

Non-Core Fixed Income Process & Recommendations

September 22-23, 2016

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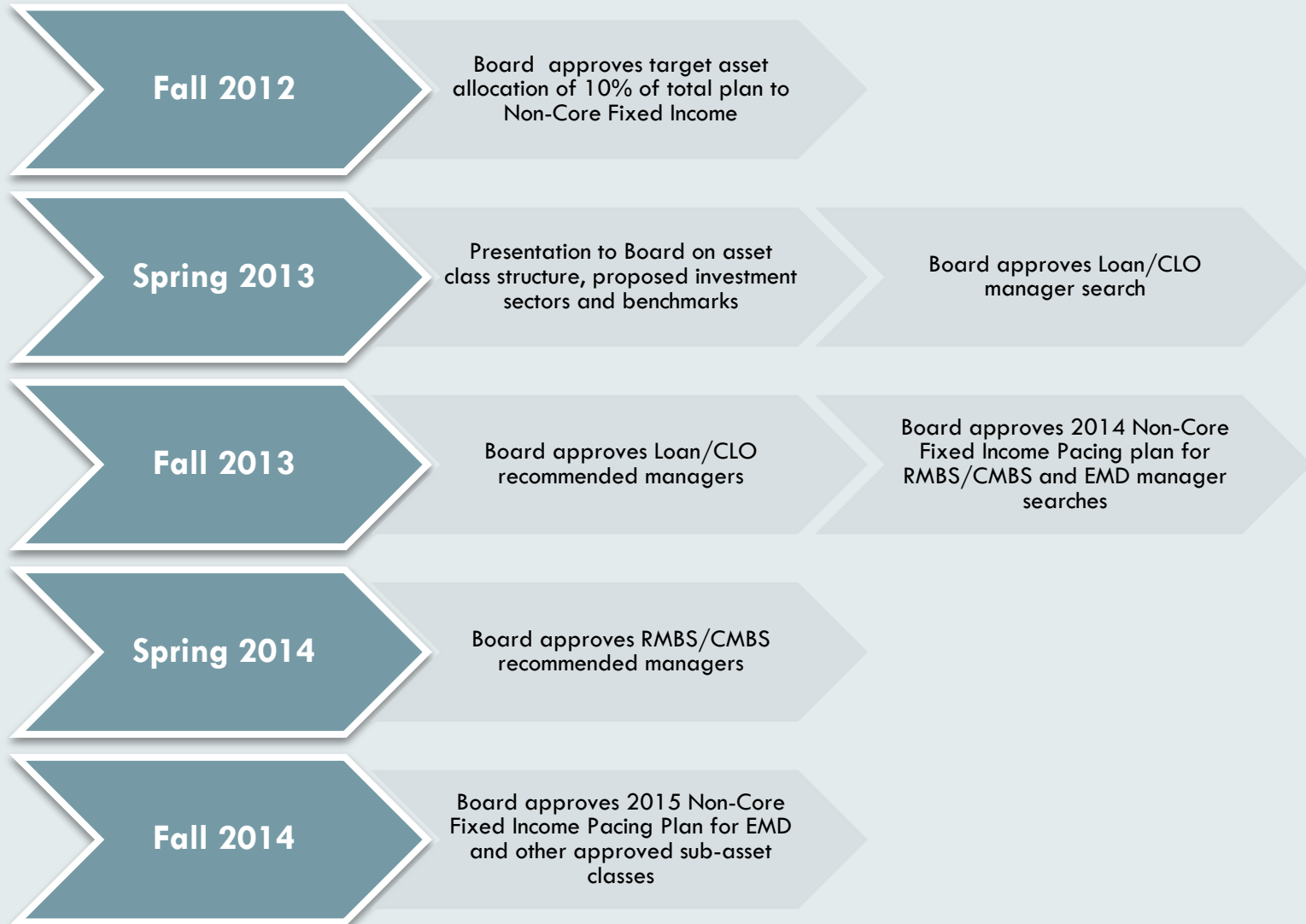
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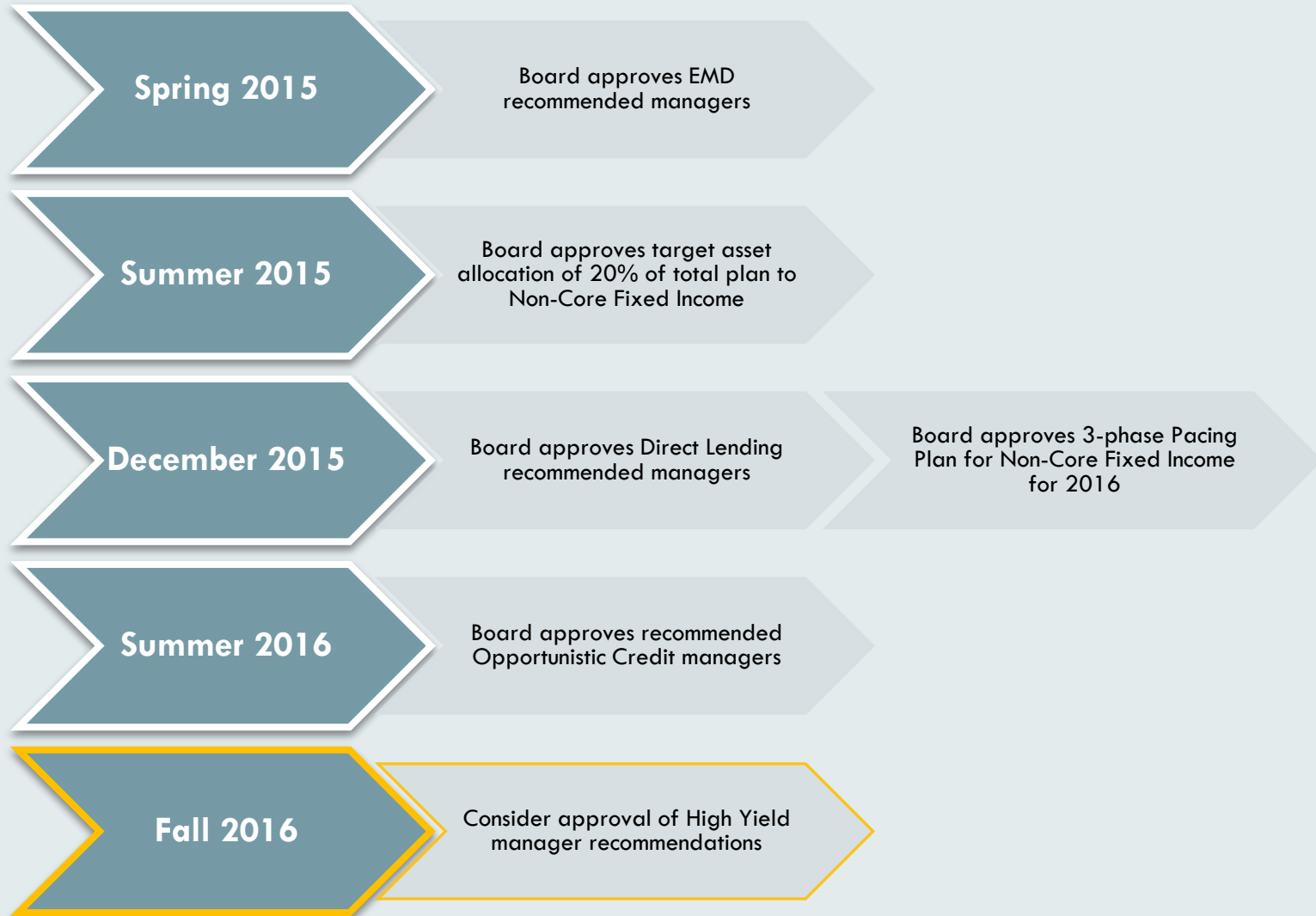
I. Non-Core Fixed Income Timeline



Non-Core Fixed Income Timeline *(1 of 2)*



Non-Core Fixed Income Timeline *(2 of 2)*

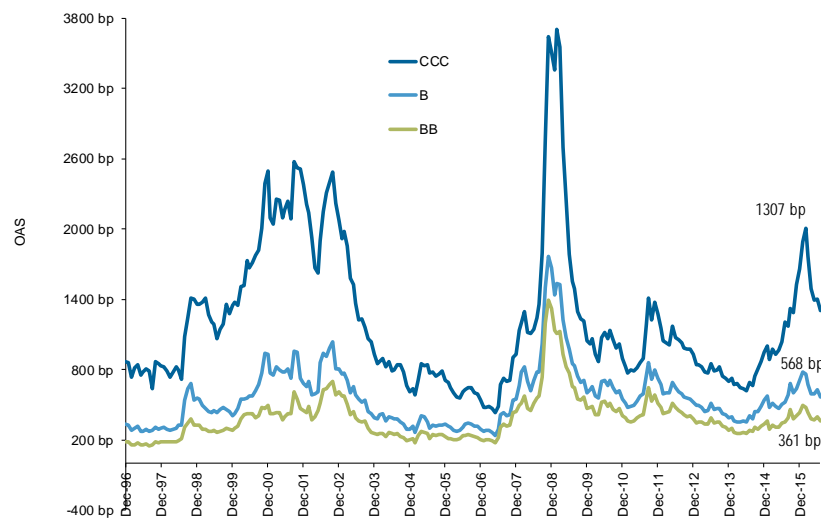
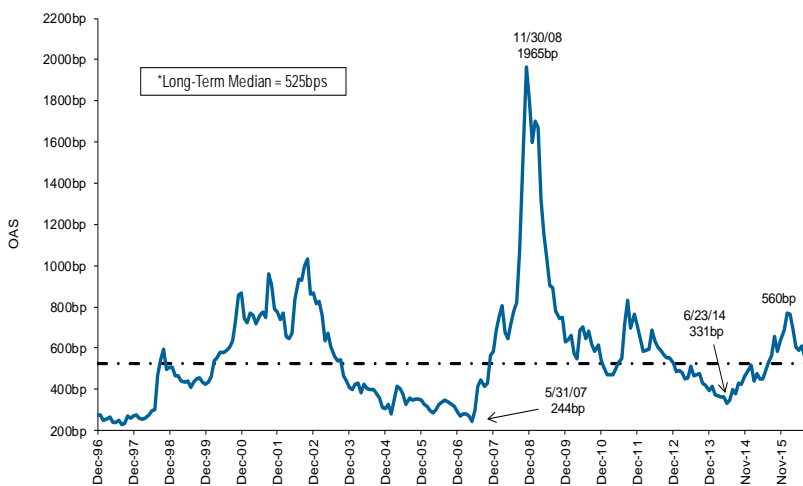


II. High Yield Considerations



High Yield (HY) Considerations

- HY allocation allows TMRS to further diversify the portfolio.
- HY bonds have performed well during rising interest rate environments due to the high income generation which can mitigate interest rate risk and protect principal.
- The main return driver for HY is income generation.
- Credit spreads remain historically attractive.



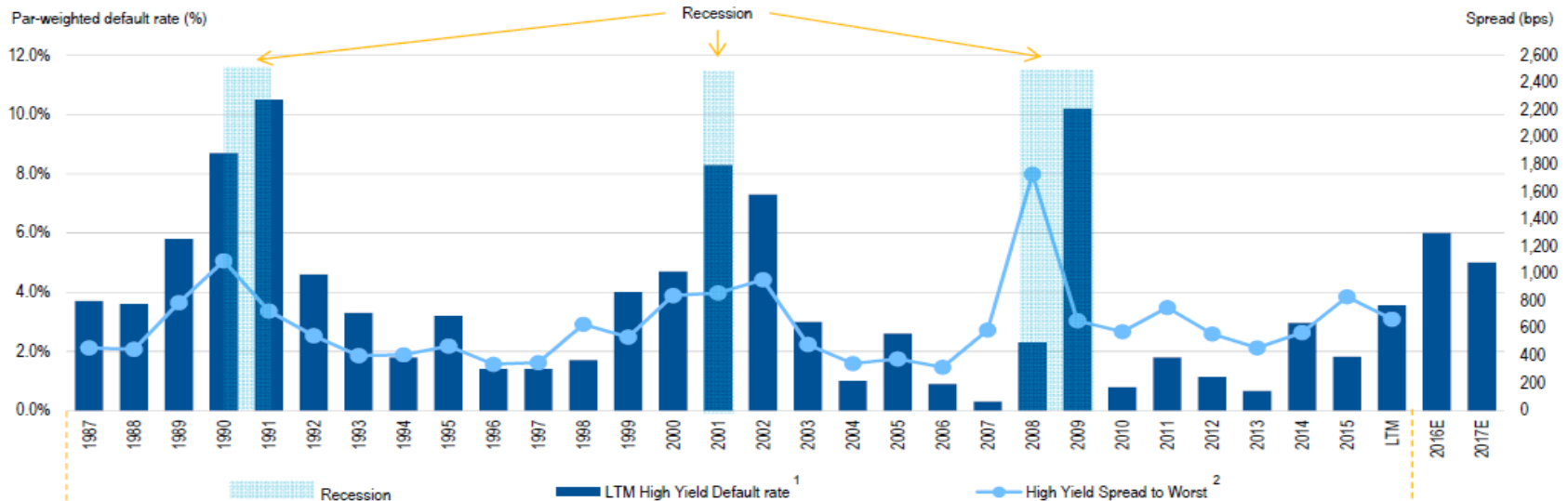
High Yield Considerations

- Outside commodities sectors, defaults remain below average

Credit Spreads and High Yield Default Rates

As of June 30, 2016

SPREADS VS. HIGH YIELD DEFAULT RATES



ANNUAL HIGH YIELD RETURNS (%)³

1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	YTD 2016
4.5	13.4	2.3	-4.4	39.2	17.4	16.7	-1.0	20.5	11.3	13.3	3.0	2.5	-5.1	4.5	-1.9	28.1	10.9	2.7	11.8	2.2	-26.4	57.5	15.2	4.4	15.6	7.4	2.5	-4.6	9.3

Average Return During Sell Off⁴: -7.2%
Median Return During Sell Off⁴: -4.5%

Average Return During Recovery⁴: 30.0%
Median Return During Recovery⁴: 28.1%

Average HY Spread to Worst²: 627 Bps
Median HY Spread to Worst²: 566 Bps

Long-Term Average Default Rate⁵: 3.3%

1. J.P. Morgan Default Monitor. Defaults based on par amounts.

2. High Yield Spread to Worst is represented by the J.P. Morgan Global High Yield Index.

3. Annual High Yield return is represented by the Bank of America Merrill Lynch U.S. High Yield Index.

4. Sell off infers any calendar year that produced a negative total return with recovery being the full year immediately following.

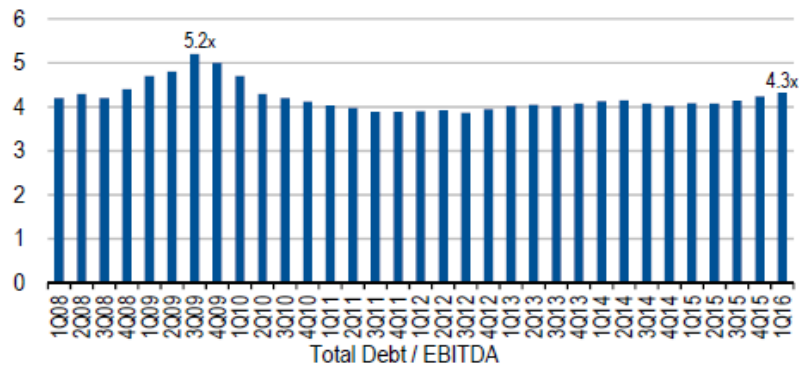
5. Long-term average is represented by the 25-year average provided by J.P. Morgan.

See definitions of indices at the back of this presentation. Past performance is not necessarily indicative of future results. As with any investment, there is the possibility of profit as well as the risk of loss.

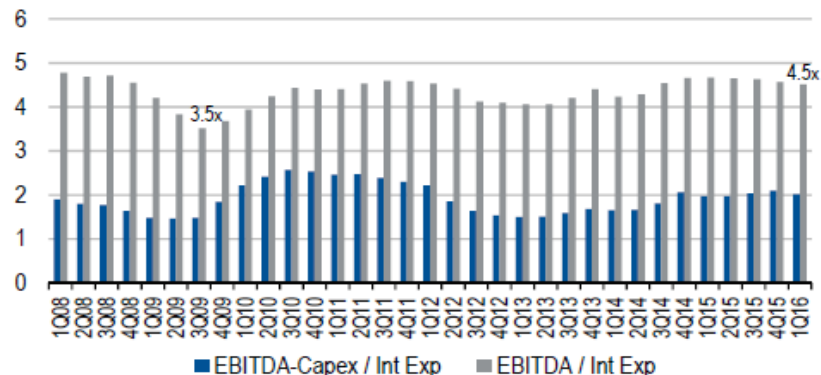
High Yield Considerations

- Corporate fundamentals remain attractive:

LEVERAGE REMAINS MODEST³



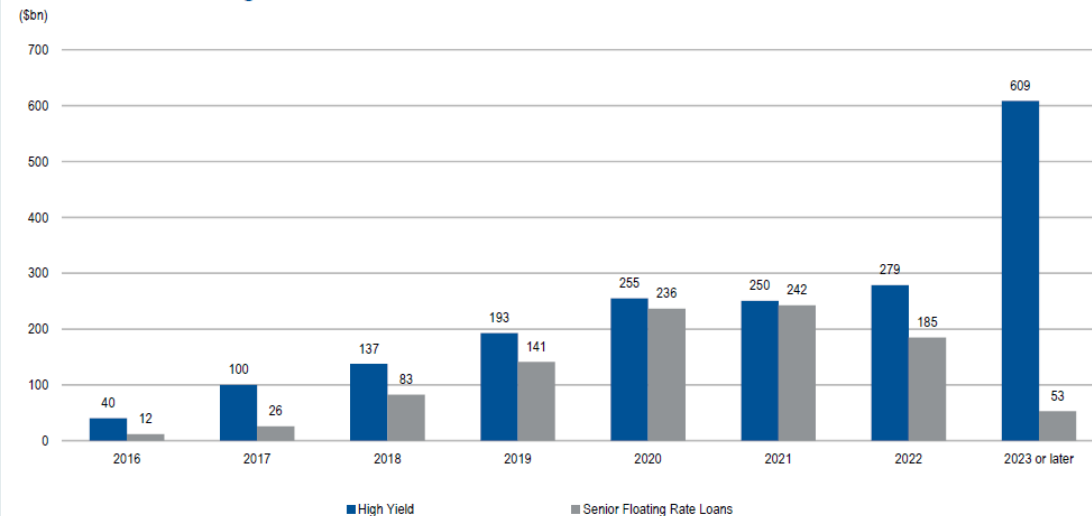
INTEREST COVERAGE REMAINS STRONG³



- Concerns about supply imbalances mitigated by refinancing activity.

Modest Maturity Wall

Continued refinancing has reduced near-term maturities



III. High Yield Manager Search Process



Manager Search Process

Step 1

• **Initial Screening and Manager Identification**

- TMRS and RVK (“team”) screened the universe of over 150 US and Global High Yield managers based on absolute, relative, and risk-adjusted performance.
- The team identified 38 managers with US and/or Global High Yield strategies to receive a Request for Information (RFI).

Step 2

• **Responses and RFI Scoring**

- 30 managers responded to the RFI.
- The team screened and scored the managers’ responses to the RFI and selected the 9 top-ranked managers to continue to the semi-finalist round of interviews.

Step 3

• **Semi-Finalist Candidate Analysis**

- The team conducted lengthy telephone interviews with each of the 9 semi-finalists which included presentations made by candidate investment team members and question and answer sessions.
- The semi-finalist candidates were scored by the team, and the 3 managers with the highest combined score continued to the finalist round of interviews.

Step 4

• **Finalist Candidate Onsite Visits**

- The team conducted onsite visits with finalist managers at which the team received detailed presentations from portfolio managers, research analysts, traders, risk management, operations, and compliance.

Step 5

• **Final Due Diligence & Manager Selection**

- The team ranked the finalist managers after discussing the merits of each manager.
- The top 2 managers were chosen for recommendation to the Board.

Minimum Qualifications

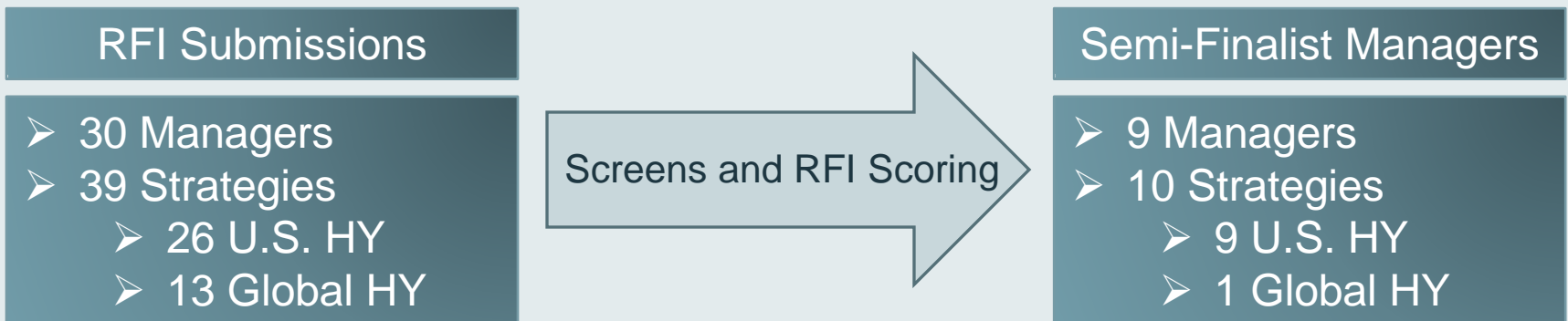
Have at least \$5 billion in total firm assets under management	✓
Have at least \$2.5 billion in institutional U.S. High Yield or \$1 billion in institutional Global High Yield to submit for each mandate.	✓
Have at least \$200 million assets under management in separately managed account	✓
Agree to accept allocation between \$200-\$400M	✓
Have at least a continuous five-year performance track record with a proposed U.S. High Yield strategy and at least a 3-year performance track record for a proposed Global High Yield strategy.	✓
Certify in writing willingness to act as a fiduciary and be bound by Prudent Expert Rule	✓
US SEC Registered Investment Advisor under the Investment Advisor Act of 1940	✓
Firm and personnel have all authorizations, permits, licenses, and certifications as required under federal, state, or local law	✓
Must not have, nor could potentially have, a material conflict with the TMRS Board of Trustees, Staff, Consultant, or Custodial Bank	✓
Must have adequate fiduciary and liability insurance coverage	✓
Must be willing to enter into a management contract	✓
Must certify having and will maintain adequate controls and operational support	✓

RFI Scoring Criteria

Criteria	Max Points
Firm Background and General	4
Strategies Currently Managed	4
Personnel	20
Philosophy/Process	25
Product Characteristics	10
Performance History	7
Risk Management, Compliance, Trading, Client Service	20
Fees	10
Total	100

RFI Scoring

- Strategies that did not meet the *Minimum Qualifications* outlined in the RFI as well as a minimum performance requirement imposed by the team were removed from the search.
- US and Global High Yield Strategies were scored and compared using the same criteria.
- The 10 top-ranked strategies (9 managers) based on combined scoring were chosen for semi-finalist interviews.



Semi-Finalist Analysis

- The team held 90 minute phone interviews with the 9 semi-finalist managers.
- Managers were rated on a scale of 0-10 for each topic covered in the semi-finalist interviews.
- The scoring categories were weighted in order of importance. Each team member submitted an individual score. The scoring was aggregated to develop a final score.
- The 3 top-rated managers were chosen as finalist candidates.

Scoring Category	Category Weight	Columbia	Neuberger Berman	HY 3	HY 4	HY 5	HY 6	HY 7	HY 8	HY 9
Firm	5%	8.6	10.0	9.2	9.5	8.6	8.6	8.6	7.6	8.6
Team	15%	8.7	9.8	8.5	7.5	7.5	7.4	7.8	7.0	7.8
Philosophy	20%	9.1	9.5	8.8	8.5	8.5	8.0	7.9	7.8	7.5
Process	30%	9.0	8.8	8.8	8.2	8.1	8.0	7.9	7.5	6.5
Risk Mgmt & Compliance	5%	9.5	9.5	9.5	9.4	9.5	9.4	9.4	9.4	9.4
Performance	15%	8.8	8.3	8.5	8.0	10.0	7.0	7.3	6.9	6.5
Fees	10%	8.8	6.3	6.8	9.9	5.5	10.0	8.0	9.3	6.0
Total	100%	8.9	8.8	8.5	8.4	8.2	8.0	7.9	7.7	7.1

Finalist Rankings

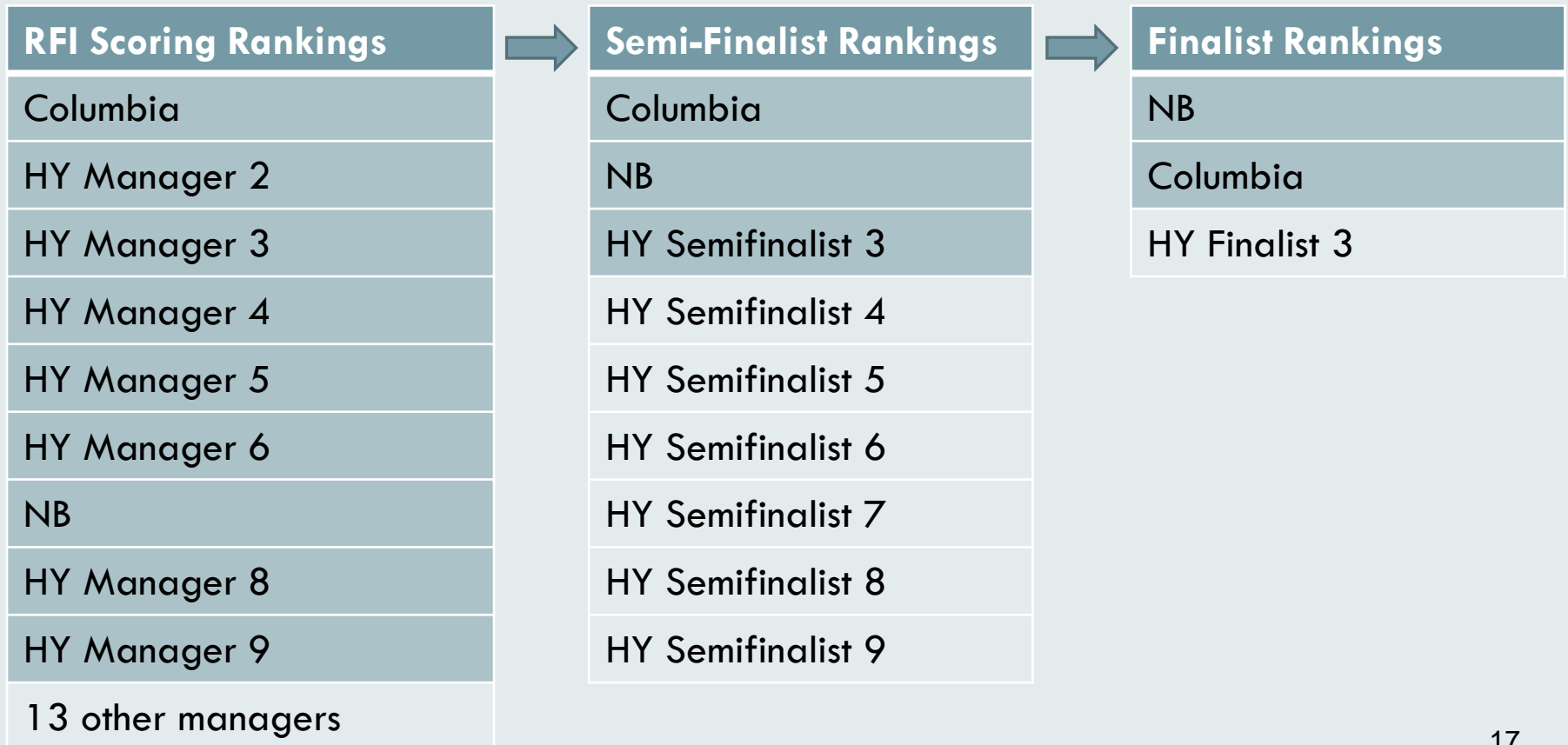
- The team performed onsite due diligence with each of the 3 finalist managers.
- Key members of the investment teams, including portfolio managers, analysts, and traders, presented and demonstrated their investment process.
- Members of each firm's risk management, compliance, and relationship management teams presented on their capabilities and processes.

Following the onsite meetings, each member of the team ranked the managers. Neuberger Berman and Columbia were selected for recommendation to the Board based on combined rankings.

	Columbia	HY 3	Neuberger Berman
TMRS 1	2	3	1
TMRS 2	2	3	1
RVK 1	1	3	2
RVK 2	2	3	1
Final Rank	2	3	1

Manager Evaluation Summary

- Ranked by score (high to low)
- Highlighted managers chosen to advance in selection process



IV. Finalist Characteristics



Columbia (\$300 million)

Firm

- Columbia is a wholly-owned subsidiary of Ameriprise Financial which is headquartered in Minneapolis, MN.
- \$480 billion in total assets under management
- Asset management comprises 28% of Ameriprise's total operating revenues. Other revenue sources include financial advisory and insurance.

Team

- Dedicated high yield team with \$17.6 billion in high yield assets under management
- Located in Minneapolis, MN
- 4 Portfolio Managers with an average of 25 years of experience
- 15 Research Analysts with an average of 12 years of experience
- 3 High Yield Traders with an average of 28 years of experience
- Supported by Investment Grade Fixed Income and Equity teams

Columbia (\$300 million)

Strategy

- Collaborative process with daily team meetings.
- Analysts use a risk and relative value ratings system.
- The strategy is tactically managed with consideration for changing macroeconomic environments and industry trends.

Performance Expectations

- The portfolio is managed tactically with a goal of delivering 100 basis points of outperformance per annum, net of fees with strong risk-adjusted returns in all market environments. Accordingly, tracking error may vary depending on the market environment.
- The strategy tends to outperform the benchmark and peers in flat or down markets.

Distinguishing Features

- Experienced leadership at the Portfolio Manager level
- Ability to utilize firm resources
- Relatively low management fees

Neuberger (\$300 million)

Firm

- Founded in 1939
- Headquartered in New York, NY
- 100% employee-owned asset management firm
- \$246 billion in assets under management

Team

- Dedicated high yield portfolio management team with a research analyst team that covers high yield bonds and bank loans
- Located in Chicago, IL
- 4 Portfolio Managers with an average of 28 years of experience
- 25 Research Analysts with an average of 10 years of experience
- 4 High Yield Traders with an average of 16 years of experience
- Supported by Investment Grade Fixed Income and Equity teams

Neuberger (\$300 million)

Strategy

- Focus on large and liquid issuers (minimum \$500 million issuer size)
- Disciplined research checklist which seeks to avoid deteriorating credits and avoid defaults.
- Proactive top-down management overlaying bottom-up security selection.

Performance Expectations

- Seeks to outperform its benchmark by 100 basis points compounded annually over a full market cycle with a target tracking error of 200-350 basis points.
- The strategy tends to outperform the benchmark and peer group during weaker market environments.

Distinguishing Features

- Experienced leadership at the Portfolio Manager level
- Large Research Analyst team with robust sector coverage
- Ability to utilize firm resources
- Benefits from being a major investor in the high yield market

V. Conclusion and Recommendation



Conclusion and Recommendation

- TMRS Staff and RVK have undergone a rigorous and well-defined process in determining the selection and recommendation for a portion of the Non-Core Fixed Income asset class according to the Board-approved Non-Core Fixed Income Pacing Plan.
- Staff and RVK recommend allocating \$600 million (2.5% of the total fund) to Columbia and Neuberger as follows:

Manager	Allocation
Columbia	\$300 million
Neuberger	\$300 million
Total	\$600 million

DISCLOSURE

TMRS periodically discloses public information that is not excepted from disclosure under Section 552.0225(b) of the Texas Public Information Act. Information provided by a manager, a general partner or other data provider to TMRS or a TMRS service provider, and contained in these materials, may have been independently produced or modified by TMRS or the TMRS service provider.