Foreign MStar MF Return Comparison  
Ending September 30, 2019

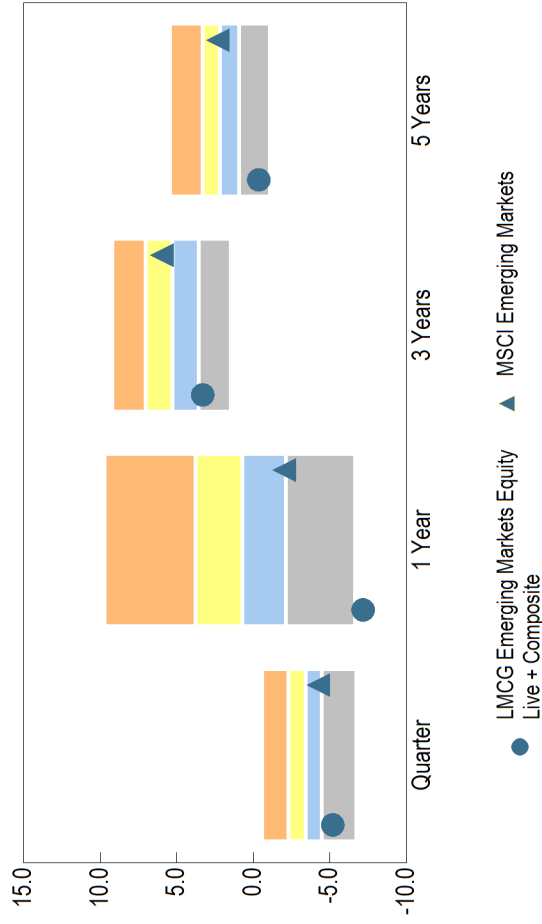




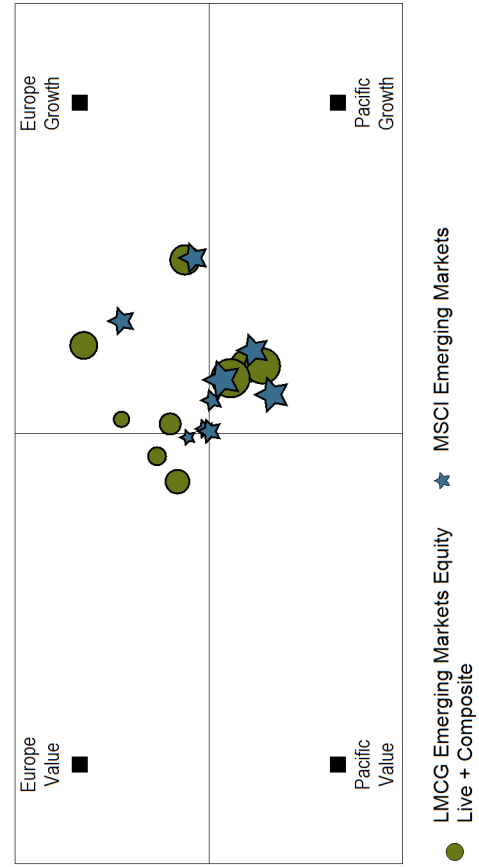
**Annualized Return vs. Annualized Standard Deviation**  
5 Years Ending September 30, 2019



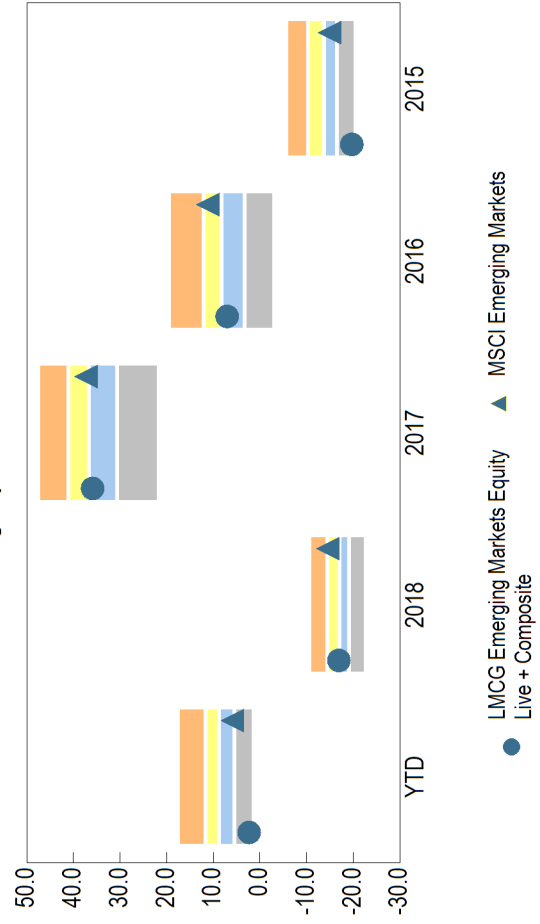
**Diversified Emerging Mkts MStar MF Return Comparison**  
Ending September 30, 2019



**Non U.S. Regional Effective Style Map**  
5 Years Ending September 30, 2019



**Diversified Emerging Mkts MStar MF Return Comparison**  
Ending September 30, 2019



## Brandywine Global Opportunistic Fixed Income Fund

September 30, 2019

Brandywine Global's Fixed Income philosophy is a value-driven, active, strategic approach. Their Opportunistic Fixed Income strategy allows for a 0-15% allocation to emerging markets and for a 0-15% allocation to high yield debt. Brandywine believes this approach is ideally suited to the asset class, as each country and sector exhibit unique valuation parameters. They believe that a client's portfolio should be invested in markets with, what are believed to have, above-average value. Value is defined as a combination of above-average, real interest rates and an under-valued currency. Investments are typically concentrated where existing economic and market conditions can enable that value to be realized in an intermediate time frame. Brandywine's research team has identified global fixed income as an opportunity class wherein active strategies have the most potential for reward and passive, index-replicating strategies are fundamentally insufficient and add an unnecessary level of risk to the portfolio management process. Country-by-country return dispersion (and, therefore, opportunity) across developed country bond markets is remarkable, and if capitalized upon as part of an active managed process, can potentially provide significant excess return (alpha) above the benchmark.

## Country Allocation

Versus FTSE WGBI - Quarter Ending September 30, 2019

	Manager	Ending Allocation	Index	Difference
United States	51.9%	39.2%		12.7%
Mexico	15.2%	0.7%		14.5%
Australia	5.3%	1.6%		3.7%
Colombia	4.7%	0.0%		4.7%
Brazil	4.5%	0.0%		4.5%
Malaysia	4.5%	0.4%		4.1%
Poland	4.4%	0.5%		3.9%
South Africa	4.2%	0.5%		3.7%
Indonesia	3.8%	0.0%		3.8%
Germany	1.7%	5.1%		-3.4%
<b>Total-Top 10 Largest Countries</b>	<b>100.0%</b>	<b>47.9%</b>		<b>52.2%</b>

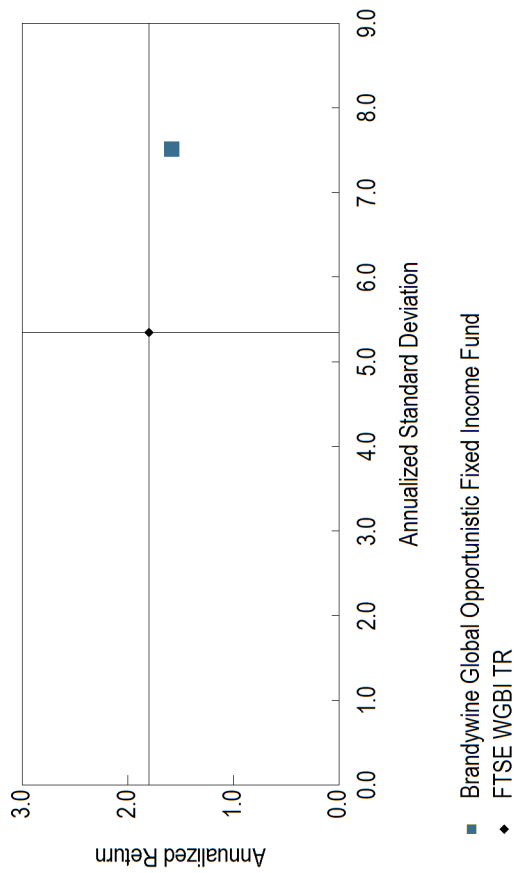
## Currency Allocation

Versus FTSE WGBI - Quarter Ending September 30, 2019

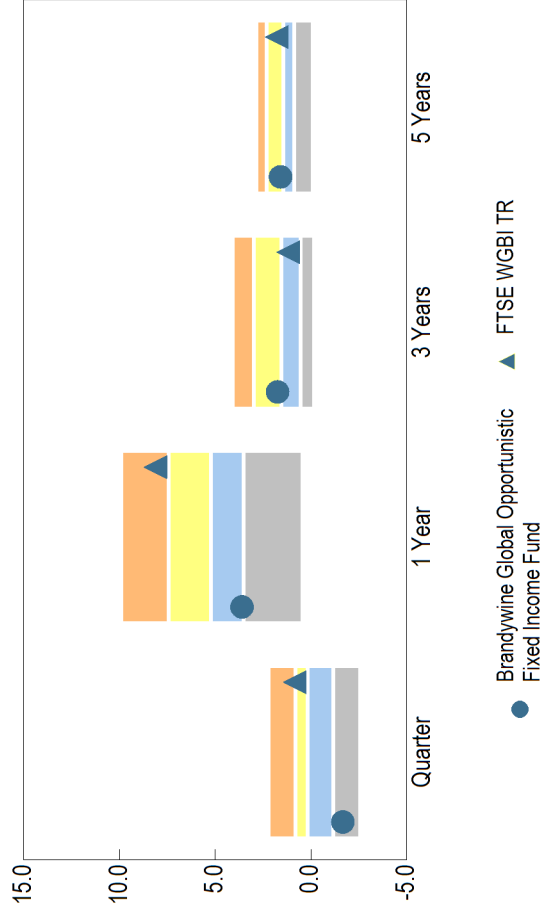
	Manager	Ending Allocation	Index	Difference
<b>Top 10 Largest Currencies</b>				
British Pound Sterling	16.4%	5.1%		11.3%
Mexican Peso	11.2%	0.7%		10.6%
Australian Dollar	10.4%	1.6%		8.7%
US Dollar	9.0%	39.2%		-30.2%
Norwegian Krone	6.4%	0.2%		6.2%
Chilean Peso	6.3%	0.0%		6.3%
Polish Zloty	5.4%	0.5%		4.9%
Swedish Krona	5.3%	0.3%		5.0%
Colombian Peso	4.7%	0.0%		4.7%
Indonesian Rupiah	4.6%	0.0%		4.6%
<b>Total-Top 10 Largest Currencies</b>	<b>79.6%</b>	<b>47.5%</b>		<b>32.1%</b>

	Third Quarter		Year-To-Date		1 Year Ending 9/30/19		3 Years Ending 9/30/19		5 Years Ending 9/30/19		Since 2/1/12	
	Return	Rank	Return	Rank	Return	Rank	Return	Rank	Return	Rank	Return	Rank
<b>Brandywine Global Opportunistic Fixed Income Fund</b>	<b>-1.7%</b>	<b>84</b>	<b>4.9%</b>	<b>60</b>	<b>3.6%</b>	<b>75</b>	<b>1.7%</b>	<b>43</b>	<b>1.6%</b>	<b>48</b>	<b>2.6%</b>	<b>16</b>
FTSE WGBI TR	0.8%	25	6.3%	34	8.1%	17	1.2%	61	1.8%	39	0.8%	74

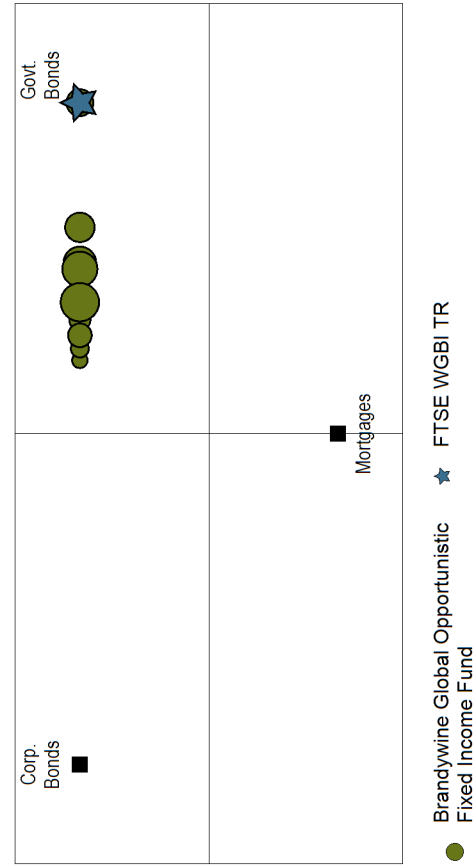
Annualized Return vs. Annualized Standard Deviation  
5 Years Ending September 30, 2019



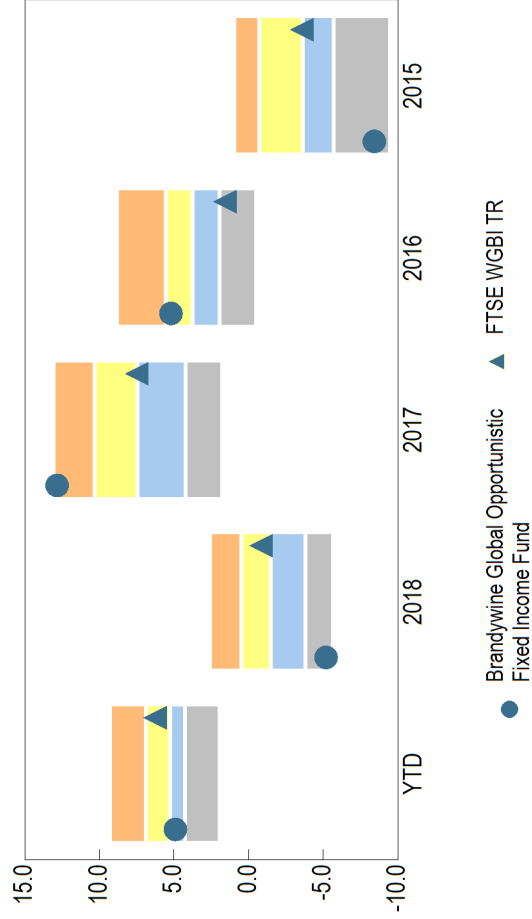
World Bond MStar MF Return Comparison  
Ending September 30, 2019



Fixed Income Style Map  
5 Years Ending September 30, 2019



World Bond MStar MF Return Comparison  
Ending September 30, 2019



# Johnson Institutional Core Bond Fund

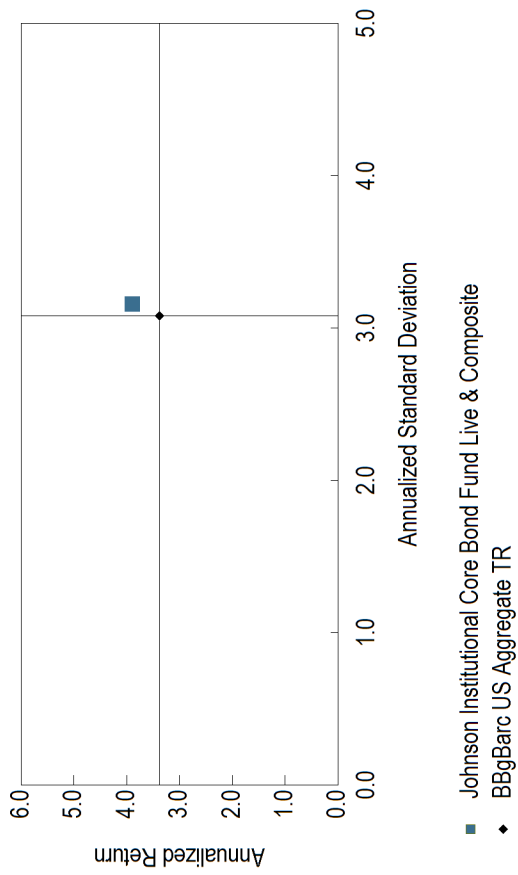
Johnson's fixed income strategy employs a "quality yield" approach. The cornerstones of their approach are to emphasize investment grade, non-government securities and capture the slope of the yield curve. Because they believe that income drives returns in the bond market, Johnson focuses on building portfolios with a sustainable yield advantage over the benchmark. To avoid downside risks, this is accomplished within a strict risk management discipline that seeks to avoid credit surprises in the portfolio. Investment decisions are made with respect to sector allocation, maturity structure and issue selection to capture the relative value of the bond market for client portfolios. Junk rated, non-dollar denominated, and derivative securities are excluded from their universe as part of their risk management methodology. They do not believe that interest rate anticipation is a prudent strategy and limit the duration of portfolios to a range within 20% of the benchmark index.

## Portfolio Fund Information as of September 30, 2019

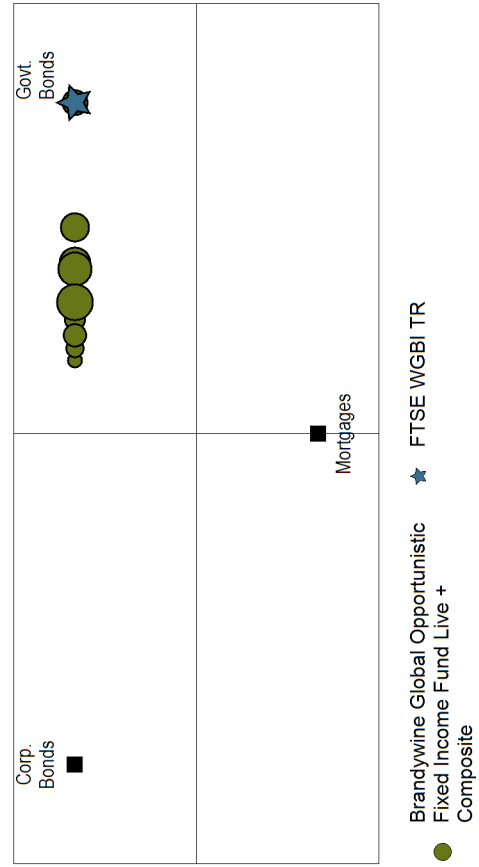
Ticker	JIBFX	UNITED STATES TREASURY BONDS 2.5%	4.73%	<b>Fixed Income Sectors as of September 30, 2019</b>	
Morningstar Category	Intermediate Core Bond	UNITED STATES TREASURY BONDS 2.75%	4.63%	GOVERNMENT	23.52%
Average Market Cap (\$mm)		UNITED STATES TREASURY NOTES 2.75%	4.04%	MUNICIPAL	2.88%
Net Assets (\$mm)	270.44	UNITED STATES TREASURY BONDS 2.5%	2.40%	CORPORATE	46.85%
% Assets in Top 10 Holdings	27.31	FEDERAL NATIONAL MORTGAGE ASSOCIATION 3.7%	2.04%	SECURITIZED	23.97%
Total Number of Holdings	125	FEDERAL HOME LOAN MORTGAGE CORPORATION 3.5%	1.98%	CASH & EQUIVALENTS	2.77%
Manager Name	Dale Coates	FEDERAL HOME LOAN MORTGAGE CORPORATION 2%	1.94%	DERIVATIVE	0.00%
Manager Tenure	19	BANK OF AMERICA CORPORATION 3.25%	1.93%		
Expense Ratio	0.25%	UNITED STATES TREASURY NOTES 1.5%	1.86%		
Closed to New Investors	No	BERKSHIRE HATHAWAY ENERGY COMPANY 3.75%	1.75%		

	Third Quarter		Year-To-Date		1 Year Ending 9/30/19		3 Years Ending 9/30/19		5 Years Ending 9/30/19		Since 9/1/16	
	Return	Rank	Return	Rank	Return	Rank	Return	Rank	Return	Rank	Return	Rank
<b>Johnson Institutional Core Bond Fund Live &amp; Composite</b>	<b>2.3 %</b>	<b>39</b>	<b>9.2 %</b>	<b>32</b>	<b>10.7 %</b>	<b>24</b>	<b>3.3 %</b>	<b>31</b>	<b>3.9 %</b>	<b>17</b>	<b>3.2 %</b>	<b>30</b>
BBgBarc US Aggregate TR	2.3 %	55	8.5 %	73	10.3 %	49	2.9 %	66	3.4 %	63	2.8 %	65

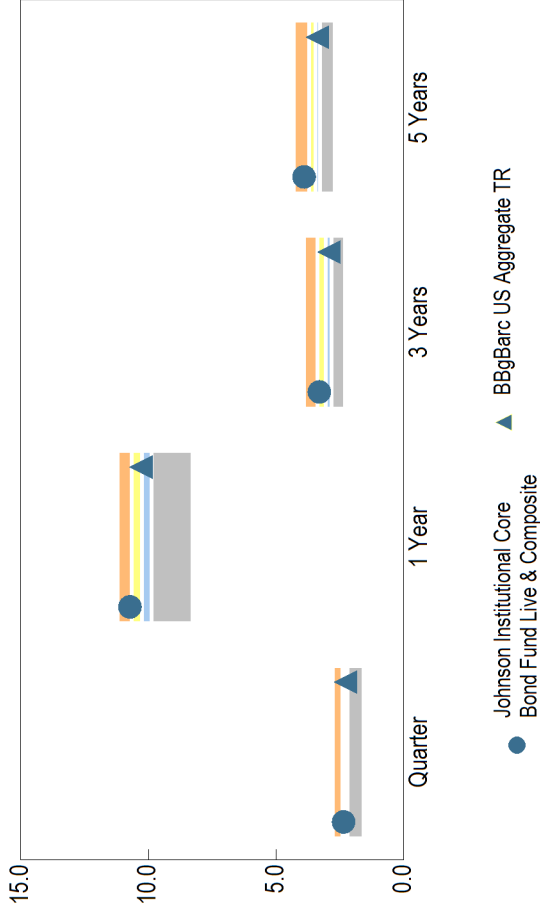
Annualized Return vs. Annualized Standard Deviation  
5 Years Ending September 30, 2019



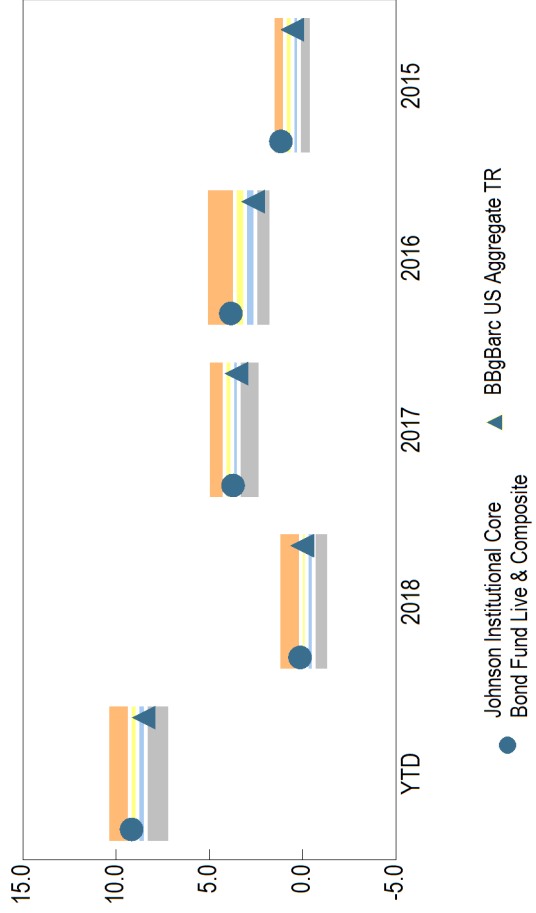
Fixed Income Style Map  
5 Years Ending September 30, 2019



eV US Core Fixed Inc Net Return Comparison  
Ending September 30, 2019



eV US Core Fixed Inc Net Return Comparison  
Ending September 30, 2019





## Aberdeen Emerging Markets Debt Fund

September 30, 2019

Aberdeen believes that successful investment in emerging market debt requires strategic fundamental research coupled with analysis of market technicals. Comprehensive country research, which is set in the context of global economic developments, forms the foundation of their investment process. Their research is consistently updated to provide a forward-looking analysis of a country's credit profile, together with developments in its capital markets. They are focused in emerging debt markets and rely on their extensive experience of investing in this asset class.

## Portfolio Fund Information as of September 30, 2019

Ticker	AKFIX
Morningstar Category	Emerging Markets Bond
Average Market Cap (\$mm)	
Net Assets (\$mm)	45.68
% Assets in Top 10 Holdings	22.22
Total Number of Holdings	121
Manager Name	Kevin Daly
Manager Tenure	7
Expense Ratio	0.66%
Closed to New Investors	No

## Top Holdings as of September 30, 2019

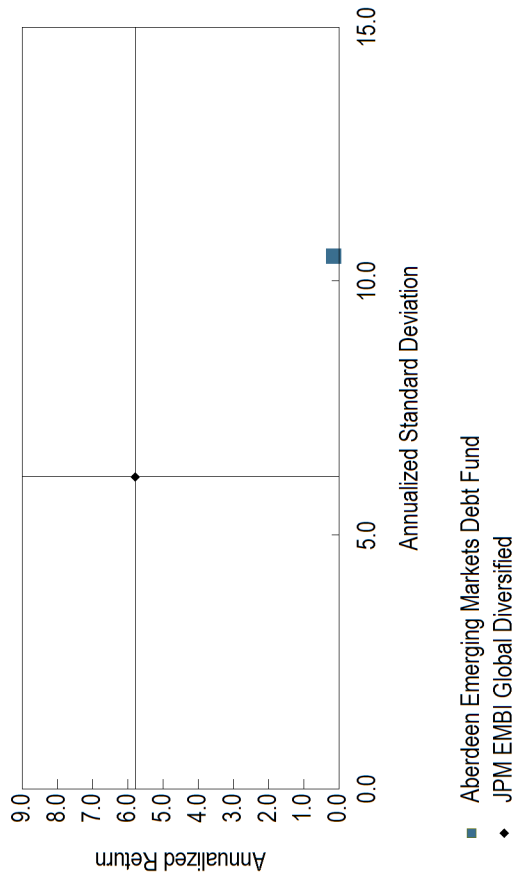
STATE OF QATAR 4.82%	2.82%
UKRAINE (REPUBLIC OF) 7.75%	2.71%
SAUDI ARABIA (KINGDOM OF) 4.5%	2.61%
SECRETARIA TESOURO NACIONAL 6%	2.48%
DOMINICAN REPUBLIC 6.85%	2.34%
INDONESIA (REPUBLIC OF) 6.62%	1.98%
REPUBLIC OF ECUADOR 8.75%	1.94%
SAUDI ARABIAN OIL COMPANY 4.25%	1.85%
BAHAMAS (COMMONWEALTH OF) 6%	1.76%
REPUBLIC OF EL SALVADOR 5.88%	1.74%

## Fixed Income Sectors as of September 30, 2019

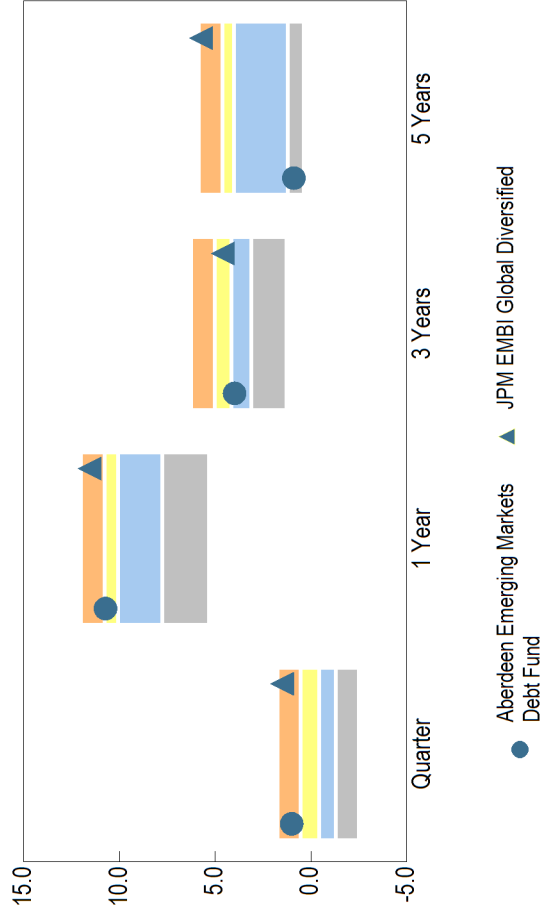
GOVERNMENT	82.66%
MUNICIPAL	0.00%
CORPORATE	14.95%
SECURITIZED	0.00%
CASH & EQUIVALENTS	2.39%
DERIVATIVE	0.00%

	Third Quarter		Year-To-Date		1 Year Ending 9/30/19		3 Years Ending 9/30/19		Since 4/1/12	
	Return	Rank	Return	Rank	Return	Rank	Return	Rank	Return	Rank
<b>Aberdeen Emerging Markets Debt Fund</b>	<b>1.0%</b>	<b>20</b>	<b>12.5%</b>	<b>18</b>	<b>10.7%</b>	<b>28</b>	<b>4.0%</b>	<b>59</b>	<b>0.1%</b>	<b>93</b>
JPM EMBI Global Diversified	1.5%	13	13.0%	8	11.6%	13	4.6%	39	5.8%	11

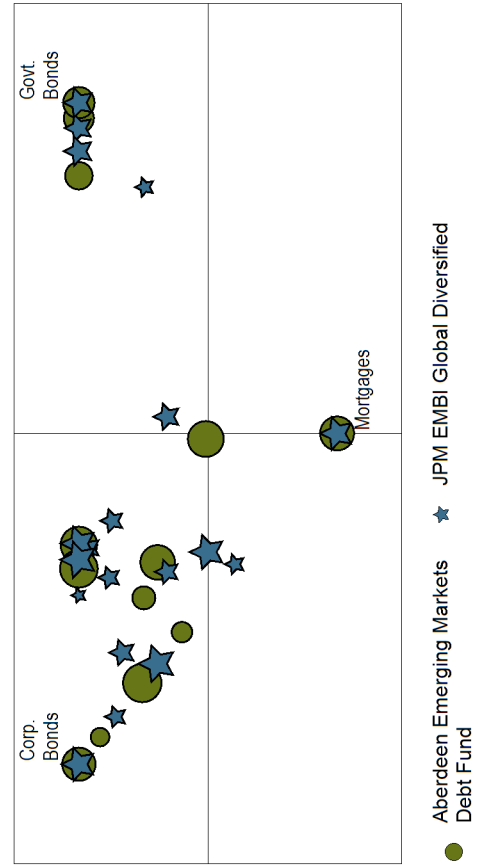
Annualized Return vs. Annualized Standard Deviation  
7 Years 6 Months Ending September 30, 2019



eV Emg Mkt Fixed Inc Hedged Net Return Comparison  
Ending September 30, 2019



Fixed Income Style Map  
7 Years 6 Months Ending September 30, 2019



eV Emg Mkt Fixed Inc Hedged Net Return Comparison  
Ending September 30, 2019



# Courage Credit Opportunities III

## September 30, 2019

Courage Credit Opportunities focuses on distressed securities of middle-market U.S. companies with an emphasis on non-control positions in secured and senior debt instruments. The Fund employs an active approach to influence the process and enhance value. The portfolio targets 20 to 30 long positions, generally between 2% and 7% of assets, focused on secured and other senior debt, which provide collateral and legal safeguards. Courage will incorporate a rigorous and detailed understanding of enterprise value, corporate and legal structure, bankruptcy law, credit, debt capacity, fundamental equity valuation, and above all, risk pricing.

### Cash Flows

#### 4 Years 10 Months Ending September 30, 2019

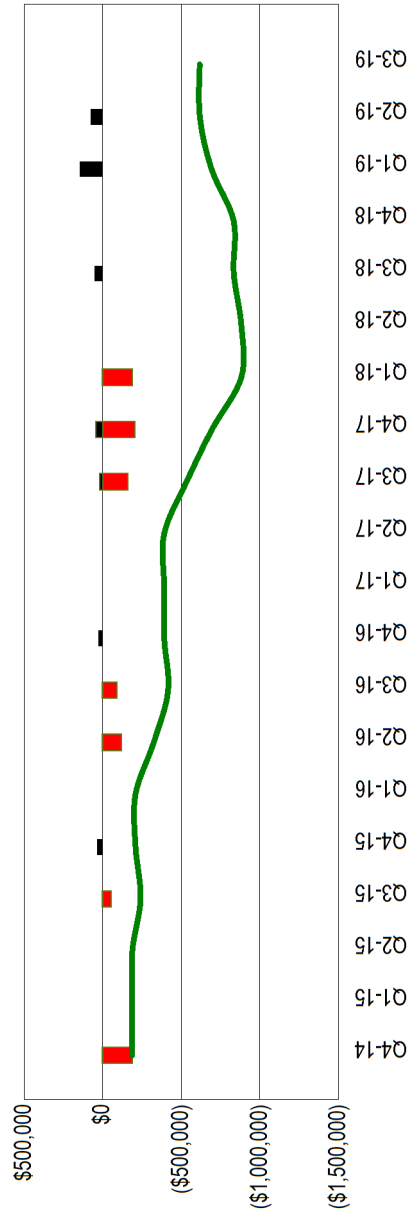
Quarter Ending	Beginning Market Value	Contributions	Withdrawals	Net Cash Flow	Net Investment Change	Ending Market Value
Dec-14	--	\$189,145.00	\$0.00	\$189,145.00	-\$22,880.00	\$166,265.00
Mar-15	\$166,265.00	\$0.00	\$0.00	\$0.00	\$6,101.00	\$172,366.00
Jun-15	\$172,366.00	\$0.00	\$0.00	\$0.00	\$32.00	\$172,398.00
Sep-15	\$172,398.00	\$52,402.00	\$0.00	\$52,402.00	-\$4,200.00	\$220,600.00
Dec-15	\$220,600.00	\$0.00	-\$32,131.00	-\$32,131.00	-\$4,866.00	\$183,603.00
Mar-16	\$183,603.00	\$0.00	\$0.00	\$0.00	-\$2,198.00	\$181,405.00
Jun-16	\$181,405.00	\$116,136.00	\$0.00	\$116,136.00	\$9,919.00	\$307,460.00
Sep-16	\$307,460.00	\$91,316.00	\$0.00	\$91,316.00	-\$8,721.00	\$390,055.00
Dec-16	\$390,055.00	\$0.00	-\$25,359.00	-\$25,359.00	\$13,304.00	\$378,000.00
Mar-17	\$378,000.00	\$0.00	\$0.00	\$0.00	\$26,121.00	\$404,121.00
Jun-17	\$404,121.00	\$0.00	\$0.00	\$0.00	-\$32,129.00	\$371,992.00
Sep-17	\$371,992.00	\$160,508.00	-\$17,572.00	\$142,936.00	\$7,266.00	\$522,194.00
Dec-17	\$522,194.00	\$202,310.00	-\$40,967.00	\$161,343.00	\$49,197.00	\$732,734.00
Mar-18	\$732,734.00	\$186,980.00	\$0.00	\$186,980.00	\$15,539.00	\$935,253.00
Jun-18	\$935,253.00	\$0.00	\$0.00	\$0.00	\$25,973.00	\$961,226.00
Sep-18	\$961,226.00	\$0.00	-\$48,725.00	-\$48,725.00	\$50,585.00	\$963,086.00
Dec-18	\$963,086.00	\$0.00	\$0.00	\$0.00	-\$88,264.00	\$874,822.00
Mar-19	\$874,822.00	\$0.00	-\$141,958.00	-\$141,958.00	\$13,296.00	\$746,160.00
Jun-19	\$746,160.00	\$0.00	-\$73,792.00	-\$73,792.00	-\$23,222.00	\$649,146.00
Sep-19	\$649,146.00	\$0.00	\$0.00	\$0.00	-\$40,119.00	\$609,027.00

## Non-Marketable Securities Overview

As of September 30, 2019

Account Type	Account	Vintage Year	Commitment	Cumulative Takedown Distributions	Value (RV)	Total Value (RV + Dist)	Unfunded Commitment	DPI (dist / takedowns)	RVPI (RV / takedowns)	TVPI (TV / takedown)	Takedown (takedowns / commit)	IRR
Fixed	Courage Credit Opportunities III	2014	--	\$998,797	\$609,027	\$989,531	--	38.10%	60.98%	99.07%	--	-0.39
<b>Total Account</b>				<b>\$998,797</b>	<b>\$609,027</b>	<b>\$989,531</b>	<b>--</b>	<b>38.10%</b>	<b>60.98%</b>	<b>99.07%</b>	<b>--</b>	<b>-0.39</b>

## Non-Marketable Investments Cash Flow Analysis From December 1, 2014 To September 30, 2019

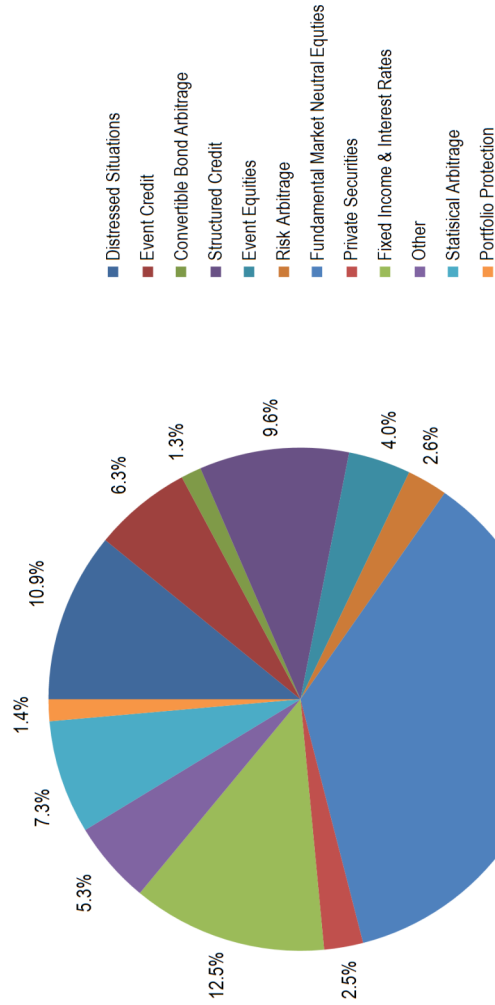


## Ironwood Institutional Multi-Strategy Fund LLC

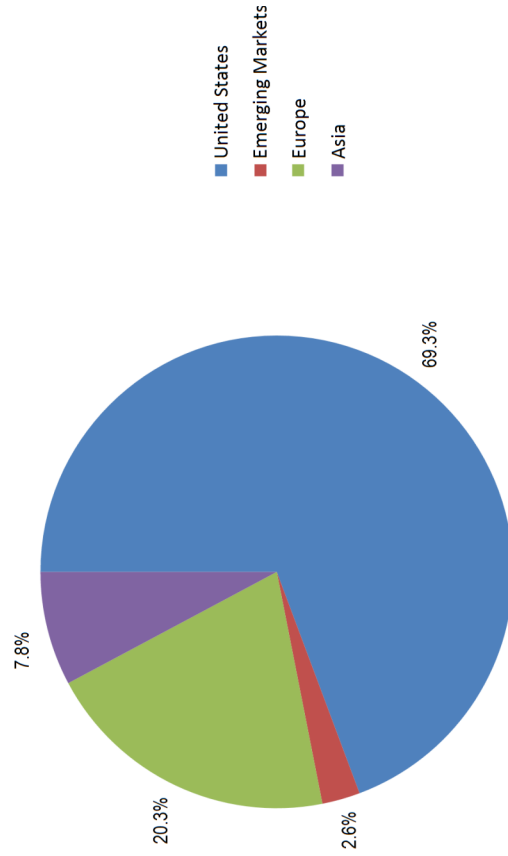
September 30, 2019

The investment objective of the Ironwood Institutional Multi-Strategy Fund is capital appreciation with limited variability of returns uncorrelated to the broader markets. Ironwood focuses on relative value and other non-directional investment strategies including event driven, equity market neutral, credit opportunities, distressed securities and various arbitrage-based strategies. The Ironwood team believes in investing with institutional quality managers who have low volatility of returns and whose top priority is consistent profitability. Ironwood contributes value through its continuous due diligence and experienced, professional oversight of the hedge fund managers with whom it invests. The Ironwood portfolios are generally invested with 20 to 35 managers.

Strategy Allocation as of September 30, 2019

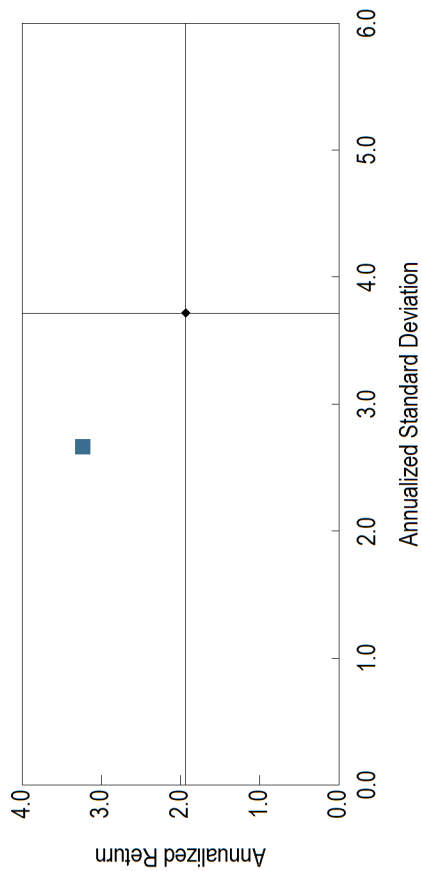


Geographic Allocation as of September 30, 2019

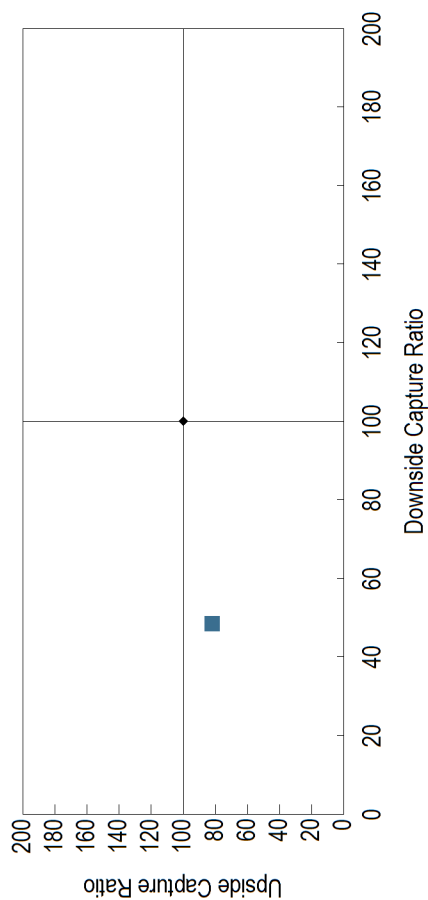


	Third Quarter	Year-To-Date	1 Year Ending 9/30/19	3 Years Ending 9/30/19	5 Years Ending 9/30/19	Since 3/1/12
<b>Ironwood Institutional Multi-Strategy Fund LLC</b>	<b>0.6 %</b>	<b>4.9 %</b>	<b>2.3 %</b>	<b>5.2 %</b>	<b>3.2 %</b>	<b>5.3 %</b>
HFR1 Fund of Funds Composite Index	-1.0 %	5.1 %	-0.1 %	3.1 %	1.9 %	2.9 %

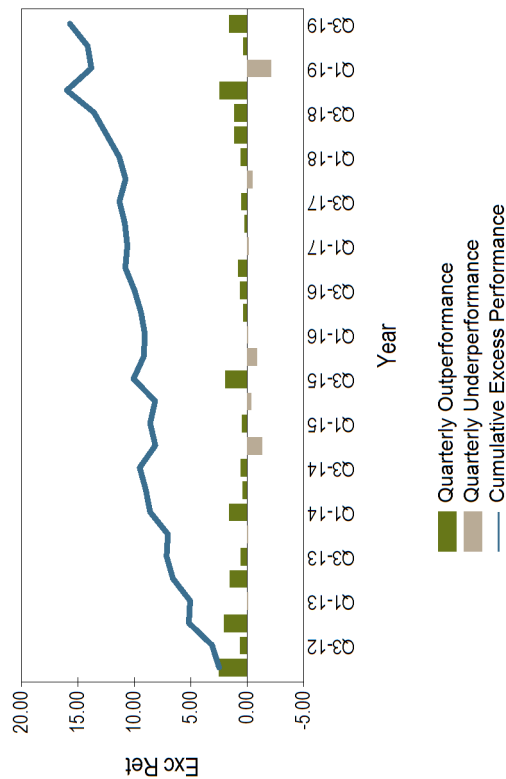
Annualized Return vs. Annualized Standard Deviation  
5 Years Ending September 30, 2019



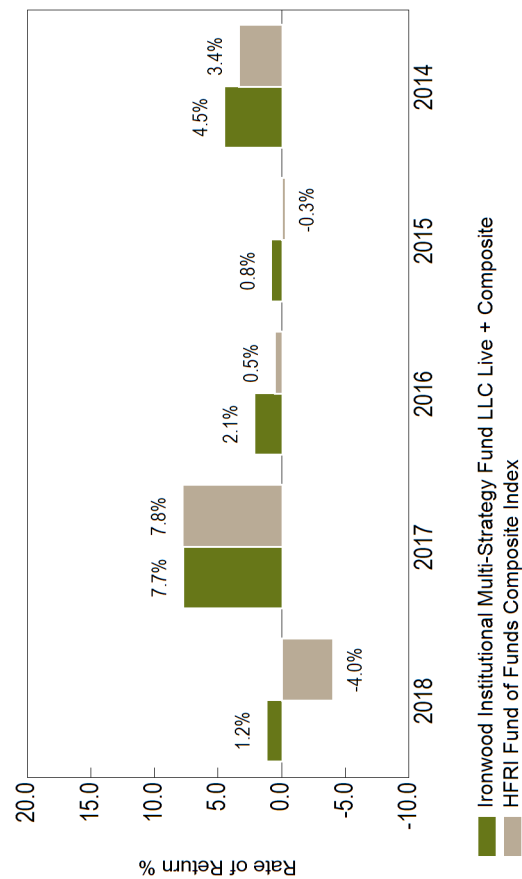
Upside Capture Ratio vs. Downside Capture Ratio  
5 Years Ending September 30, 2019



Quarterly and Cumulative Excess Performance



Return Summary  
Ending September 30, 2019



## BTG Pactual Global Timberland Resources Fund (US), LLC

September 30, 2019

The objective of the BTG Pactual Global Timberland Resources Fund II, LLC is to invest in a diversified portfolio of timberland that achieves the investment goals of cumulative returns, liquidity and reduced risk. Consistent with this objective, the investment strategy of the fund is designed to capitalize on the characteristics and differences found with forest life cycle stages and timber markets. Portfolio construction is the key to maximizing the benefits of these characteristics and differences.

## Cash Flows

## 7 Years 2 Months Ending September 30, 2019

Quarter Ending	Beginning Market Value	Contributions	Withdrawals	Net Cash Flow	Net Investment Change	Ending Market Value
Sep-12	--	\$531,677.02	\$0.00	\$531,677.02	-\$204.02	\$531,473.00
Dec-12	\$531,473.00	\$0.00	\$0.00	\$0.00	\$14,555.00	\$546,028.00
Mar-13	\$546,028.00	\$0.00	\$0.00	\$0.00	\$5,146.00	\$551,174.00
Jun-13	\$551,174.00	\$0.00	\$0.00	\$0.00	\$6,671.00	\$557,845.00
Sep-13	\$557,845.00	\$0.00	\$0.00	\$0.00	\$52,315.00	\$610,160.00
Dec-13	\$610,160.00	\$0.00	\$0.00	\$0.00	\$12,267.00	\$622,427.00
Mar-14	\$622,427.00	\$0.00	\$0.00	\$0.00	\$8,268.00	\$630,695.00
Jun-14	\$630,695.00	\$0.00	\$0.00	\$0.00	-\$8,458.00	\$622,237.00
Sep-14	\$622,237.00	\$0.00	\$0.00	\$0.00	\$14,996.00	\$637,233.00
Dec-14	\$637,233.00	\$0.00	\$0.00	\$0.00	\$5,814.00	\$643,047.00
Mar-15	\$643,047.00	\$268,322.98	\$0.00	\$268,322.98	\$7,916.02	\$919,286.00
Jun-15	\$919,286.00	\$0.00	\$0.00	\$0.00	-\$4,815.00	\$914,471.00
Sep-15	\$914,471.00	\$0.00	\$0.00	\$0.00	-\$7,912.00	\$906,559.00
Dec-15	\$906,559.00	\$0.00	\$0.00	\$0.00	-\$33,227.00	\$873,332.00
Mar-16	\$873,332.00	\$0.00	\$0.00	\$0.00	\$2,467.00	\$875,799.00
Jun-16	\$875,799.00	\$0.00	\$0.00	\$0.00	-\$26,801.00	\$848,998.00
Sep-16	\$848,998.00	\$0.00	\$0.00	\$0.00	\$52,733.00	\$901,731.00
Dec-16	\$901,731.00	\$0.00	\$0.00	\$0.00	-\$4,795.96	\$896,935.04
Mar-17	\$896,935.04	\$0.00	\$0.00	\$0.00	-\$9,247.79	\$887,687.25
Jun-17	\$887,687.25	\$0.00	\$0.00	\$0.00	-\$5,962.99	\$881,724.26
Sep-17	\$881,724.26	\$0.00	\$0.00	\$0.00	\$1,242.05	\$882,966.31
Dec-17	\$882,966.31	\$0.00	\$0.00	\$0.00	-\$855.83	\$882,110.48
Mar-18	\$882,110.48	\$0.00	\$0.00	\$0.00	\$28,640.62	\$910,751.10
Jun-18	\$910,751.10	\$0.00	\$0.00	\$0.00	\$18,210.43	\$928,961.53
Sep-18	\$928,961.53	\$0.00	\$0.00	\$0.00	\$45,909.08	\$974,870.61
Dec-18	\$974,870.61	\$0.00	-\$17,987.98	-\$17,987.98	\$21,654.76	\$978,537.39
Mar-19	\$978,537.39	\$0.00	\$0.00	\$0.00	\$15,679.21	\$994,216.60

CBIZ IAS, LLC

**TerraCap Partners III** **September 30, 2019**

The objective of TerraCap Partners III is to generate attractive risk-adjusted returns while emphasizing capital preservation by investing in value-add investments in real estate and real estate-backed assets with a focus on opportunities in Florida and the Southeast. The Fund will seek to acquire mainstream property types - primarily office, flex, hospitality, multi-family and retail. The Fund's emphasis will be on well-established and well-built properties in strong locations, where the Investment Manager believes that potential for future competition will be limited and acquisition price has been well below the cost of replacement.

Cash Flows						
9 Years Ending September 30, 2019						
Quarter Ending	Beginning Market Value	Contributions	Withdrawals	Net Cash Flow	Net Investment Change	Ending Market Value
Jun-19	--	\$0.00	\$0.00	\$0.00	\$27,547.55	\$27,547.55
Sep-19	\$27,547.55	\$1,070,725.45	\$0.00	\$1,070,725.45	\$9,972.00	\$1,108,245.00

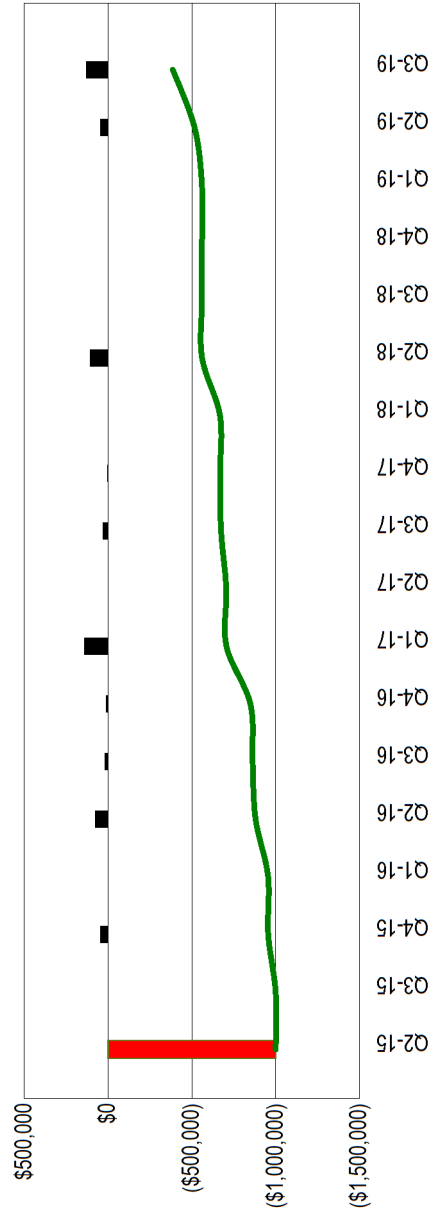


## Non-Marketable Securities Overview

As of September 30, 2019

Account Type	Account	Vintage Year	Commitment	Cumulative Takedown Distributions	Value (RV)	Total Value (RV + Dist)	Unfunded Commitment	DPI (dist / takedowns)	RVPI (RV / takedowns)	TVPI (TV / takedowns)	Takedown (takedowns / commit)	IRR
Real Estate	TerraCap Partners IV	2019	--	\$1,070,725	\$0	\$1,108,245	--	0.00%	103.50%	103.50%	--	4.78
<b>Total Account</b>				<b>\$1,070,725</b>	<b>\$0</b>	<b>\$1,108,245</b>	<b>--</b>	<b>0.00%</b>	<b>103.50%</b>	<b>103.50%</b>	<b>--</b>	<b>4.78</b>

## Non-Marketable Investments Cash Flow Analysis From June 1, 2015 To September 30, 2019

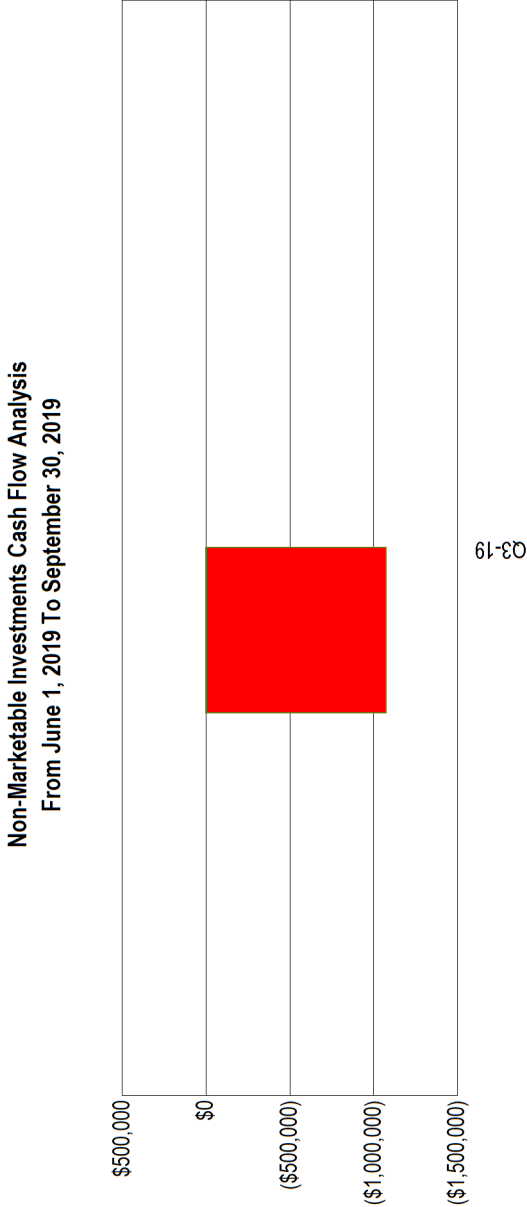


**TerraCap Partners IV** **September 30, 2019**

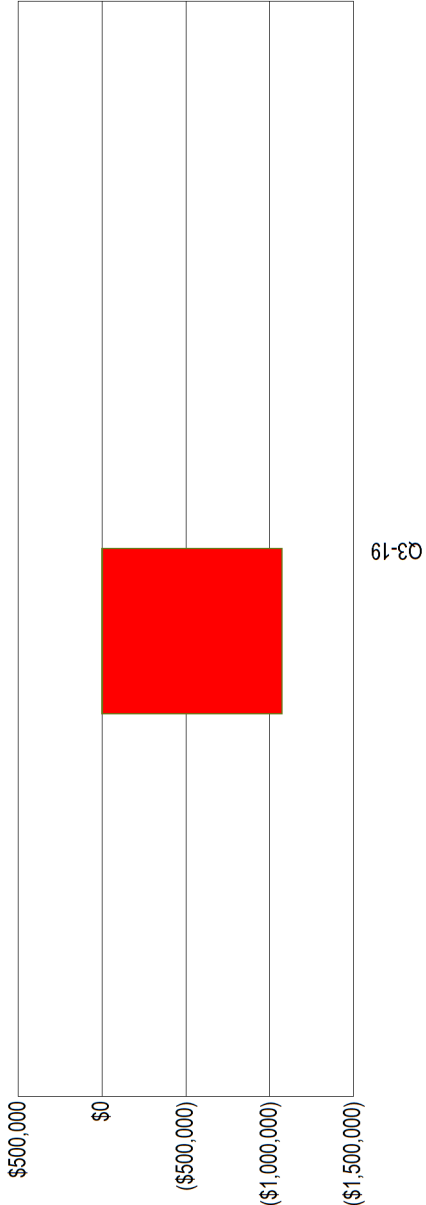
The objective of TerraCap Partners III is to generate attractive risk-adjusted returns while emphasizing capital preservation by investing in value-add investments in real estate and real estate-backed assets with a focus on opportunities in Florida and the Southeast. The Fund will seek to acquire mainstream property types - primarily office, flex, hospitality, multi-family and retail. The Fund's emphasis will be on well-established and well-built properties in strong locations, where the Investment Manager believes that potential for future competition will be limited and acquisition price has been well below the cost of replacement.

Quarter Ending	Beginning Market Value	Contributions	Withdrawals	Net Cash Flow	Net Investment Change	Ending Market Value
Jun-19	\$994,216.60	\$0.00	\$0.00	\$0.00	\$49,703.65	\$1,043,920.25
Sep-19	\$1,043,920.25	\$0.00	\$0.00	\$0.00	\$17,634.69	\$1,061,554.94

Non-Marketable Securities Overview												
As of September 30, 2019												
Account Type	Account	Vintage Year	Commitment	Cumulative Takedown Distributions	Cumulative Value (RV)	Total Value (RV + Dist)	Unfunded Commitment	DPI (dist / takedowns)	RVPI (RV / takedowns)	TVPI (TV / takedowns)	Takedown (takedowns / commit)	IRR
Real Estate	TerraCap Partners IV	2019	--	\$1,070,725	\$0	\$1,108,245	--	0.00%	103.50%	103.50%	--	4.78
Total Account			--	\$1,070,725	\$0	\$1,108,245	--	0.00%	103.50%	103.50%	--	4.78



Non-Marketable Investments Cash Flow Analysis  
From June 1, 2019 To September 30, 2019



## Manager Expense Summary

September 30, 2019

	Investment Vehicle	Custodian	Mgmt Fee/Expense Ratio
<b>Domestic Equity</b>			
Wells Fargo Advantage Growth Fund Instl	Mutual Fund	Wells Fargo	0.75%
Eastern Shore Capital Small Cap Core	Commingled Fund	SEI Trust	0.90%
Diamond Hill Capital Management Large Cap Value	Mutual Fund	Wells Fargo	0.58%
Sustainable Insight Capital Management	Separate Account	Wells Fargo	0.65%
<b>International Equity</b>			
Oppenheimer International Growth Fund	Mutual Fund	Wells Fargo	0.89%
LMCG Emerging Markets Equity	Commingled Fund	Wells Fargo	0.85%
<b>Fixed Income</b>			
Brandywine Global Opportunistic Fixed Income Fund	Commingled Fund	Wells Fargo	0.45%
Johnson Institutional Core Bond Fund	Mutual Fund	Wells Fargo	0.24%
Aberdeen Emerging Markets Debt Fund	Mutual Fund	Wells Fargo	0.90%
Courage Credit Opportunities III	Private Debt	Citi*	1.75%/20%
<b>Alternatives</b>			
Ironwood Institutional Multi-Strategy Fund LLC	Commingled Fund	State Street*	1.20%
<b>Real Estate</b>			
BTG Pactual Global Timberland Resources Fund (US), LLC	Private Equity	Regions Bank*	1.00%
TerraCap Partners III	Private Real Estate	American Momentum	1.5%/20%
TerraCap Partners IV	Private Real Estate	American Momentum	1.5%/20%

CBIZ IAS, LLC

**Notes:**

Universe Legend

1st Quartile - Orange

2nd Quartile - Yellow

3rd Quartile - Blue

4th Quartile - Grey

**APPENDIX 4**  
Asset Allocation  
Analysis

# Scenario Assumptions

March 03, 2020 | 1/8

			CONSTRAINTS	
NAME	RETURN	STDEV	MIN	MAX
ALTERNATIVES				
HFRI Fund of Funds Composite Index	6.0%	4.7%	0.0%	25.0%
DOMESTIC EQUITY				
US Large Cap Equity	6.0%	17.1%	10.0%	60.0%
US Small Cap Equity	7.0%	22.0%	0.0%	25.0%
FIXED INCOME				
Cash	1.8%	1.1%	0.0%	25.0%
US Core Fixed Income	2.5%	3.4%	5.0%	50.0%
International Fixed Income	3.7%	5.3%	0.0%	15.0%
Private Credit/(US High Yield)	4.3%	6.5%	0.0%	10.0%
INTERNATIONAL EQUITY				
International Equity	7.5%	19.9%	0.0%	25.0%
Emerging Markets Equity	8.5%	25.4%	0.0%	10.0%
UNGROUPED				
Real Estate	7.5%	7.4%	0.0%	10.0%

Allocation Case: GBRA



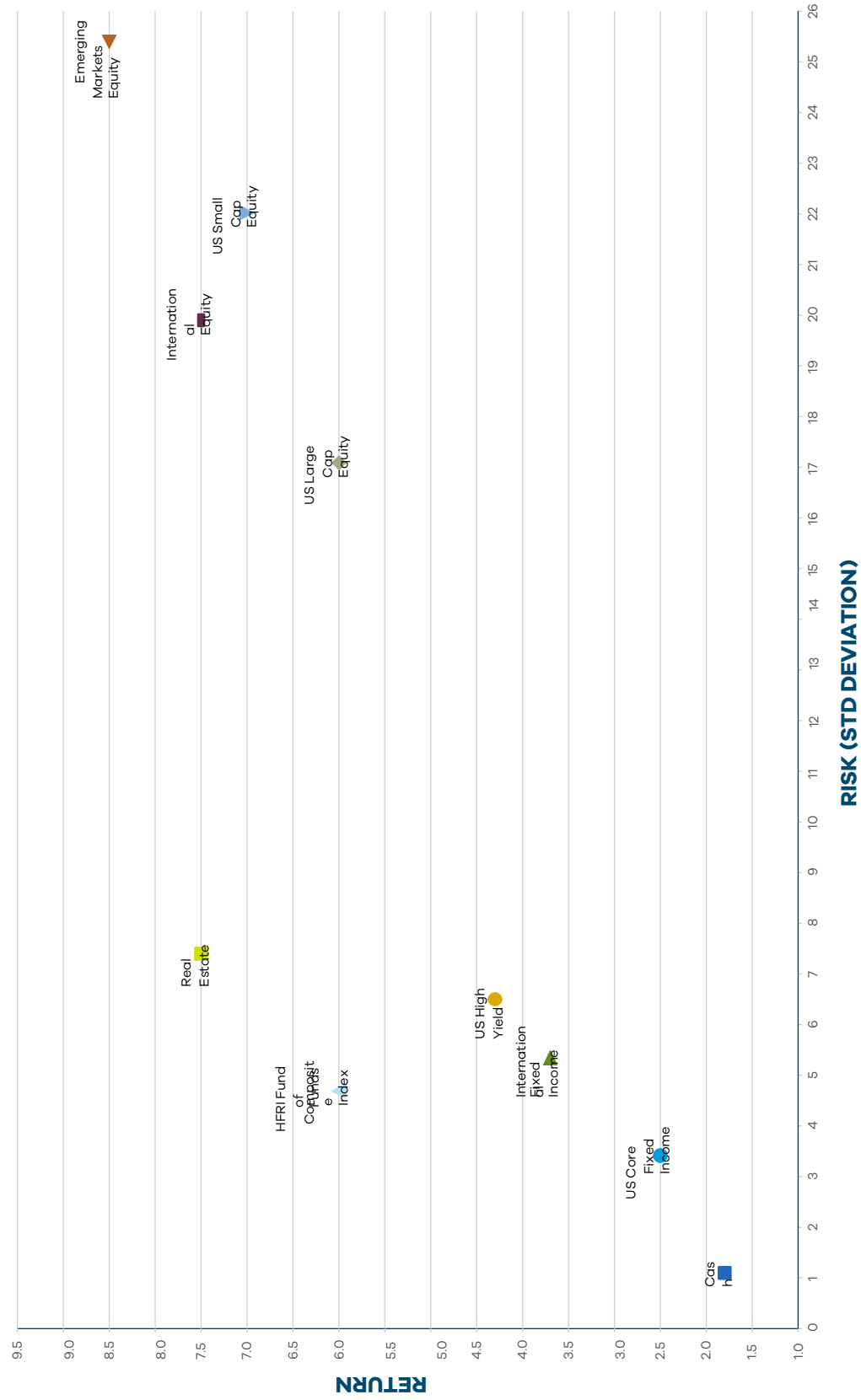
# Scenario Assumptions — Correlation Matrix

March 03, 2020 | 2/8

ASSETS	A	B	C	D	E	F	G	H	I	J
<b>A</b> Cash	1.0	0.0	0.1	(0.0)	(0.0)	0.0	0.1	0.0	(0.0)	(0.1)
<b>B</b> US Core Fixed Income	0.0	1.0	(0.0)	(0.1)	(0.2)	0.0	0.0	0.7	0.2	0.2
<b>C</b> HFRI Fund of Funds Composite Index	0.1	(0.0)	1.0	0.7	0.6	0.8	0.8	0.2	0.4	0.6
<b>D</b> US Large Cap Equity	(0.0)	(0.1)	0.7	1.0	0.9	0.9	0.8	0.2	0.7	0.7
<b>E</b> US Small Cap Equity	(0.0)	(0.2)	0.6	0.9	1.0	0.8	0.7	0.1	0.7	0.7
<b>F</b> International Equity	0.0	0.0	0.8	0.9	0.8	1.0	0.9	0.4	0.6	0.7
<b>G</b> Emerging Markets Equity	0.1	0.0	0.8	0.8	0.7	0.9	1.0	0.3	0.6	0.7
<b>H</b> International Fixed Income	0.0	0.7	0.2	0.2	0.1	0.4	0.3	1.0	0.3	0.3
<b>I</b> Real Estate	(0.0)	0.2	0.4	0.7	0.7	0.6	0.6	0.3	1.0	0.6
<b>J</b> Private Credit/(US High Yield)	(0.1)	0.2	0.6	0.7	0.7	0.7	0.7	0.3	0.6	1.0

# Scenario Return & Risk Assumptions

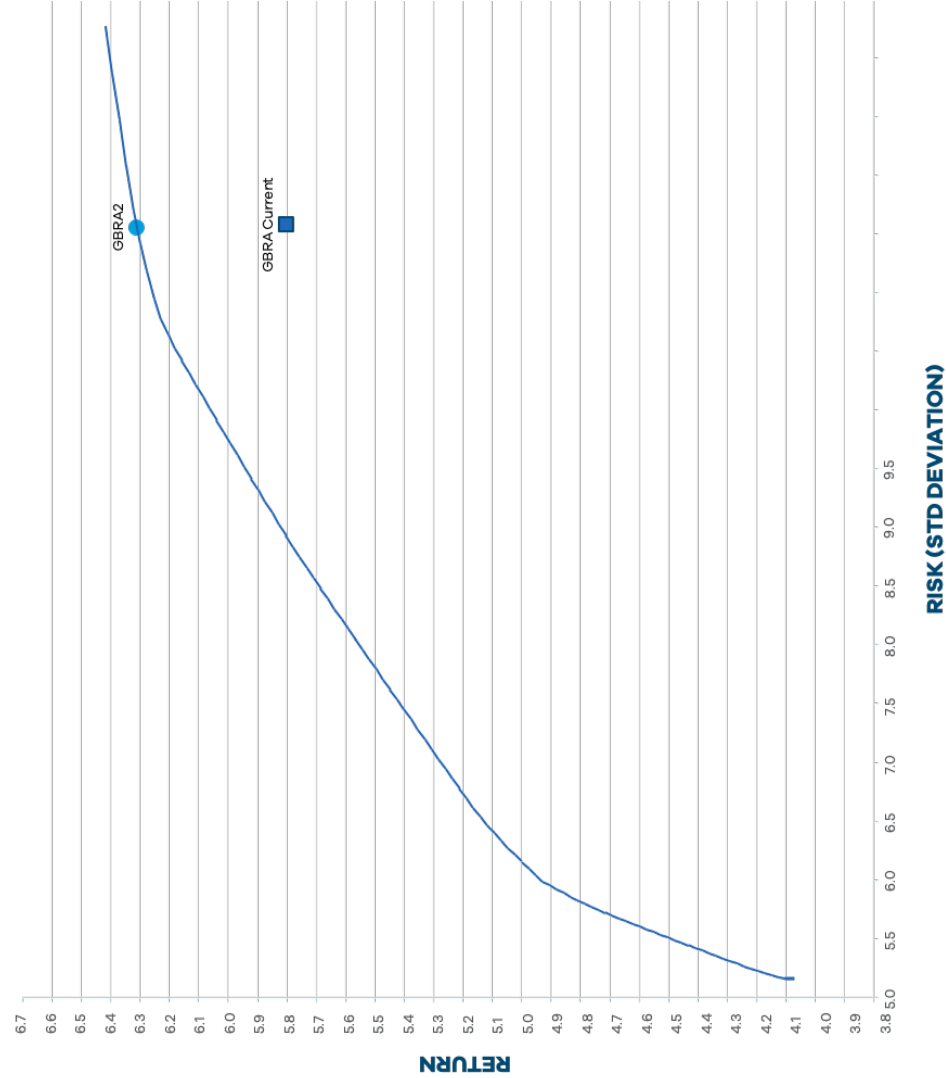
March 03, 2020 | 3/8



Proprietary & Confidential

# Efficient Frontier

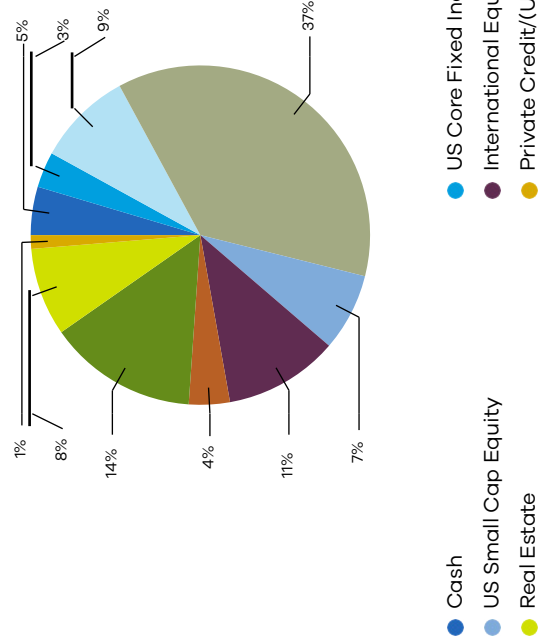
March 03, 2020 | 4/8



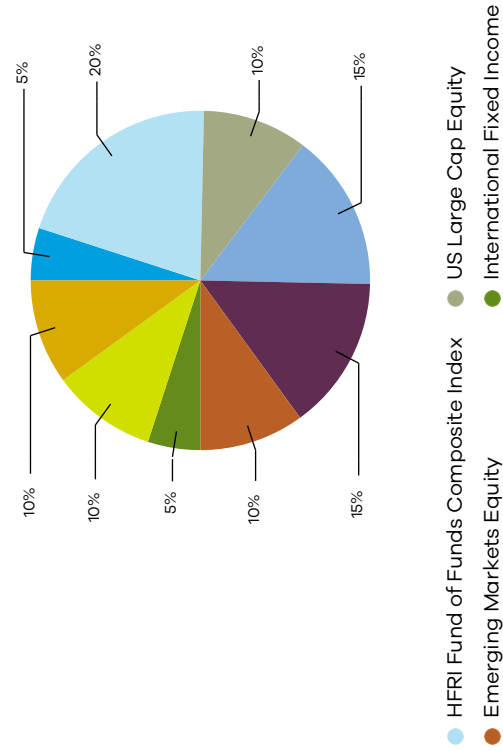
# Portfolio Allocations

March 03, 2020 | 5/8

**GBRA Current**



**GBRA2**



	GBRA CURRENT	GBRA2
Return	5.8%	6.3%
Standard Deviation	11.6%	11.6%
Sharpe Ratio	0.30	0.34

# Portfolio Allocations

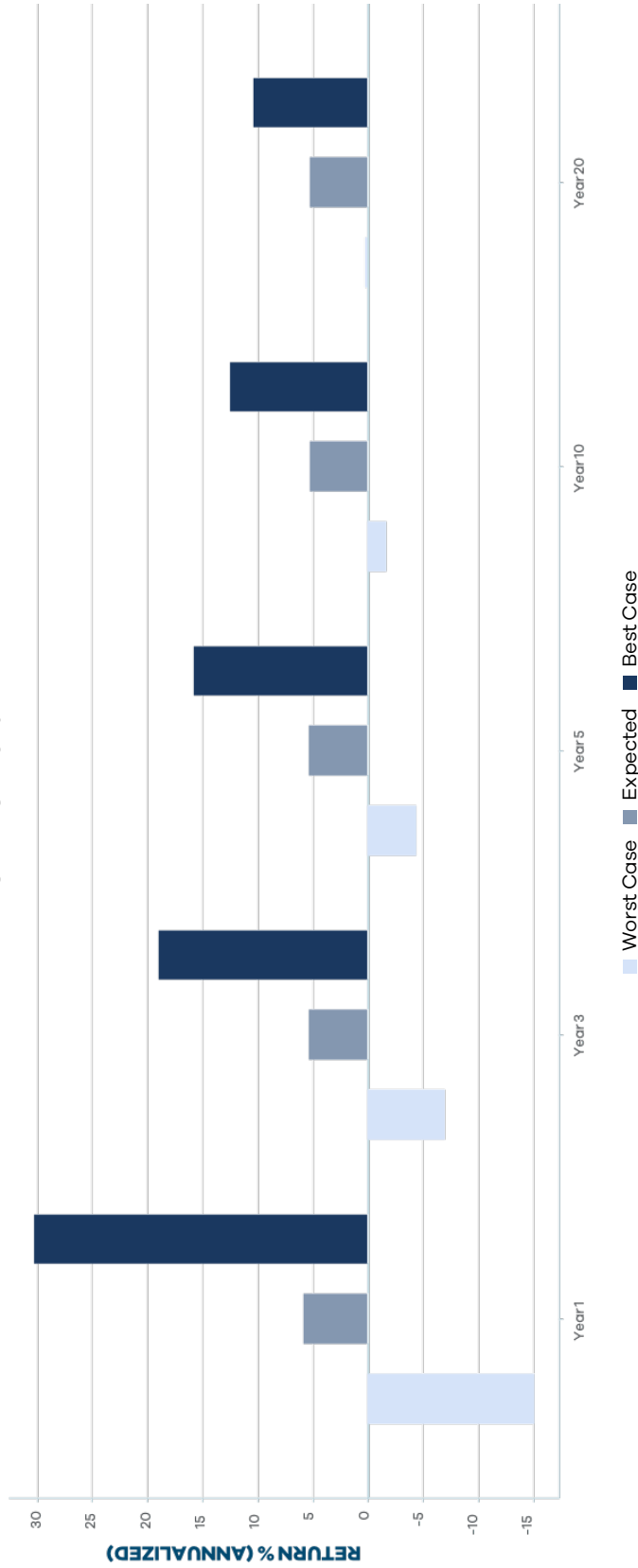
March 03, 2020 | 6/8

ALLOCATIONS WEIGHTS	GBRA CURRENT	GBRA2
Cash	4.6	0.0
US Core Fixed Income	3.4	5.0
HFRI Fund of Funds Composite Index	9.1	20.3
US Large Cap Equity	36.8	10.0
US Small Cap Equity	7.4	15.0
International Equity	10.9	14.7
Emerging Markets Equity	3.9	10.0
International Fixed Income	14.2	5.0
Real Estate	8.4	10.0
Private Credit/(US High Yield)	1.3	10.0
<b>Return</b>	5.8	6.3
<b>Standard Deviation</b>	11.6	11.6
<b>Sharpe Ratio</b>	0.30	0.34

# Portfolio Range of Returns

March 03, 2020 | 7/8

Range of Returns  
GBRA Current

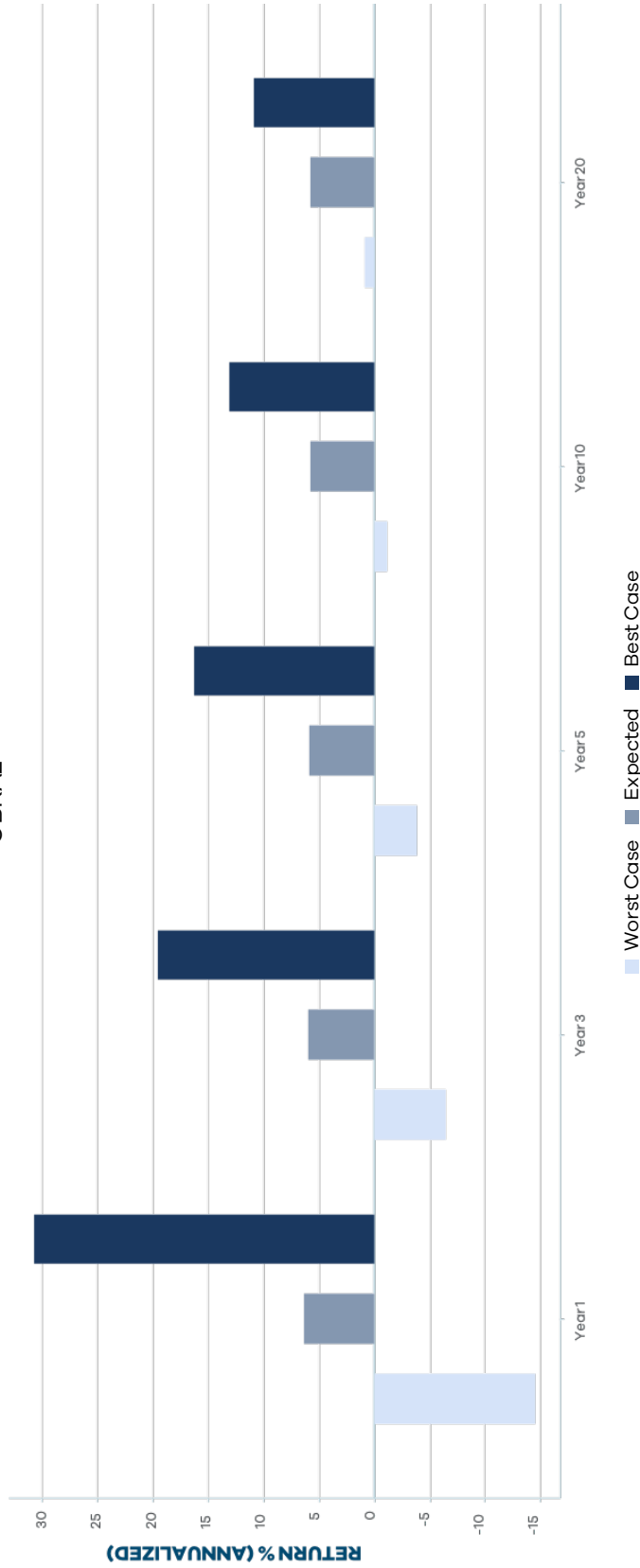


	ONE YEAR	THREE YEAR	FIVE YEAR	TEN YEAR	TWENTY YEAR
Worst Case	(15.1%)	(7.1%)	(4.4%)	(1.7%)	0.3%
Expected	5.8%	5.4%	5.3%	5.2%	5.2%
Best Case	30.3%	19.0%	15.7%	12.5%	10.3%
Expected Risk	11.6%	6.7%	5.1%	3.6%	2.6%

# Portfolio Range of Returns

March 03, 2020 | 8/8

Range of Returns  
GBRA2



	ONE YEAR	THREE YEAR	FIVE YEAR	TEN YEAR	TWENTY YEAR
Worst Case	(15.1%)	(7.1%)	(4.4%)	(1.7%)	0.3%
Expected	5.8%	5.4%	5.3%	5.2%	5.2%
Best Case	30.3%	19.0%	15.7%	12.5%	10.3%
Expected Risk	11.6%	6.7%	5.1%	3.6%	2.6%

# **APPENDIX 5**

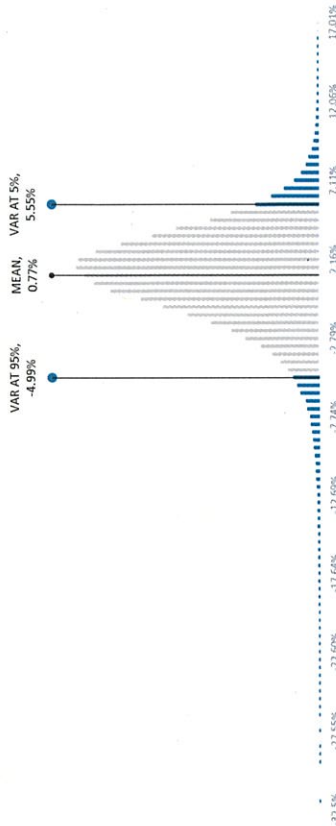
## Risk Plus Analysis



# SUMMARY

## GBRA PORTFOLIO RISK SNAPSHOT

### SIMULATIONS DISTRIBUTION CHART



### SIMULATED PORTFOLIO RISK STATISTICS

TRADITIONAL			TAIL MEASURES		
StDev	Ann. StDev	Mean	Ann. Mean	Var 95	ETR 95
3.38	11.70	0.77	9.22	-4.99	6.97

TOP 10 FACTORS BY SYSTEMATIC RISK (STDEV)			TOP 10 FACTORS BY SYSTEMATIC RISK (ETL)		
Factor	PC to StDev	MC to StDev	Factor	PC to ETL	MC to ETL
<b>TOTAL SYSTEMATIC RISK</b>	<b>99.36</b>		<b>TOTAL SYSTEMATIC RISK</b>	<b>100.01</b>	
Russell 3000	68.22	3.76	Russell 3000	67.99	8.88
MSCI EAFE USD	23.71	4.52	MSCI EAFE USD	24.92	11.26
Crossover EM Sovereign &	3.40	1.22	Crossover EM Sovereign &	3.23	2.75
Asian Convertibles	3.33	1.94	Asian Convertibles	3.13	4.32
MSCI Small Minus Large US	2.21	0.92	MSCI Small Minus Large US	1.56	1.54
Euro	1.27	-1.51	Euro	1.30	-3.65
S&P GSCI Index	0.79	3.92	S&P GSCI Index	0.98	11.43
ML Global Govt Bond II USD	0.33	0.38	ML Global Govt Bond II USD	0.31	5.34
Global EM Credit Latin	0.32	2.29	Global EM Credit Latin	0.29	0.79
S&P GSCI Crude Oil USD	0.14	5.35	S&P GSCI Crude Oil USD	0.17	15.60
<b>SPECIFIC RISK</b>	<b>0.64</b>		<b>SPECIFIC RISK</b>	<b>-0.01</b>	

### STRESS TEST SNAPSHOT

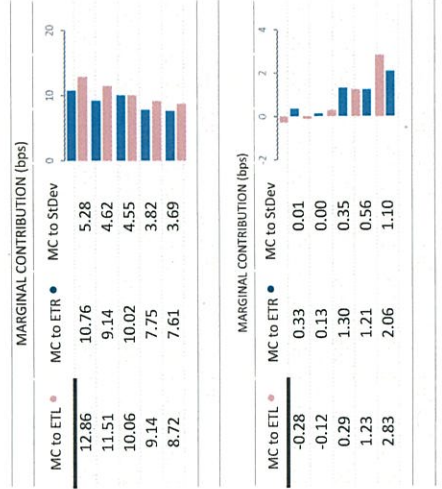
TOP LOSER BY STRESS SCENARIO		SCENARIOS BY PORTFOLIO IMPACT	
Asset Return	Portfolio Return		
MSCI EM-ND	-42.41	2008 Lehman Blow-Up	-25.81
Russell 2000	-33.74	2002 Market Downturn	-22.56
Russell 2000	-35.85	1987 Black Monday	-21.24
Russell 2000	-27.18	1998 Russian Crisis	-15.48
MSCI EM-ND	-20.25	2001 WTC Attack	-13.09
Russell 2000	-20.61	1990 Kuwait Invasion	-11.35
Russell 3000 Growth	-18.16	2001 Nasdaq	-10.03
Russell 3000 Growth	-11.82	1997 - 1998 Asian Crisis	-7.00
MSCI EM-ND	-8.65	2008 January Crisis	-4.22
Russell 2000	-1.70	2007 August Crisis	-0.49
Bloomberg Barclays Global Aggregate	-1.74	2005 Katrina	0.17

### PORTFOLIO RISK CONTRIBUTION SNAPSHOT

TOP 5 CONTRIBUTORS BY MARGINAL CONTRIBUTION TO ETL			PERCENTAGE CONTRIBUTION (%)		
	Weight		PC to ETL	PC to StDev	PC to Return
MSCI EM-ND	5.99		9.62	9.24	7.99
MSCI ACWI ex-US-ND	10.80		15.53	14.16	10.41
Russell 2000	10.59		13.30	15.21	12.55
Russell 3000 Growth	26.18		29.90	29.08	32.09
Russell 1000 Value	23.98		26.14	26.18	24.74
<b>TOTAL</b>	<b>77.54</b>		<b>94.48</b>	<b>93.87</b>	<b>87.79</b>

TOP 5 DIVERSIFIERS BY MARGINAL CONTRIBUTION TO ETL			PERCENTAGE CONTRIBUTION (%)		
	Weight		PC to ETL	PC to StDev	PC to Return
Bloomberg Barclays US Aggregate	1.68		-0.06	0.08	0.73
Fidelity: Money Markets USD	1.51		-0.02	0.03	0.27
NCREIF Timberland	6.47		0.24	1.20	4.85
Bloomberg Barclays Global Aggregate	4.30		0.66	0.75	1.76
HFN Fund of Funds Aggregate Index	3.85		1.36	1.14	1.29
<b>TOTAL</b>	<b>17.81</b>		<b>2.18</b>	<b>3.20</b>	<b>8.90</b>



# **APPENDIX 6**

## Funding Policy



**Retirement Plan for Employees  
Of the Guadalupe-Blanco River Authority  
“Defined Benefit Pension Plan”**

**FUNDING POLICY**

**DEFINED BENEFIT PENSION PLAN BACKGROUND**

The Defined Benefit Pension Plan (DB Plan) was established and became effective January 1, 1966 for eligible employees. The DB Plan was amended a number of times through the years and was restated in 2013. Effective December 31, 2010, the DB Plan was closed to new participants. On December 31, 2018, the DB Plan was fully frozen. Beginning January 1, 2019, all employees were enrolled in the Texas County and District Retirement System (TCDRS).

As part of the freezing of the DB Plan, a supplemental benefit was authorized for participants in the DB Plan in recognition that the total combined benefit that a participant would receive from both the DB Plan and the TCDRS retirement plan may be less than the benefit the participant would have received had the DB Plan not been frozen.

**PURPOSE OF FUNDING POLICY**

The purpose of a funding policy is to establish goals toward funding for the DB Plan in order to meet current and future benefit payments as well as provide flexibility in the face of budgetary challenges, market conditions, and actuarial estimates. A funding policy helps to provide reasonable assurance that the cost of benefits will be funded in an equitable and sustainable manner.

In order to provide assistance to public retirement systems, the Texas Pension Review Board published pension funding guidelines for meeting long-term pension obligations, most recently amended in 2017, adding a recommendation that organizations develop a funding policy. The Government Finance Officers Association also recommends that every governmental entity that offers defined benefit pension plans formally adopt a funding policy.

In addition, Texas state law now requires the governing board of a public retirement system to adopt a funding policy. For more information, see the Legal Requirement section later in this Policy.

## **COMPONENTS OF FUNDING POLICY**

### ***Risk Management***

A retirement system faces many types of risk. While risk cannot be completely eliminated, measures should be in place to mitigate risk to the extent possible. Included below is a listing of risks facing the Plan, followed by the measures that are currently in place for mitigation. Risk definitions are courtesy of the Texas Pension Review Board's Risk Management training course.

- *Governance/fiduciary risk* – risk of breach of fiduciary responsibility including poor decision-making resulting from a failure to follow established and reasonable processes, fraud, or conflicts of interest; also, insufficient authority given to boards to make decisions
  - Oversight by Board of Directors
  - Acknowledgement and prioritization by Board of Directors and management of the importance of sufficient funding and engaged monitoring
  - Establishment and ongoing oversight by Retirement and Benefit Committee
  - Education and training of Committee members
  - Completion of pension plan financial audit by independent accounting firm
  - Providing transparency into the affairs of the retirement plan
- *Investment risk* – risk of underperformance of invested assets
  - Adoption of investment policy
  - Diversification of investment portfolio
  - Establishment of target allocations for investment classes
  - Contracting with qualified and experience investment consulting firm
  - Oversight by and decision making of Retirement and Benefit Committee
- *Funding risk* – risk of insufficient assets to meet liabilities, including risk of non-payment or underpayment of contributions
  - Oversight by Retirement & Benefit Committee
  - Ongoing reviews by management of investments and cash position
  - Scrutinizing investment options; due diligence in selection process; advice and monitoring by investment consultant
  - Full evaluation of benefit options and changes
  - Adoption and implementation of Funding Policy
  - Establishment of funding target and liability amortization period
- *Actuarial risk* – risk of relying on inappropriate actuarial methods and assumptions
  - Contracting with actuarial firm with solid reputation for accuracy and adherence to professional standards
  - Documenting the actuarial methods and assumptions used
  - Continual review and evaluation of actuarial methods and assumptions employed

- *Liquidity risk* – risk of being unable to sell an asset quickly enough to avert a loss, which can result in the inability to make benefit distributions or other payments when they come due, or to employ the asset in a desired manner
  - Oversight by Retirement & Benefit Committee
  - Ongoing reviews by management of investments and cash position
  - Involvement and advice from investment consultant
- *Operational risk* – risk related to the failure of internal or outsourced processes including benefits calculation, recordkeeping, information technology systems, etc.
  - Contracting with qualified and experienced designated trustee and actuarial firms
  - Management oversight of contracts
  - Completion of pension plan financial audit by independent accounting firm
  - Staying informed of changes in legal and regulatory environments as well as investment markets & the economic landscape
- *Data security risk* – risk related to storing electronic information including data breaches, hacks, etc.
  - Inclusion of clauses within contracts related to data protection systems
  - Validation by management that contracted firms have sufficient systems in place to prevent internal and external cyber threats
  - Insurance coverage for cybersecurity

In addition to the measures detailed above, employing the practices outlined in this Policy will serve to further reduce these risks.

### ***Prioritization of DB Plan Contributions***

The mission of GBRA is “to support responsible watershed protection and stewardship, provide quality operational service, and a commitment to promote conservation and educational opportunities in order to enhance quality of life for those we serve”.

During any budgetary process, there are many elements that, in some cases, compete for the same dollars within the budget. However, in providing high quality services to customers and in order to fulfill GBRA’s mission, investment in the company’s greatest assets, its employees, is essential. Therefore, contributions to the DB Plan will have the same budget priority as other salaries and wages.

### ***Plan Costs & Fees***

In addition to the governance of the DB Plan by the Retirement & Benefit Committee, the management and oversight of a pension plan requires the hiring of external companies having expertise in several areas. These services come at a cost and are borne either by the DB Plan itself or paid for through GBRA’s annual operating budget.

It will be GBRA’s practice to fund administrative & trustee services, investment consulting, and legal fees through GBRA’s annual operating budget. Investment management fees will be paid by the DB Plan.



### ***Actuarial Methodologies, Assumptions, & Amortization***

Generally speaking, it will be GBRA's practice to implement conservative methodologies and assumptions to proactively plan for and address the obligations of the DB Plan. The following represents a summary. More details are available in the annual actuarial valuation performed by Rudd & Wisdom, GBRA's contracted actuarial firm.

#### **Actuarial Cost Method**

An actuarial cost method is a procedure that identifies a series of annual contributions that will fund anticipated plan payments. However, for a frozen plan, no actuarial cost method is required. The primary calculations are the actuarial present value of future benefits for benefits currently in pay status and benefits not yet taken (deferred). The unfunded actuarial liability (UAL) is the amount by which the present value of future benefits exceeds the current plan assets. The UAL is recalculated each time a valuation is performed. Experience gains and losses, which represent deviations of the UAL from its expected value based on the prior valuation, are determined at each valuation and are amortized as part of the newly calculated UAL.

#### **Actuarial Value of Assets & Smoothing of Gains and Losses**

Assets are valued at market value as determined by the DB Plan directed trustee, with an adjustment made to uniformly spread actuarial gains or losses over a five year period (as measured by actual market value investment return vs. assumed market value investment return). Principal Retirement & Income Solutions (formerly Wells Fargo Institutional Retirement & Trust) currently serves as the directed trustee.

#### **Assumptions**

The following actuarial assumptions will be used but may be changed from time to time based on updated information and changes in trends:

- Salary increases - 2.75%
- Investment rate of return - 6.75%
- Employee payroll growth – 2.75%
- Mortality rates - PubG-2010 (general employees of public retirement systems) using the projection scale MP-2018

#### **Amortization Method & Period**

A closed amortization period will be used for the DB Plan. This means the UAL will be amortized by the end of the designated period as opposed to resetting the amortization over the same designated period each time the liability is recalculated.

Amortization periods for public pension plans generally range from 15 to 30 years. In a Standard & Poor's publication, *Assessing U.S. Public Finance Pension And Other Postemployment Obligations For GO Debt, Local Government GO Ratings, And State Ratings*, Standard & Poor's suggests that the goal of pension plans should be to amortize the pension liability over 20 years or less.

It is GBRA's plan to amortize the total liability of the DB Plan over the 10 year period that began January 1, 2019.

### Contribution Amount

Participants in the DB Plan do not make individual contributions - GBRA is the sole contributor. The Plan has been closed to new participants since 2010 and the Plan was frozen in 2018 eliminating the accrual of additional benefits, with the exception of the supplemental benefit. Therefore, neither a level dollar contribution nor a level percent of payroll contribution would prove helpful in determining recommended annual contribution levels. Instead, the determination of the annual contribution will be based upon the remaining years of amortization of the liability. In addition to the annual contribution, supplemental contributions are recommended when funds are available and deemed appropriate.

### Actuarial Valuation Frequency

It has been GBRA's procedure, and considered best practice, to require the preparation of an actuarial valuation on an annual basis. However, since the advent of a fully frozen plan, there may come a time when the frequency of valuations is adjusted. GBRA management will evaluate the needs of the DB Plan and related costs of annual valuations in making that determination.

### ***Investment Policy & Asset Allocation Strategy***

An investment policy serves to outline the investment philosophy and strategy of the DB Plan and provide guidance for future decisions to the Board of Directors, Retirement & Benefit Committee members, and GBRA staff serving as administrators of the DB Plan. It is also provided to ensure a clear understanding and direction to the investment consultant and investment managers.

GBRA adopted an Investment Policy Statement on July 29, 2011 which continues to govern the activities of the DB Plan. The policy includes minimum and maximum ranges for exposure to different asset classes and includes planned targets for each class. The policy focuses, not only on cash flow needs to meet current monthly benefit obligations, but also seeks long term goals for ongoing obligations.

By reference, the Investment Policy Statement is made a part of this Funding Policy.

### ***Post-Retirement Benefit Increases***

The management and oversight of the DB Plan is an ongoing and evolving process that includes an emphasis on fiscal health and sound decision making. Any increase in benefits will be evaluated on specific case by case elements. Many considerations will be necessary before a decision can be reached including, but not limited to, the actuarial soundness of the DB Plan, its relationship to the targeted funding ratio, and stress testing of performance in down market conditions. The Board of Directors and Retirement & Benefit Committee will be fully involved in the decision making process.

### ***Funding Objectives & Target***

A retirement plan is considered fully funded when the Fiduciary Net Position as a percentage of the Total Pension Liability is equal to 100%. According to Standard & Poor's *U.S. Public Finance: U.S. State Ratings Methodology* published October 17, 2016 and republished October 7, 2019, an entity's "commitment to funding annual contributions that address the long-term pension

liability is a key credit consideration”. The publication assesses the plan’s liability in four categories based on its three-year average funded ratio as follows:

<b>Funded Ratio</b>	<b>Assessment</b>
90% or above	Strong
80-90%	Good
60-80%	Relatively Low
60% or below	Weak

It will be GBRA’s target to fund 110% of the Total Pension Liability. While this percentage can be defined as “over-funded”, which by nature is a conservative approach, once reached, this target allows for future flexibility due to volatility in the markets as well as responding to other economic constraints that may require a response.

GBRA anticipates that any favorable experience will help the plan attain full funding on or before the end of the closed amortization period. On the other hand, any adverse experience will increase the recommended annual contribution that will be evaluated by GBRA management and the Board of Directors. One possibility to deal with an unexpected increase would be to work with the actuarial firm in testing the effects of extending the closed amortization period to mitigate the effect on the employer contribution.

### **LEGAL REQUIREMENT**

The Texas Government Code 802.2011 created by Senate Bill 2224 during the 86<sup>th</sup> Legislative Session in 2019 requires the governing board of a Texas public retirement system to adopt a written funding policy by January 1, 2020. In addition to providing guidance to the Guadalupe-Blanco River Authority Board of Directors and the Retirement & Benefit Committee, this Funding Policy is intended to meet the requirements outlined in Texas statute.

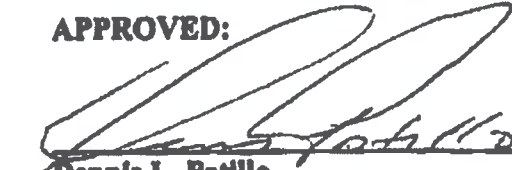
### **CHANGES TO FUNDING POLICY**

The adoption of this Funding Policy in no way restricts future modifications. However, any changes will require the approval from the Board of Directors.

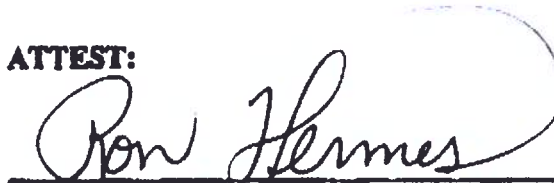


**ADOPTED BY THE BOARD OF DIRECTORS OF THE GUADALUPE-BLANCO RIVER  
AUTHORITY AT A REGULAR MEETING HELD ON THE 20<sup>th</sup> DAY OF NOVEMBER,  
2019.**

**APPROVED:**

  
**Dennis L. Patillo**  
**Chairman, Board of Directors**

**ATTEST:**

  
**Ron Hermes**  
**Secretary/Treasurer Pro-Tem, Board of Directors**

## Appendix:

### 10 Year Historical Contributions Defined Benefit Pension Plan

Calendar Year	Funded Ratio <small>as of January 1</small>	Recommended Contribution	Supplemental Contribution	Total Contribution	% of Payroll	% of Payroll <small>(all retirement plans)*</small>
2019	86.9%	\$653,540	----- 2019 - data not yet finalized and available -----			

2018	85.6%	\$1,128,049	\$0	\$1,128,049	9.8 %	13.5 %
2017	84.9%	\$1,067,716	\$0	\$1,067,716	9.4 %	13.2 %
2016	85.7%	\$1,038,202	\$300,000	\$1,338,202	12.3 %	15.4 %
2015	86.3%	\$1,033,464	\$700,000	\$1,733,464	17.4 %	20.6 %
2014	83.4%	\$984,302	\$700,000	\$1,684,302	18.0 %	20.9 %
2013	79.4%	\$993,893	\$600,000	\$1,593,893	18.1 %	20.9 %
2012	76.6%	\$1,011,297	\$500,000	\$1,511,297	17.4 %	20.0 %
2011	75.3%	\$1,013,649	\$600,000	\$1,613,649	19.1 %	21.4 %
2010	58.3%	\$1,020,832	\$3,000,000	\$4,020,832	46.3 %	48.5 %
2009	54.9%	\$970,248	\$500,000	\$1,470,248	16.8 %	18.9 %

\*Beginning January 1, 2011, newly hired employees became participants in the Defined Contribution 401(a) plan. GBRA contributed a percentage of employee's total compensation based on years of service from 5% to 7%. Employees did not contribute to this plan.

In addition, all employees were eligible to voluntarily participate in a 457(b) deferred compensation retirement plan. GBRA contributed 50% of the employee's salary deferral, up to a maximum of 3% of total compensation.

On January 1, 2019, all employees were enrolled in the TCDRS retirement plan. At that time, the DB Plan was frozen, the Defined Contribution 401(a) plan was terminated, and employer matching contributions to the 457(b) plan were discontinued.

**APPENDIX 7**  
Valuation Report



# RETIREMENT PLAN FOR EMPLOYEES OF GBRA

## ACTUARIAL VALUATION

AS OF JANUARY 1, 2019

OCTOBER 18, 2019



Rudd and Wisdom, Inc.

# Rudd and Wisdom, Inc.

## CONSULTING ACTUARIES

Mitchell L. Bilbe, F.S.A.  
Evan L. Dial, F.S.A.  
Philip S. Dial, F.S.A.  
Philip J. Ellis, A.S.A.  
Charles V. Faerber, F.S.A., A.C.A.S.  
Mark R. Fenlaw, F.S.A.  
Brandon L. Fuller, F.S.A.

Shannon R. Hatfield, A.S.A.  
Christopher S. Johnson, F.S.A.  
Oliver B. Kiel, F.S.A.  
Dustin J. Kim, A.S.A.  
Edward A. Mire, F.S.A.  
Rebecca B. Morris, A.S.A.  
Amanda L. Murphy, F.S.A.

Michael J. Muth, F.S.A.  
Khiem Ngo, F.S.A., A.C.A.S.  
Timothy B. Seifert, A.S.A.  
Chelsea E. Stewart, A.S.A.  
Raymond W. Tilotta  
Ronald W. Tobleman, F.S.A.  
David G. Wilkes, F.S.A.

October 18, 2019

GBRA Retirement and Benefit Committee  
Guadalupe-Blanco River Authority  
933 E. Court Street  
Seguin, Texas 78155

Re: Actuarial Valuation as of January 1, 2019

Dear Committee Members:

Enclosed is the report of the Actuarial Valuation of the Retirement Plan for Employees of the Guadalupe-Blanco River Authority as of January 1, 2019. The purpose of this report is to present the actuarial condition of the plan as of January 1, 2019 and to recommend the GBRA minimum contribution for the plan year ending December 31, 2019.

### ***Changes in Plan Provisions***

Effective December 31, 2018, the plan was amended to be frozen and to provide a supplemental benefit in addition to the frozen accrued benefit as of December 31, 2018. The supplemental benefit is designed to make up for the difference between (1) the projected benefit if the plan were to continue as it was before the amendment and (2) the sum of (a) the frozen accrued benefit in the plan and (b) the employer-funded portion of the benefit in the Texas County and District Retirement System (TCDRS) plan that began January 1, 2019. Plan provisions are outlined and summarized in Section V of this report.

### ***Review of Actuarial Assumptions***

As a part of each actuarial valuation, we review the actuarial assumptions used in the prior actuarial valuation. We analyze the economic assumptions every year. As the result of our overall review and our economic assumptions analysis, we have selected actuarial assumptions that we consider to be reasonable and appropriate for the plan for the long term future. Their selection complies with the applicable actuarial standards of practice. The actuarial methods and assumptions selected for this actuarial valuation are different from those used in the prior actuarial valuation of the ongoing plan. However, the assumptions are the same as those used in the special actuarial analysis as of December 31, 2017 of the plan as if it had been frozen on that date, with the exception of the mortality assumption.

The mortality assumption was changed from the RP-2000 Combined Healthy Mortality Tables projected to 2024 with Scale AA to the PubG-2010 (general employees) total dataset mortality tables for employees and for retirees, projected for mortality improvement generationally using

the projection scale MP-2018. The rationale for the change is to use the results of a new, first-ever study of the mortality of public employee pension plan participants by the Society of Actuaries. The new mortality assumption is more appropriate for the plan for the long-term future than the prior assumption.

### ***Funding Policy***

With the freezing of this plan and the adoption of the new plan in TCDRS for all employees, a new funding policy for this plan is needed. We have been told that the GBRA management intends to fully fund the plan over 10 years beginning January 1, 2019. They expect to contribute more in the first few years than the minimum required amount to fully fund the plan with level dollar contributions over that 10-year period. GBRA will contribute at least the minimum amount each year, usually in December, that will amortize the unfunded actuarial liability (UAL) over the closed 10-year period. Since the plan is frozen, there is no normal cost.

### ***Recommended Contribution***

Based on the funding policy above, we recommend a minimum contribution of \$653,540 for the plan year ending December 31, 2019 payable as of that date. Based on this actuarial valuation, this recommended annual contribution as a level dollar amount is expected to amortize the UAL of \$4,643,707 over the 10-year period that began January 1, 2019. This assumes there will be no future gains or losses or changes in assumptions. To the extent that there are future changes, the future valuations will modify the required contribution amount.

### ***Changes in the Unfunded Actuarial Liability***

In comparing this year's valuation to last year's valuation, the UAL decreased from \$5,140,374 to \$4,643,707 for the following reasons:

- The passing of one year with the experience following the assumptions would have resulted in a decrease in the UAL of \$464,423 because the contributions available to amortize the UAL were more than the assumed interest on the UAL for the plan year.
- The investment rate of return for 2018, net of all investment-related expenses paid by the plan, was (4.66)% based on the audited market value of assets for the plan year ending December 31, 2018. However, based on the smoothed actuarial value of assets from last year's valuation to this valuation, the net investment rate of return was 3.24%. Since that rate of return is less than the assumed rate of 7%, the UAL was increased by \$1,114,255 due to the adverse actuarial investment experience.
- The amending of the plan to freeze it as of December 31, 2018 and to add supplemental benefit provisions, along with all noninvestment experience, decreased the UAL by \$3,505,051.
- The change in the mortality assumptions increased the UAL by \$1,516,036.
- The change in the investment return assumption increased the UAL by \$842,516.

### *Variability in Future Actuarial Measurement*

Future actuarial measurements may differ significantly from the current measurements presented in this report due to such factors as the following:

- Plan experience differing from that anticipated by the current economic or demographic assumptions;
- Increases or decreases expected as part of the natural operation of the methodology used for these measurements;
- Changes in economic or demographic assumptions; and
- Changes in plan provisions.

Analysis of the potential range of such future measurements resulting from the possible sources of measurement variability is typically outside the scope of an annual actuarial valuation. However, if requested, additional analysis could be provided.

### *Summary*

As a result of our January 1, 2019 actuarial valuation of the GBRA Retirement Plan, we recommend a minimum contribution of at least \$653,540 for the plan year ending December 31, 2019. This minimum recommended year end contribution is based on a funding policy which is expected to be an adequate contribution arrangement. The actuarial valuation of the plan reported herein has been performed in accordance with appropriate actuarial methodology, actuarial code of conduct and actuarial standards of practice, and in accordance with funding guidelines established by the Texas Pension Review Board applicable to Texas public employee retirement systems.

Respectfully submitted,

RUDD AND WISDOM, INC.

*Mark R. Fenlaw*

Mark R. Fenlaw, F.S.A.

*Rebecca B. Morris*

Rebecca B. Morris, A.S.A.

MRF/RBM:nlg

Enclosures

cc: Mr. Randy Staats  
Ms. Susan Hubbert

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## TABLE OF CONTENTS

	<u>Page No.</u>
Section I: Certification of Actuarial Valuation.....	5
Section II: Summary of Actuarial Valuations.....	6
Section III: Plan Asset Information .....	7
Section IV: Actuarial Methods and Assumptions .....	10
Section V: Outline of Principal Plan Eligibility and Benefit Provisions .....	12
Section VI: Summary of Participant Data .....	15
Section VII: Definitions .....	17



## ***Section I – GBRA Retirement Plan***

### Certification of Actuarial Valuation (As of January 1, 2019)

At the request of the GBRA Retirement and Benefit Committee, we have performed an actuarial valuation of the plan as of January 1, 2019. The purpose of this report is to present the actuarial condition of the plan as of January 1, 2019 and to recommend a contribution for the January 1, 2019 to December 31, 2019 plan year based on a funding policy which is expected to be an adequate contribution arrangement.

We have relied on and based our valuation on employee data, pensioner data, and asset data provided by GBRA. The financial information we received for the plan year was from the final draft of the financial report of the plan as of December 31, 2018. We have used the actuarial methods and assumptions described in Section IV of this report. The actuarial valuation has been performed on the basis of the plan benefits described in Section V.

To the best of our knowledge, no material biases exist with respect to any imperfections in the census data provided. We have not audited the data provided but have reviewed it for reasonableness and consistency relative to the census data received for the January 1, 2018 actuarial valuation.

All current employees eligible to participate in the plan as of the valuation date and all other individuals who either are now receiving a monthly benefit or will later receive a vested deferred monthly benefit under the plan have been included in the valuation. Further, all plan benefits have been considered in the development of plan costs.

To the best of our knowledge, the actuarial information supplied in this report is complete and accurate. In our opinion the assumptions used, both in the aggregate and individually, are reasonably related to the experience of the plan and to reasonable expectations. The assumptions represent a reasonable estimate of anticipated experience of the plan over the long-term future, and their selection complies with the applicable actuarial standards of practice.

We certify that we are members of the American Academy of Actuaries who meet the Qualification Standards of the American Academy of Actuaries to render the actuarial opinions contained herein.

*Mark R. Fenlaw*

Mark R. Fenlaw, F.S.A.

*Rebecca B. Morris*

Rebecca B. Morris, A.S.A.

## *Section II – Summary of Actuarial Valuations*

	January 1, 2018	January 1, 2019
<b>1. Participant Census at Valuation Date</b>		
a. Covered employees	88	79
b. Vested terminated due deferred benefit	41	43
c. Retirees and beneficiaries in pay status	<u>81</u>	<u>88</u>
d. Total	210	210
<b>2. Projected Active Participant Compensation for Plan Year Following the Valuation Date</b>	\$ 6,450,100	N/A
<b>3. Actuarial Present Value of Future Benefits</b>		
a. Active participants	\$ 21,854,387	\$ 15,947,143
b. Inactive participants	<u>15,924,687</u>	<u>19,597,055</u>
c. Total	\$ 37,779,074	\$ 35,544,198
<b>4. Actuarial Present Value of Future Normal Cost</b>	\$ 2,182,244	\$ 0
<b>5. Actuarial Liability (Item 3e – Item 4)</b>	\$ 35,596,830	\$ 35,544,198
<b>6. Actuarial Value of Assets</b>	\$ 30,456,456	\$ 30,900,491
<b>7. Unfunded Actuarial Liability (UAL) (Item 5 – Item 6)</b>	\$ 5,140,374	\$ 4,643,707
<b>8. GBRA Minimum Contribution to be Paid December 31</b>		
a. Normal cost	\$ 303,800	\$ 0
b. UAAL amortization	<u>824,249</u>	<u>653,540</u>
c. Total	\$ 1,128,049	\$ 653,540
<b>9. Funded Ratio (Item 6 ÷ Item 5)<sup>1</sup></b>	85.6%	86.9%

<sup>1</sup> The funded ratio is not appropriate for assessing either the need for or the amount of future contributions or the adequacy of the funding policy of an ongoing plan. However, for a frozen plan, a funded ratio of 100% or more would indicate that contributions could cease. Subsequent experience would determine whether or not any additional contributions might be required.

### *Section III – Plan Asset Information*

#### **Summary of Assets as of January 1, 2019**

Investment Category	Market Value*	Allocation Percent
1. Equities		
a. Domestic large cap	\$ 8,945,366	31.1%
b. Domestic small cap	1,850,794	6.4
c. Developed international	2,725,168	9.5
d. Emerging markets	<u>1,108,141</u>	<u>3.9</u>
	14,629,469	50.9
2. Fixed Income		
a. Global	3,211,739	11.2
b. Emerging market	1,812,424	6.3
c. Domestic bank loans	1,334,296	4.6
d. Domestic core	1,010,892	3.5
e. Distressed debt	<u>874,822</u>	<u>3.1</u>
	8,244,173	28.7
3. Alternatives		
a. Hedge fund	2,735,614	9.5
b. Real estate (timberland)	978,537	3.4
c. Private real estate	<u>990,489</u>	<u>3.5</u>
	4,704,640	16.4
4. Cash and Cash Equivalents	<u>1,153,421</u>	<u>4.0</u>
5. Grand Total	\$ 28,731,703	100.0%

\* The amounts by investment category (items 1-3) are from the December 31, 2018 report by the plan's investment consultant. Item 4 is the balancing item to bring the grand total to equal the amount of the assets in the plan's audited financial report for the year ending December 31, 2018 (item 5).

## Statement of Changes in Audited Assets for the Years Ended December 31, 2018 and 2017

	<u>12/31/2018</u>	<u>12/31/2017</u>
<b>Additions</b>		
1. Contributions		
a. Employer	\$ 1,128,049	\$ 1,067,716
b. Employees	<u>0</u>	<u>0</u>
c. Total	\$ 1,128,049	\$ 1,067,716
2. Investment Income		
a. Interest and dividends	\$ 614,968	\$ 504,872
b. Net appreciation in fair value	<u>(1,990,681)</u>	<u>3,898,938</u>
c. Total	\$ (1,375,713)	\$ 4,403,810
3. Other Additions	<u>0</u>	<u>0</u>
<b>Total Additions</b>	<b>\$ (247,664)</b>	<b>\$ 5,471,526</b>
<b>Deductions</b>		
4. Benefit Payments	\$ 1,644,165	\$ 1,397,727
5. Expenses		
a. Investment-related	\$ 15,118	\$ 67,524
b. General administrative <sup>1</sup>	<u>0</u>	<u>0</u>
c. Total	\$ 15,118	\$ 67,524
<b>Total Deductions</b>	<b>\$ 1,659,283</b>	<b>\$ 1,465,251</b>
<b>Net Increase in Assets</b>	<b>\$ (1,906,947)</b>	<b>\$ 4,006,275</b>
Market Value of Assets (Plan Net Position)		
Beginning of Year	\$ 30,638,650	\$ 26,632,375
End of Year	\$ 28,731,703	\$ 30,638,650
Rate of Return		
Net of Investment-Related Expenses	(4.66)%	16.72%
Gross	(4.62)%	17.00%
Investment-Related Expenses (Direct)	0.04%	0.28%

<sup>1</sup> GBRA pays all administrative expenses and investment consultant fees from other than plan assets.

### Development of Actuarial Value of Assets

Calculation of Actuarial Investment Gain/(Loss) Based on Market Value for Plan Years				
	2018	2017	2016	2015
1. Market Value of Assets as of Beginning of Year	\$ 30,638,650	\$ 26,632,375	\$ 25,768,160	\$ 25,316,487
2. Employer Contributions	1,128,049	1,067,716	1,338,202	1,733,464
3. Benefit Payments	(1,644,165)	(1,397,727)	(1,124,173)	(841,560)
4. Expected Investment Return <sup>1</sup>	<u>2,087,160</u>	<u>1,815,346</u>	<u>1,764,425</u>	<u>1,826,085</u>
5. Expected Market Value of Assets as of End of Year	\$ 32,209,694	\$ 28,117,710	\$ 27,746,614	\$ 28,034,476
6. Actual Market Value of Assets as of End of Year	<u>28,731,703</u>	<u>30,638,650</u>	<u>26,632,375</u>	<u>25,768,160</u>
7. Actuarial Investment Gain/(Loss)	\$ (3,477,991)	\$ 2,520,940	\$ (1,114,239)	\$ (2,266,316)
8. Market Value Rate of Return Net of Expenses	(4.66)%	16.72%	2.58%	(1.75)%
9. Rate of Actuarial Investment Gain/(Loss)	(11.66)%	9.72%	(4.42)%	(9.00)%

<sup>1</sup> Assuming (1) uniform distribution of payments during the plan year, (2) recommended contributions at the end of the plan year, (3) 7% expected rate of return for 2018, 2017, and 2016, and 7.25% for 2015, and (4) supplemental contributions of \$700,000 on July 31, 2015, and \$300,000 on December 31, 2016.

Deferred Actuarial Investment Gains/(Losses) to be Recognized in Future Years			
Plan Year	Investment Gain/(Loss)	Deferral Percentage	Deferred Gain/(Loss) Amount as of 12/31/2018
2018	\$(3,477,991)	80%	\$ (2,782,393)
2017	2,520,940	60%	1,512,564
2016	(1,114,239)	40%	(445,696)
2015	(2,266,316)	20%	(453,263)
Total			\$ (2,168,788)

Actuarial Value of Assets as of December 31, 2018	
10. Market Value of Assets as of December 31, 2018	\$ 28,731,703
11. Deferred Gain/(Loss) to be Recognized in Future	<u>(2,168,788)</u>
12. Actuarial Value of Assets as of December 31, 2018 (Item 10 – Item 11)	\$ 30,900,491
13. Write Up/(down) of Assets (Item 12 – Item 10)	\$ 2,168,788

## ***Section IV – Actuarial Methods and Assumptions***

### **A. Actuarial Methods**

#### **1. Actuarial Cost Method**

For a frozen plan, no actuarial cost method is required. The primary calculations are the actuarial present value of future benefits of benefits in pay status and of deferred benefits. The unfunded actuarial liability (UAL) is the amount by which the present value of future benefits exceeds the current plan assets. The UAL is recalculated each time a valuation is performed. Experience gains and losses, which represent deviations of the UAL from its expected value based on the prior valuation, are determined at each valuation and are amortized as part of the newly calculated UAL.

#### **2. Amortization Method**

The UAL would be amortized with level dollar payments over a 10-year closed period beginning January 1, 2019, with the annual payment at the end of each year. Additional payments may be made in accordance with the funding policy determined by GBRA.

#### **3. Actuarial Value of Assets Method**

All assets are valued at market value, with an adjustment made to uniformly spread actuarial gains or losses (as measured by actual market value investment return vs. expected market value investment return) over a five-year period.

### **B. Actuarial Assumptions**

#### **1. Mortality**

PubG-2010 (general employees) total dataset mortality tables for employees and for retirees (sex distinct), projected for mortality improvement generationally using the projection scale MP-2018.

#### **2. Termination**

There is no need for assumed termination rates with a frozen plan. For the frozen benefit, all employees are assumed to have terminated employment as of December 31, 2018. For the supplemental benefit, all employees are assumed to work for GBRA to the later of December 31, 2019 and the end of the year of attaining age 65.

#### **3. Investment Return**

Current and future plan assets are assumed to reflect an annual investment return of 6.75% net of investment-related expenses. See item B.9 for administrative expenses.

#### **4. Earnings Progression**

There is no need to recognize projected earnings after 2018 for the frozen benefit as of December 31, 2018. However, the supplemental benefit is based on a projected Plan benefit if the Plan were to continue with its provisions in effect just before December 31, 2018. In addition, the supplemental benefit is based on a projected benefit in the TCDRS plan that was effective January 1, 2019. For both of those projected benefits, the earnings were projected to increase 2.75% per year.

#### **5. Retirement Rates**

All participating employees are assumed to work for GBRA to the later of December 31, 2019 and the end of the year of attaining age 65.

#### **6. Disability**

None were assumed.

#### **7. Inflation Component in Investment Return Assumption**

2.75%

#### **8. Form of Payment**

- a. Current pensioners: Actual form of payment.
- b. Future pensioners: Normal form of payment (10 years certain and life).
- c. Monthly benefits are payable the first of each month.

#### **9. Administrative Expenses**

The expenses will continue to be paid by GBRA and not from Plan assets.

## ***Section V - Outline of Principal Plan Eligibility and Benefit Provisions Reflected in the Actuarial Valuation as of January 1, 2019***

### **1. Identifying Data**

- a. Plan name: Retirement Plan for Employees of Guadalupe-Blanco River Authority
- b. Type of plan: Defined benefit
- c. Plan sponsor: Guadalupe-Blanco River Authority
- d. Plan Year: January 1 – December 31

### **2. Participation**

- a. Minimum Age: none
- b. Maximum Age at Hire: none
- c. Service: 1 year in which 1,000 or more hours are completed
- d. Employee Classification: All except a Leased Employee or an independent contractor
- e. Hire Date: first employed by the plan sponsor before January 1, 2011

### **3. Contributions**

- a. Participant: none required
- b. Employer: all amounts necessary to adequately finance plan benefits

### **4. Eligibility for Retirement**

- a. Normal Retirement: age 65
- b. Early Retirement: age 55 plus 15 years of vesting service

### **5. Retirement Benefit Monthly Amounts**

- a. Normal Retirement: 1.30% of average monthly compensation per year of credited service
- b. Late Retirement: same as Normal Retirement increased by 5/9% for every month late retirement follows normal retirement
- c. Early Retirement:
  - 1) With Satisfaction of Rule of 85 (age and Accrual Service equal to eighty-five (85) or more years and age of sixty (60) or more years): amount equal to monthly normal retirement benefit accrued at early retirement date
  - 2) Without Satisfaction of Rule of 85: amount equal to monthly normal retirement benefit accrued at early retirement date reduced by 5/12% for every month early retirement precedes normal retirement
- d. Disability: amount payable at normal retirement age assuming continuation of service from date of disability to normal retirement age, but based on average monthly compensation at the date of disability

### **6. Normal Form of Monthly Payment**

10 years certain and life; other actuarially equivalent monthly payment forms are available



## **7. Frozen DB Benefit**

The plan was frozen as of December 31, 2018 and no additional benefits will accrue. All active participants became 100% vested in their accrued benefit as of that date, referred to as the Frozen DB Benefit. It is payable in the normal form of payment at normal retirement age. It was calculated using the normal retirement benefit formula but using the amount of credited service and the average monthly compensation as of December 31, 2018. It excluded any unused sick leave.

This benefit is payable following termination of employment and upon either (a) reaching normal retirement age or (b) satisfying an early retirement or other commencement of benefit provision. It will be actuarially reduced if the participant's termination is prior to his or her normal retirement date.

## **8. Supplemental Benefit**

Participants with a Frozen DB Benefit are eligible for a Supplemental Benefit. This benefit is designed in an attempt to make up for the difference, if any, between (a) the projected benefit of the plan if the plan were to continue as it was before being frozen and (b) the sum of the Frozen DB Benefit and the employer-funded portion of the benefit in the TCDRS plan. It includes unused sick leave as described in item 12.

## **9. Pre-retirement Death Benefits**

Payment of benefit which is actuarially equivalent to the present value of the participant's Frozen DB Benefit and Supplemental Benefit.

## **10. Basis of Actuarial Equivalence for Optional Forms of Monthly Benefit**

8% and UP84 Mortality Table set back one year

## **11. Average Monthly Compensation**

Gross compensation averaged over the three consecutive complete calendar years of highest total compensation over the last ten completed calendar years of employment. Except that the year in which a member terminates shall be considered a complete calendar year of employment, and the compensation for such calendar year shall be deemed equal to the annualized rate of compensation which he actually received for such calendar year, excluding any amount paid for unused vacation or for unused sick leave or for any reason related to termination of employment, and with the portion of such calendar year following such member's termination of employment being included in determining the number of months for which such compensation was received.

## 12. **Unused Sick Leave**

The Supplemental Benefit is calculated using the lesser of the amount of unused sick leave as of December 31, 2018 and the amount as of termination of employment, converting the hours of unused sick leave into credited service at the rate of one month of credited service for each 173.33 hours of unusual sick leave.

## *Section VI - Summary of Participant Data*

### **Participant Data Reconciliation**

	<b>Active Participants</b>	<b>Current Payment Status</b>	<b>Deferred Payment Status</b>	<b>Total</b>
1. As of January 1, 2018	88	81	41	210
2. Change of status				
a. normal retirement	(1)	2	(1)	0
b. late retirement	(4)	4	0	0
c. early retirement	(1)	1	0	0
d. disability	0	0	0	0
e. death	0	0	0	0
f. nonvested termination	0	0	0	0
f. vested termination	(3)	0	3	0
h. completion of payment	0	0	0	0
i. alternate payee	0	0	0	0
j. start of survivor benefit	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>
k. net changes	(9)	7	2	0
3. New participants (rehire)	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>
4. As of January 1, 2019	79	88	43	210

### Distribution of Active Participants by Age and Service as of January 1, 2019

Age	Years of Service									Total	Percent
	0-4	5-9	10-14	15-19	20-24	25-29	30-34	35-39	40+		
Under 25	0	0	0	0	0	0	0	0	0	0	0%
25-29	0	0	0	0	0	0	0	0	0	0	0
30-34	0	0	2	0	0	0	0	0	0	2	3
35-39	0	2	2	0	0	0	0	0	0	4	5
40-44	0	1	3	4	0	0	0	0	0	8	10
45-49	0	0	0	7	2	1	0	0	0	10	13
50-54	1	1	4	1	0	2	4	0	0	13	16
55-59	0	0	3	1	4	1	2	6	0	17	21
60-64	0	0	1	1	1	1	2	6	7	19	24
Over 65	0	0	1	1	0	1	0	2	1	6	8
Total	1	4	16	15	7	6	8	14	8	79	100%
Percent	1%	5%	20%	19%	9%	8%	10%	18%	10%	100%	

Average age = 53.6 years  
Average service = 24.1 years

## *Section VII - Definitions*

1. Actuarial Liability	The Actuarial Present Value of future pension plan benefits as of the Valuation Date.
2. Actuarial Assumptions	Assumptions as to the occurrence of future events affecting pension costs, such as: mortality, termination, disablement and retirement; changes in compensation; rates of investment earnings and asset appreciation; and other relevant items.
3. Actuarially Equivalent	Of equal Actuarial Present Value, determined as of a given date, with each value based on the same set of Actuarial Assumptions.
4. Actuarial Gain (Loss)	A measure of the difference between actual experience and that expected based on the Actuarial Assumptions during the period between two Actuarial Valuation dates.
5. Actuarial Present Value	The value of an amount or series of amounts payable or receivable at various times, determined as of a given date (the Valuation Date) by the application of the Actuarial Assumptions.
6. Actuarial Valuation	The determination, as of a Valuation Date, of the Actuarial Liability, Actuarial Value of Assets and related Actuarial Present Values for a pension plan.
7. Actuarial Value of Assets	The value of cash, investments and other property belonging to a pension plan, as determined by a method and used by the actuary for the purpose of an Actuarial Valuation.
8. Plan Year	A 12-month period beginning January 1 and ending December 31.
9. Projected Benefits	Those pension plan benefit amounts that are expected to be paid at various future times according to the Actuarial Assumptions, taking into account such items as the effect of advancement in age and past and anticipated future qualified service.
10. Overfunded Actuarial Liability	The excess, if any, of the Actuarial Value of Assets over the Actuarial Liability.

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| 11. Unfunded Actuarial Liability                          | The excess, if any, of the Actuarial Liability over the Actuarial Value of Assets.   |
| 12. Valuation Date  | The date upon which the Actuarial Liability and Actuarial Value of Assets are determined. Generally, the Valuation Date will coincide with the beginning of a Plan Year. |
| 13. Years to Amortize the<br>Unfunded Actuarial Liability | The period is determined according to GBRA's funding policy, to amortize the Unfunded Actuarial Liability with a level annual dollar contribution.                       |

