Wilshire

City of Fresno Retirement Systems

Response to Request for Proposal for Investment Consulting Services

September 10, 2012

Table of Contents

TRANSMITTAL LETTER Tab A
ANSWERS TO QUESTIONNAIRE Tab B
PART B: QUESTIONNAIRE 1
Name and Contact Information 1
History, Ownership and Organization 1
Services and Revenues 4
Independence, Objectivity and Conflict of Interest 10
Institutional Clients 14
Professional Staff 16
Asset Allocation 23
Investment Manager Search and Selection 47
Performance Evaluation and Compliance 64
Research and Education 79
Litigation and Insurance 85
Performance 87
WILSHIRE'S PHILOSOPHY AND APPROACH TO CONSULTING Tab C
PART C: PHILOSOPHY AND APPROACH TO CONSULTING 87
WILSHIRE'S ADDITIONAL MATERIALS & DOCUMENTS Tab D
PART D: ADDITIONAL MATERIALS &DOCUMENTS 101
FEES Tab E
Section IV – Fees 103
A. All-Inclusive, Flat Fees: 103
B. Additional Fees or Charges: 105
C. Additional Information: 105

Appendix

Wilshire's FORM ADV, Parts 1, 2A and 2B Tab 1
Wilshire's Team Biographies Tab 2
2012 Asset Allocation Report Tab 3
Monthly and Quarterly Perspectives Tab 4
Agenda for Wilshire's 2012 Consulting Client Conference Tab 5
Julia Bonafede's Biography Tab 6
Organizational Chart Tab 7
Representative Listing of Clients Tab 8
2011 Statement of Financial Condition Tab 9
Wilshire's Conflict of Interest Policy Tab 10
Executive Summary Report Tab 11
Sample Due Diligence Report Tab 12
Sample Investment Policy Report Tab 13
Three Sample Research Reports Tab 14
Sample Education Presentation Tab 15
Standard Marketing Materials Tab 16
Wilshire's Exceptions to City of Fresno's Contract Tab 17
Quarterly Performance Measurement Report Under Separate Cover

Thomas Toth, CFA
Managing Director
Wilshire Associates Incorporated
370 Interlocken Boulevard, Suite 620
Broomfield, CO 80021
Phone: (303) 626-7448
Fax: (303) 466-1537
ttoth@wilshire.com

Wilshire

PART B: QUESTIONNAIRE

Please respond to all questions in the order that they are listed. Indicate the question number and restate the question prior to providing your response. Enter your response in the tabular format where required. Please be clear and succinct in your response. Ensure that each response is specific to the question asked. Unnecessary or superfluous information will be disregarded. Additional information or comments may be provided in Part C: Philosophy and Approach to Consulting.

Name and Contact Information

1. Please provide the following information on the Firm:

	Information on the Firm
Name of the Firm	Wilshire Associates Incorporated
Address of Head Office	1299 Ocean Avenue, Suite 700 Santa Monica, CA 90401
Telephone Number	310-451-3051
Website	www.wilshire.com

2. Please provide the following information on the primary RFP contact for the Firm:

	Primary RFP Contact
Name	Mr. Thomas Toth, CFA
Title	Managing Director
Telephone Number	303-626-7448
Fax Number	303-466-1537
E-mail Address	ttoth@wilshire.com

History, Ownership and Organization

3. When was the Firm founded or established?

Wilshire Associates Incorporated ("Wilshire®" or "Wilshire Associates") was founded in 1972. Wilshire earned a leadership position in the industry by providing thought leadership and innovation. For forty years our clients have trusted Wilshire to lead the institutional investment community by transforming complex theory into practical solutions.

Our thought leadership started in the 1970's when Wilshire became an early innovator in creating the industry's integrated asset/liability analysis/simulation models as well as the industry's practical models in risk budgeting through beta and active risk analysis.

(a) Who were the founders?

The three original founders of the firm were:

- John W. O'Brien
- Dennis A. Tito
- Ronald E. Brunner.

Today, Dennis Tito, a co-founder of the firm, continues to serve in the active capacity of Chairman and Chief Executive Officer of Wilshire Associates Incorporated.

(b) Please provide the names of any predecessor companies or other organizations with which the founders were previously associated.

The previous name, and the original name when the firm was founded, was O'Brien Associates.

(c) If the Firm was subsequently acquired by another company, when did this take place? What is the name of the parent company?

Not applicable.

4. Please provide the names of the owners of the Firm and indicate their percentage of ownership.

Because Wilshire Associates is a private company, our policy is to not share ownership details about each of Wilshire's specific principals. However, we can provide a general overview of Wilshire's ownership structure. Currently, Wilshire has 60 principals (as of 6.30.2012), each of whom holds the title of Vice President, Managing Director, Senior Managing Director or President. The founder and CEO of Wilshire Associates, Dennis Tito, owns more than 70% of the shares of the firm, and no single individual apart from Dennis Tito owns more than 10% of the shares of the firm. Retired individuals do not have any ownership interest in the firm.

5. Please provide a brief description of the ownership and organizational structure of the Firm. Indicate the names of any subsidiary or affiliated companies and briefly describe the nature of their business, and the relationship between the Firm and these other companies.

Wilshire is a privately held Subchapter S corporation that is 100% owned by its active key employees. Dennis Tito, a co-founder of the firm, continues to serve in the capacity of Chairman and Chief Executive Officer.

Wilshire Private Market operations in Amsterdam, Hong Kong, and Melbourne are conducted through affiliated companies, Wilshire Associates Europe, BV, Wilshire

Hong Kong Limited, and Wilshire Australia Pty Limited. Wilshire's participation as general partner in various limited partnership investment vehicles is conducted through entities controlled by Wilshire's affiliate, Wilshire Global Advisors Inc. Wilshire has no parent company. The ownership of Wilshire Global Advisors Inc. is identical to that of Wilshire. These operations were set up as affiliated companies.

6. What significant changes, if any, have there been in the Firm's ownership, structure or organization over the past three years? Do you anticipate any significant changes (including any proposed sale or merger of the firm) in the future?

There have been no significant changes in the Firm's ownership structure over the past three years. Other than continuing to expand ownership to other active key employees, to the best of our knowledge, no other near term changes in Wilshire's ownership structure or changes in the organization are anticipated.

7. Please provide the locations of all offices and the total number of employees in each office. Indicate the office that would service this account.

Wilshire Associates and its affiliates employ more than 300 people in ten offices around the world. Wilshire Consulting relationships are conducted from the Santa Monica, Denver, and Pittsburgh offices.

Santa Monica (223 employees):
1299 Ocean Avenue, Suite 700
Santa Monica, CA 90401
(310) 451-3051
All Wilshire services and products

Pittsburgh (46 employees):
210 Sixth Avenue, Suite 3720
Pittsburgh, PA 15222
(412) 434-1580
Wilshire Consulting, Wilshire Private Markets, Wilshire Funds Management

Jersey City (20 employees):
525 Washington Blvd., Suite 2205
Jersey City, NJ 07310
(201) 984-4899
Wilshire Analytics, Wilshire Funds Management

Chicago (9 employees):
222 W. Adams St. Ste. 1725
Chicago, IL 60606
(312) 762-5500
Wilshire Funds Management, Wilshire Analytics

Denver (9 employees):
370 Interlocken Blvd., Ste. 620
Broomfield, CO 80021
(303) 626-7444 x4444
Wilshire Consulting

Singapore (3 employees):
3 Pickering Street, #02-39, Nankin Row
China Square Central
Singapore 048660
65.6435.2169
Wilshire Analytics client service

London (17 employees):
23 Austin Friars
London, EC4M 9DQ
United Kingdom
44.20.7920.3100
Wilshire Analytics client service

Amsterdam (6 employees):
Wilshire Associates Europe B.V.
World Trade Center
Tower H, 25th Floor
Zuidplein 204
Amsterdam
31.20.305.7530
Wilshire Private Markets

Melbourne (6 employees):
Wilshire Australia Pty Limited
Melbourne Centre, Level 9
440 Collins Street
Melbourne 3000 VIC
Australia
61.3.9607.1313
Wilshire Private Markets

Hong Kong (2 employees):
Wilshire Hong Kong Limited
20/F One IFC
1 Harbour View Street
Central, Hong Kong
852.3669.8175
852.3669.8176
Wilshire Private Markets

The City of Fresno Retirement Systems consulting relationship would be managed from the Denver office, where Tom Toth's team is based.

8. Is the Firm registered as an investment advisor under the Investment Advisor Act of 1940? Does the Firm acknowledge that it has fiduciary status as an investment advisor in providing investment consulting services to pension plans?

Yes. Wilshire Associates is registered as an investment adviser with the SEC under the Investment Advisers Act of 1940. It is the policy of Wilshire Associates to provide (at the times required) all disclosures required under the Investment Advisers Act of 1940, including Form ADV Part 2A Brochure which includes Wilshire's Privacy Policy and Form ADV Part 2B Brochure Supplement (provided in the **Appendix, Tab 1**).

Yes, Wilshire will agree to serve as a fiduciary with respect to investment advisory services provided to the pension plans, subject to the terms and conditions of the contract negotiated and agreed to by the parties.

Services and Revenues

9. Please confirm whether or not the Firm can provide all of the services listed in Section I of the RFP under "Nature and Scope of Services."

Wilshire confirms that we can provide all of the services listed in the Nature and Scope of Services under this RFP.

(a) Are there any services that the Firm cannot or will not provide?

There are no investment advisory services in which Wilshire Associates cannot or will not provide.

(b) List any additional services that the firm would provide and which are included in the fee proposal in Section IV.

Listed below are the consulting services that are included in a full-retainer relationship:

- Analysis of the financial condition of your plan
- Assistance with Asset / liability valuation analysis
- Assistance with Investment policy development
- Asset class analysis and structuring
- Assistance with Investment manager searches
  - Public market managers
  - Alpha transfer programs
  - Commingled real estate
  - Fund of funds private equity
  - Fund of funds hedge funds
- Investment manager fee negotiation
- Investment manager objectives and guidelines
- Custodial searches / record keeping and other vendor searches as appropriate
- Meetings with the investment committee and / or board
- Meetings with investment managers
- Quarterly performance measurement reporting
- Access to Wilshire's topical research reports
- Participation in Wilshire's annual client conference
- Customized client education

(c) Indicate any other products or services that may be of interest to a plan sponsor and which would be available at additional cost.

Wilshire is comprised of four distinct business units: Wilshire Consulting, Wilshire Private Markets, Wilshire Funds Management, and Wilshire Analytics. Each distinct business unit offers the following services and/or products of which may be of interest to City of Fresno Retirement System at an additional cost, are described below.

Wilshire Consulting

Outside of our full retainer relationships, Wilshire Consulting offers these additional services

- Wilshire Consulting also offers discretionary outsourcing solutions to institutions. Rooted in Wilshire's three decades of experience, our investment expertise lies in the selection of investment managers, the blending of complementary managers to control risk, and the monitoring of these investment solutions to help enhance risk-adjusted performance. We provide customized investment programs based on the risk tolerance of the investors we represent.

- Wilshire Compass^{SM} is a Windows-based application that provides institutional clients with analytical tools to evaluate managers, investment structures, and asset allocations, as well as access to Wilshire research. Wilshire Compass clients can receive updates to their analytical tools, which includes extensive manager and index databases, via the Internet. Wilshire Compass also allows clients to do custom work and analysis on data that is not in the database.

- Wilshire Risk Management Consulting - Since the inception of our Consulting practice over 30 years ago, Wilshire has worked with clients to identify risks that will not be systematically rewarded and to implement structures that help minimize or eliminate those risks. Very few organizations are structured to combine plan sponsor know-how, analytical expertise and technical systems – essential elements required to support plan sponsor risk management. Wilshire's ability to leverage these resources puts us in a unique position to define best practices.

- Wilshire Consulting has extensive capabilities and experience in assisting clients in the area of alternative investments. We have a 20-year track record assisting clients to diversify their portfolios into alternative investments, including real estate, private equity, venture capital, hedge funds, and commodities. Wilshire has professional staff that is dedicated to sourcing and conducting due diligence on suitable investment managers or general partners. Wilshire Private Markets conducts due diligence on private equity, venture capital, secondary limited partnerships, and real estate. Unlike other firms, that sometimes act solely as advocates for alternative investments because it is in their financial interest to do so, Wilshire's due diligence extends to researching and formulating governance structures that allow large fund sponsors to take advantage of their size through lower fees, improved contract terms, and favorable access to investment opportunities.

  As part of the full-retainer consulting fee, Wilshire Consulting provides the following services relating to alternative investments:

  - Top-down asset allocation recommendations

- Portfolio structuring advice regarding the appropriate allocation to venture capital, leveraged buyout funds, secondaries, non-U.S. private equity, etc.
- Fund-of-funds searches – broadly diversified or niche products
- Implementation assistance to ensure that a client's portfolio is diversified not only by asset class, but also by vintage year
- Fee and partnership agreement negotiations for fund-of-funds vehicles

Wilshire believes that a fund-of-funds approach is generally optimal for most sponsors seeking to implement a private equity or hedge-fund allocation because it may offer superior diversification, access to top-tier General Partners / Managers, and more thorough fiduciary oversight than a direct investment program.

We actively recommend alternative assets to our current clients.

Wilshire Private Markets

Wilshire Private Markets provides institutional investors access to global private markets through portfolios that invest in venture capital, leveraged buyout and other alternative investment opportunities on a discretionary basis for those clients wishing to outsource this function. In addition, Wilshire Private Markets offers to clients a number of services, including: discretionary asset management services, non-discretionary asset management services, a range of advisory services, and portfolio administration.

Wilshire Funds Management

Wilshire Funds Management offers discretionary and non-discretionary "manager-of-manager" services as well as outsourcing solutions to financial institutions, commingled funds, and mutual fund complexes.

Wilshire Analytics

Wilshire Analytics provides investment technology solutions to a broad range of firms, including central banks, custodial banks, hedge funds, insurance companies, investment management firms, mutual funds, plan sponsors, state retirement boards, trust departments, universities and more. Wilshire Analytics products provide a multitude of services, including risk management, asset allocation, investment accounting, marketing support, trade order management, portfolio optimization, scenario analysis and performance measurement to multi-currency portfolios for multiple asset classes of public securities. Products include Wilshire Axiom^{SM}, Wilshire Atlas^{SM}, Wilshire Abacus^{SM}, Wilshire iQComposite^{SM}, Wilshire iQuantum^{SM}, Wilshire Compass InSite^{TM}, Wilshire Spectrum^{SM,}, Wilshire Trust Universe Comparison Service (Wilshire TUCS$^{®}$), and Wilshire Cooperative Universe Service^{SM} (WILCOP).

10. When did the firm begin providing investment consulting services to pension plans?

Wilshire Consulting has been providing investment consulting services to pension plans for more than 30 years.

11. Please indicate the percentage of the Firm's investment consulting revenue received during the most recent fiscal year from full service consulting relationships (where a full service relationship is defined to include advice on asset allocation, investment manager selection and performance measurement), as well as non-full service consulting relationships.

Wilshire believes that the most effective way to provide consulting services to our clients is through a full annual retainer relationship and almost all of our consulting relationships are on a full retainer basis. As a result, we do not have a breakdown of our firm's revenue available by specific consulting services that we provide. Wilshire Consulting is one of four business units at Wilshire Associates and it comprises approximately 25% of firmwide revenue. In total, Wilshire Consulting has 124 clients representing approximately $734 billion in assets under advisement as of March 31, 2012.

12. Does the Firm or any affiliate of the firm (including any subsidiary companies or parent company) provide any services in addition to investment consulting?

Yes. As mentioned previously, Wilshire is comprised of four distinct business units: Wilshire Consulting, Wilshire Private Markets, Wilshire Funds Management, and Wilshire Analytics. Each of these units offers services that are outside the general investment consulting realm. These services are described in detail below:

- Wilshire Consulting also offers **discretionary outsourcing solutions** to institutions. Rooted in Wilshire's three decades of experience, our investment expertise lies in the selection of investment managers, the blending of complementary managers to control risk, and the monitoring of these investment solutions to help enhance risk-adjusted performance. We provide customized investment programs based on the risk tolerance of the investors we represent.

- **Wilshire Compass** is a Windows-based application that provides institutional clients with analytical tools to evaluate managers, investment structures, and asset allocations, as well as access to Wilshire research. Wilshire Compass clients can receive updates to their analytical tools, which includes extensive manager and index databases, via the Internet. Wilshire Compass also allows clients to do custom work and analysis on data that is not in the database.

- Wilshire Risk Management Consulting - Since the inception of our Consulting practice over 30 years ago, Wilshire has worked with clients to identify risks that will not be systematically rewarded and to implement structures that help

minimize or eliminate those risks. Very few organizations are structured to combine plan sponsor know-how, analytical expertise and technical systems – essential elements required to support plan sponsor risk management. Wilshire's ability to leverage these resources puts us in a unique position to define best practices.

- **Wilshire Private Markets** provides institutional investors access to global private markets through portfolios that invest in venture capital, leveraged buyout and other alternative investment opportunities on a discretionary basis for those clients wishing to outsource this function. In addition, Wilshire Private Markets offers to clients a number of services, including: discretionary asset management services, non-discretionary asset management services, a range of advisory services, and portfolio administration.

- **Wilshire Funds Management** offers discretionary and non-discretionary "manager-of-manager" services as well as outsourcing solutions to financial institutions, commingled funds, and mutual fund complexes.

- **Wilshire Analytics** provides investment technology solutions to a broad range of firms, including central banks, custodial banks, hedge funds, insurance companies, investment management firms, mutual funds, plan sponsors, state retirement boards, trust departments, universities and more. Wilshire Analytics products provide a multitude of services, including risk management, asset allocation, investment accounting, marketing support, trade order management, portfolio optimization, scenario analysis and performance measurement to multi-currency portfolios for multiple asset classes of public securities. Products include Wilshire Axiom℠, Wilshire Atlas℠, Wilshire Abacus℠, Wilshire iQComposite℠, Wilshire iQuantum℠, Wilshire Compass InSite™, Wilshire Spectrum℠, Wilshire Trust Universe Comparison Service® (Wilshire TUCS®), and Wilshire Cooperative Universe Service℠ (WILCOP).

(a) If so, please indicate the percentage of total revenue received by the Firm (including any subsidiary companies) from investment consulting and other services listed below during the most recent fiscal year.

Source of Total Firm Revenue	Percent of Revenue (as of 2011)
Investment Consulting	25%
Human Resources, Actuarial and Benefits Consulting	None – Wilshire does not provide this service
Investment Management Services (excluding Fund-of-Funds)	Percentages of revenue are included in the four distinct business units identified in the table.
Fund-of-Funds Services	Percentages of revenue are included in the four distinct business units identified in the table.

Source of Total Firm Revenue	Percent of Revenue (as of 2011)
Broker/Dealer Services	None – Wilshire does not provide this service
Other (please specify):	
Wilshire Private Markets	16%
Wilshire Funds Management	24%
Wilshire Analytics	35%

(b) If the Firm has a parent company, please indicate the percentage of total revenue received by the parent company from the following sources during the most recent fiscal year?

Wilshire believes that the most effective way to provide consulting services to our clients is through a full annual retainer relationship and almost all of our consulting relationships are on a full retainer basis. As a result, we do not have a breakdown of our firm's revenue available by specific consulting services that we provide. Wilshire Consulting is one of four business units at Wilshire Associates and it comprises approximately 25% of firmwide revenue.

Wilshire Associates' revenue for 2011 is provided in the following table.

DIVISION	% OF TOTAL
Wilshire Analytics	35%
Wilshire Consulting	25%
Wilshire Funds Management	24%
Wilshire Private Markets	16%
Total	**100%**

Independence, Objectivity and Conflict of Interest

13. Does the Firm or any affiliate provide any services to, or receive any compensation from, investment managers, including but not limited to: (i) charges for inclusion in the Firm's database, (ii) conference fees, (iii) brokerage commissions, (iv) purchase of software, (v) consulting services, etc.?

(a) If so, please describe briefly the nature of these services and compensation.

Wilshire receives a substantial portion of its total revenues from the sale of analytics services that are provided by Wilshire Analytics, a separate business unit from Wilshire Consulting and Wilshire Funds Management. A significant amount of Wilshire Analytics' business is generated from portfolio managers, including most, if not all, of the largest organizations in the investment industry. In addition, Wilshire has entered into a relationship with a company to offer the Wilshire Compass product to Canadian customers, including portfolio managers,

analysts and marketing professionals. The Wilshire Consulting business unit has sold, and will continue to sell, Wilshire Compass to plan sponsors, foundations and other institutional investors. Numerous organizations that purchase or have purchased Wilshire Analytics solutions and services, Wilshire Compass, and/or formerly used Wilshire's former brokerage services are past, current and prospective portfolio managers of clients of Wilshire's Consulting and Funds Management business units. Wilshire sold its brokerage in 2004. Wilshire Funds Management also receives compensation from investment managers or institutions that may also be recommended for plan sponsors. A conflict exists because the Wilshire Consulting and Wilshire Funds Management personnel may be advising clients to hire or fire these portfolio managers. A conflict would also exist if Wilshire Consulting or Wilshire Funds Management personnel make recommendations or decisions portfolio managers who have invested in a fund advised by Wilshire.

Because Wilshire provides a variety of advisory and other services through separate business units, a client of one business unit may seek an introduction to or information about the products or services of another Wilshire business unit. A conflict of interest would arise if Wilshire recommends its own products or services to an advisory client because Wilshire would benefit from both the advice and the client's purchase of products and services based on that advice.

Another area for potential conflict is between Wilshire Consulting and Wilshire Funds Management. Wilshire Funds Management provides discretionary and non-discretionary "manager-of-managers" services to certain investment managers, as well as outsourcing solutions to financial institutions, commingled funds, and mutual fund complexes. Wilshire Funds Management receives compensation for providing these services to investment managers or institutions that may also be recommended for plan sponsors. Wilshire Funds Management also prepares the initial, written manager research used by Wilshire Consulting in preparing Wilshire Consulting's recommendations.

It is the policy of Wilshire Associates that recommendations of portfolio managers or custodians are based solely on the best interests of our clients. Furthermore, employees in Wilshire's Consulting, Private Markets, and Funds Management business units do not have internal access to the amounts that those clients pay Wilshire Associates for Analytics solutions and services. However, it is possible that Wilshire personnel may become aware of this information as a result of disclosure by a client, from public sources or otherwise. Finally, Wilshire has adopted procedures to provide clients of Wilshire Consulting directly with information about revenues that we receive from managers and other financial services vendors.

(b) Does the Firm or any affiliate provide any services or conduct any business with the retirement systems' current investment managers?

It is also the policy of Wilshire that all material facts concerning any conflicts of interest that do arise are disclosed to our clients. In addition to the conflicts of interest identified in Part 2A of Form ADV, Wilshire has implemented a program for providing a "conflicts check report" to clients.

To ensure that Wilshire Consulting's clients receive timely disclosure about potential conflicts of interest in the form of compensation received by other Wilshire business units, Wilshire has adopted procedures for offering to provide a "conflicts check report." This report provides information about the amount Wilshire bills and has billed managers and custodians for Wilshire services during the current calendar year and the most recently completed calendar year (to the extent that the managers and other vendors have consented to such disclosure).

A conflicts check report, will be sent directly to you from our Compliance Department under separate cover.

14. Does the Firm have any arrangements with broker-dealers under which it, or any affiliated company, will benefit if investment managers place trades for their clients with such broker-dealers?

No. Wilshire does not refer any clients to brokers/dealers.

15. Does the Firm accept a pension plan's brokerage commissions as payment for its services? If so, please explain briefly how it ensures that the plan receives best execution in securities transactions.

No. We do not accept commissions.

16. Please disclose any potential conflicts of interest that may arise from the Firm's representation of the Retirement Systems, including the activities of any affiliated companies.

Based upon our current role as the Investment Consultant for the City of Fresno Retirement Board, and based on the information provided by the City of Fresno and this RFP, Wilshire Consulting is not aware of any conflict of interest.

Wilshire receives a substantial portion of its total revenues from the sale of analytics services that are provided by Wilshire Analytics, a separate business unit from Wilshire Consulting and Wilshire Funds Management. A significant amount of Wilshire Analytics' business is generated from portfolio managers, including most, if not all, of the largest organizations in the investment industry. In addition, Wilshire has entered into a relationship with a company to offer Wilshire Compass product to Canadian

customers, including portfolio managers, analysts and marketing professionals. Wilshire Consulting sold, and will continue to sell, Wilshire Compass to plan sponsors, foundations and other institutional investors. Numerous organizations that purchase or have purchased Wilshire Analytics solutions and services, Wilshire Compass, and/or formerly used Wilshire's former brokerage services are past, current and prospective portfolio managers of clients of Wilshire Consulting and Wilshire Funds Management. Wilshire sold its brokerage in 2004. Wilshire Funds Management also receives compensation from investment managers or institutions that may also be recommended for plan sponsors. A conflict exists because the Wilshire Consulting and Wilshire Funds Management personnel may be advising clients to hire or fire these portfolio managers. A conflict would also exist if Wilshire Consulting or Wilshire Funds Management personnel make recommendations or decisions portfolio managers who have invested in a fund advised by Wilshire.

Because Wilshire provides a variety of advisory and other services through separate business units, a client of one business unit may seek an introduction to or information about the products or services of another Wilshire business unit. A conflict of interest would arise if Wilshire recommends its own products or services to an advisory client because Wilshire would benefit from both the advice and the client's purchase of products and services based on that advice.

Another area for potential conflict is between Wilshire Consulting and Wilshire Funds Management. Wilshire Funds Management provides discretionary and non-discretionary "manager-of-managers" services to certain investment managers, as well as outsourcing solutions to financial institutions, commingled funds, and mutual fund complexes. Wilshire Funds Management receives compensation for providing these services to investment managers or institutions that may also be recommended for plan sponsors. Wilshire Funds Management also prepares the initial, written manager research used by Wilshire Consulting in preparing Wilshire Consulting's recommendations.

It is the policy of Wilshire Associates that recommendations of portfolio managers or custodians are based solely on the best interests of our clients. Furthermore, employees in Wilshire's Consulting, Private Markets, and Funds Management business units do not have internal access to the amounts that those clients pay Wilshire Associates for Analytics solutions and services. However, it is possible that Wilshire personnel may become aware of this information as a result of disclosure by a client, from public sources or otherwise. Finally, Wilshire has adopted procedures to provide clients of Wilshire Consulting directly with information about revenues that we receive from managers and other financial services vendors.

The procedures include the quarterly conflicts check report which is currently provided to the Systems Board and Staff.

17. Has the Firm or anyone in the firm provided any gifts or other remuneration, or paid any expenses for travel, hotel, meals or entertainment for or on behalf of a Board member or staff of the Retirement Systems during the past twelve months. If so, please indicate the amount and purpose of the payments.

Yes. As Wilshire Consulting is the current investment consultant to the City of Fresno Retirement Systems, Wilshire has paid for dinner for Board Members and Staff while conducting due diligence trips during our relationship over the past 12 months. The amount paid for these dinners has not breached the limits of Form 700 nor Fresno's own policies. Furthermore, Wilshire Consulting abides by the policies set forth by our own Code of Conduct and the government ethics policies that govern our clients.

18. Has the Firm or anyone in the Firm had any professional relationship with the Retirement Systems' plan sponsors or legislative bodies during the past three years? If so, please describe the nature of the relationship.

Per Wilshire Consulting's Code of Conduct, Consultants shall avoid any activity with an investment management firm that is in conflict with the interest of a Client. Consultants are not permitted provide services to investment management organizations that directly pertain to business lines or products that could be recommended to Wilshire Consulting clients.

In addition, all outside business activities must have prior approval from Wilshire's Chief Compliance Officer and/or General Counsel.

Institutional Clients

19. How many institutional clients on a full service consulting basis does the Firm currently have? What are the total assets under advisement?

Wilshire Consulting provides customized investment solutions to 124 corporate and public defined contribution and defined benefit pension funds, foundations, endowments, healthcare, and insurance companies, representing approximately $734 billion in assets under advisement as of March 31, 2012. Of the 124 clients, 119 are full-retainer general investment consulting clients, representing approximately $732 billion in assets under advisement.

20. Please indicate the number of full service consulting clients that the Firm currently has by size of assets and type of client:

Below is a distribution of Wilshire Consulting full service consulting clients by asset size as of March 31, 2012:

Type of Client	Under $1 billion	$1 - 10 billion	$10 - 25 billion	Over $25 billion
Public Pension	8	14	3	6

Type of Client	Under $1 billion	$1 - 10 billion	$10 - 25 billion	Over $25 billion
Plans				
Corporate Plans	24	20	1	1
Union/Taft-Hartley Plans	0	0	0	0
Endowments, Foundations & Hospitals	29	5	0	0
Other	7	1	0	0
Total Number of Full Service Clients	68	40	4	7

21. Please indicate the number of full service public pension plan consulting clients that the Firm currently has by length of service with the firm:

Length of Service	Number of Clients
Less than 1 year	5
2 – 5 years	5
6 – 10 years	3
Over 10 years	18

22. How many client relationships were terminated, or the firm resigned, over the last three years ending June 30, 2012? What were the reasons for the termination or resignation and what was the total value of assets involved?

Over the past three years, Wilshire Consulting has lost 24 clients totaling $22.2 billion in assets under management.

CLIENT	YEAR TERMINATED	APPROX ASSET VALUE AT TERMINATION	REASON FOR TERMINATION
Windstream Communications	2012	$1,149	Changed vendors
Ferro Corporation	2012	$256	Outsourced
Kern County ERS	2011	$2,812	Changed vendors
Alegent Health	2011	$518	Changed vendors
Diocese of Pittsburgh	2011	$323	Changed vendors
Ameron International	2011	$156	Consolidation
University Community Hospital	2011	$86	Consolidation
Evangelical Lutheran Church Board of Pensions	2010	$2,867	Changed vendors
Children's Institute	2010	$132	Changed vendors

CLIENT	YEAR TERMINATED	APPROX ASSET VALUE AT TERMINATION	REASON FOR TERMINATION
Reynolds & Reynolds	2010	$223	Changed vendors
ThyssenKrupp USA, Inc	2010	$901	Changed vendors
Caremark Rx Inc.	2010	$606	Consolidation
Northwest Airlines	2010	$2,734	Consolidation
The Osborn	2010	$57	Outsourced
City of Memphis	2009	$1,612	Changed vendors
University of Pittsburgh	2009	$2,200	Changed vendors
New York Life Insurance	2009	$2,800	Changed vendors
Fletcher Jones Foundation	2009	$100	Changed vendors
Carnegie Mellon University	2009	$933	Changed vendors
Kaiser Aluminum and Chemical Corporation	2009	$400	Changed vendors
Buchanan Ingersoll	2009	$133	Consolidation
Avon Corporation	2009	$920	Discontinued use of a consultant
Los Angeles Library Foundation	2009	$13	Discontinued use of consultant
Medical Mutual of Ohio	2009	$315	Terminated Plan

Professional Staff

23. Please indicate the number of professional staff (not administrative or clerical staff) that the Firm currently employ in each of the following categories. (Each person should be assigned to only one category.)

Wilshire Consulting is currently comprised of the following full time employees:

CLASSIFICATION	#
Consultants	26
Actuarial Consultants	3
Economists / Investment Research	3
Client Service / Analysts	25
Analytical Systems Staff	21
Marketing	7
Other (administrative)	3
Total Professional Staff	88

24. Please indicate the turnover in professional staff (including consultants, analysts, firm management and key executives) during the last three years.

Below is a list of senior professional employee departures over the past three years at the Vice President-level and above within Wilshire Consulting.

NAME	POSITION	DATE LEFT	REASON FOR LEAVING	REPLACED BY
David Kraemer	Vice President, Wilshire Compass	2011	Mutual Agreement	Charles Lazar
Todd Kniola	Vice President, Wilshire Compass	2010	Mutual Agreement	Kris Kelleher
Mike Tudor	Vice President, Wilshire Compass	2010	Mutual Agreement	None*
James Rice	Vice President	2009	Personal	Karim Simplis

- While there was no direct replacement for these individuals, their client relationships were transferred to other consulting teams. If necessary, the capacities of these teams were expanded through new hires.

Below is a listing of senior professional employees who have joined Wilshire Consulting over the past three years:

NAME	POSITION	DATE HIRED
Charles Lazar	Mananging Director	2012
Kris Kelleher	Vice President	2012
Patrick Lighaam	Vice President	2011
Ned McGuire, FSA, CFA, FRM	Senior Associate	2011
Karim Simplis	Senior Associate	2009
Ali Kazemi	Vice President	2009*

*Joined Wilshire Analytics in 2001.

25. Please provide the average number of clients per consultant, both lead and support consultant. Indicate the maximum limit, if any, on the number of clients assigned per consultant.

Role as Consultant	Average No. of Clients	Maximum Limit per Consultant
Lead Consultant Thomas Toth CFA, Managing Director	See our response below	See response below
Support Consultant Andrew Junkin, CFA, CAIA, Managing Director	See our response below	See response below

Tom and his team of professionals maintain 25 client relationships.

Wilshire Consulting does not have a specific limit to the number of clients we intend to accept. We carefully review workloads to ensure that we do not overextend our consultants and to try to achieve a high level of satisfaction to our current clients. With 26 consultants among 124 clients, Wilshire has one of the lowest clients to consultant ratios in the industry of 5 to 1.

Our growth is contingent upon our ability to attract and retain qualified investment professionals. Wilshire requires that its senior consultants possess fund sponsor experience, MBA or CFA designations, and / or investment management experience. With a senior consulting staff of highly trained and technically competent consultants, The City of Fresno would always be covered by at least one senior investment consultant.

26. How many staff have acquired professional designations such as the CFA, CAIA, FSA, etc.? How many are currently enrolled in these programs?

Professional Designation As of 8/31/12	Acquired	Enrolled
Chartered Financial Analyst (CFA)	20	14
Chartered Alternative Investment Analyst (CAIA)	2	0
Fellow of the Society of Actuaries (FSA)	1	1
Other (please specify):		
Certificate in Investment Performance Measurement (CIPM)	0	1
Financial Risk Manager (FRM)	1	0
Certified Public Accountant (CPA)	1	0
PhD	2	0

27. Which of the following types of compensation are provided to professional staff? Please indicate whether the compensation applies to all staff, senior staff, key employees, or principals only.

Type of Compensation	All/Senior/Key/Principals
Salary	All professional staff
Bonus	All professional staff
Profit Sharing	Not applicable
Stock Ownership	Key professional staff
Stock Options	Not applicable
Equity Participation	Not applicable
401(k) or Other Deferred	All professional staff
Other (Please specify):	-

28. How many professional staff will be assigned to this account?

The City of Fresno will continue to be served by a team of eight Wilshire Consulting's professionals led by Thomas Toth, CFA. Tom will be assisted by Andrew Junkin, CFA, CAIA. In this role, Tom will work closely with Andrew with respect to consulting services and advice provided to the City of Fresno. They maintain knowledge of your fund and its investments, and are available to assist with day to day communications, projects, and meetings. While any number of Wilshire professionals will work on various facets of the City of Fresno's required services, Tom and Andrew will be the focal point for delivery of all services. Having several professionals assigned to the account ensures that they will be familiar with all client issues.

Below is a listing of Tom Toth's team of consulting professionals, including their years of experience and education:

NAME	TITLE	EXPECTED ROLE	YR ENTERED WILSHIRE	YR ENTERED INV INDUSTRY	EDUCATION
Thomas Toth	M.D.	Lead Consultant	2004	1999	MBA University of Southern California, CFA
Andrew Junkin	M.D.	Back-up Consultant	2005	1995	MBA University of Penn., CFA, CAIA
Michael Schlachter	M.D.	Client service and support	1999	1996	MBA University of Chicago, CFA
Alex Browning	S.A.	Client service and support	2006	1999	MBA University of Southern California
Jerry Hsu	S.A.	Client service and support	2000	2000	BA University of Southern California
Catherine Trzeciak	S.A.	Client service and support	2000	2000	MBA University of Pittsburgh, CPA
Ting Yeh	S.A.	Client service and support	2003	2000	BA University of California, Berkeley
Alex Ford	Assoc.	Client service and support	2008	2008	BSBA University of Colorado at Boulder

M.D. = Managing Director V.P.=Vice President S.A.=Senior Associate Assoc = Associate

29. Please provide the following information on the lead consultant and, if applicable, the support consultant to be assigned to this account:

	Lead Consultant	**Support Consultant**
Name	Thomas Toth, CFA	Andrew Junkin, CFA, CAIA
Title	Managing Director	Managing Director
Role and/or Function	Provides consulting services to the firm's public, corporate, foundation and endowment clients in the Denver office.	Provides consulting services to the firm's public, corporate, foundation and endowment clients in the Denver office.

		Lead Consultant		Support Consultant	
Number of Years of Experience	**Institutional Investments**	11 years	11 years	17 years	15 years
	Investment Consulting		8 years		15 years
	With the Firm		8 years		7 years
Educational Qualification (including Name of College/University)		MBA, University of Southern California BA, University of California, San Diego		MBA University of Pennsylvania BS, University of Oklahoma	
Number of Accounts as Lead Consultant		6		10	
Names of the Three Largest Accounts		1. The City of Fresno Retirement Systems 2. US Army and Air Force Exchange Service 3. Dallas Employees' Retirement Fund		1. California Public Employees Retirement System (CalPERS) 2. Non Discloseable Corporation 3. US Army and Air Force Exchange Service	

30. Please provide the name and title and/or role of any other members of the team to be assigned to this account.

Mr. Toth's team of professionals assigned to the City of Fresno relationship are described in Question 28 above. Biographies of the firm's professional staff assigned to the City of Fresno Retirement Systems can be found in the **Appendix, Tab 2**.

In addition, all Consulting teams have specialized resources in the form of vast stores of financial data, proprietary analytical tools, and a staff of technical experts comprise a set of firm-wide resources from which the consulting team will draw. These include specialized departments dealing with asset allocation, manager research, operations and compliance, fundamental investment research, and technology and data services. An overview of these areas follows.

Wilshire Consulting's Research Group is comprised of our Asset Allocation Group and Investment Research Group. The Asset Allocation Group focuses on developing and maintaining Wilshire's proprietary asset / liability models, while the Investment Research Group performs in depth analysis of all aspects of an institutional investment program, including, for example, capital and alternative market research, investment structure research and industry analysis.

Under a single research platform, the merging of our Asset Allocation Group and Investment Research Group ensures the collaboration of distinct, yet complimentary areas of Wilshire's consulting focus. This uniform structure maximizes the research input of Wilshire's lead actuary, who is critical in assisting on research issues pertaining both directly and indirectly to asset allocation issues.

Headed by Steve Foresti, Managing Director, Wilshire Consulting's Research Group has a distinct structure that combines the efforts of dedicated independent researchers (independent of client service responsibilities) and senior consultants, who ensure client advocacy and the direction of research work toward germane subjects that are of particular interest to our clients.

Steve Foresti, *Managing Director*
Steve Foresti, a Managing Director with Wilshire Associates, is a member of Wilshire Consulting. Mr. Foresti works in Wilshire's Santa Monica, California office and heads Wilshire Consulting's research efforts, including the development of asset class assumptions for use in Wilshire's asset allocation process. Throughout his tenure at Wilshire, he has worked directly with large institutional investors of all types: public and corporate defined benefit plans, foundations, endowments and insurance companies. Mr. Foresti serves as chair of Wilshire Consulting's Investment Committee and is a member of Wilshire's 401-k and Manager Research Oversight Committees.

Mr. Foresti joined Wilshire in 1994 and brings more than 19 years of capital market experience. Prior to joining Wilshire Consulting, Steve spent nine years with Wilshire Analytics where he developed and supported quantitative attribution and risk models.

Before joining Wilshire, Mr. Foresti worked in Morgan Stanley's Mutual Fund Division (formally Dean Witter Inter-Capital) where he acted as a liaison between the firm's portfolio management team and sales force. He has worked extensively with mutual funds of all investment types (i.e. equity, fixed income, money market). Mr. Foresti has also authored papers on a broad range of topics across both the traditional and alternative investment areas. He holds a B.S. in Finance from Lehigh University and a M.B.A. in Finance & Accounting from the University of Texas at Austin.

Russ Walker, *Vice President*
Mr. Walker, a Vice President with Wilshire Associates, is a member of Wilshire Consulting. Mr. Walker joined Wilshire in 1988 and currently conducts investment research within Wilshire Consulting.

Prior to his investment research work, Mr. Walker served as a consulting team liaison for Wilshire Consulting's Performance Measurement Group. His duties included heading Quality Assurance for Wilshire Analytics, as well as client service and support for several Analytics software applications. Mr. Walker earned a B.A. from the University of Pittsburgh.

Michael Rush, CFA, *Vice President*
Michael Rush, a Vice President with Wilshire Associates, is a member of Wilshire Consulting. Mr. Rush currently conducts investment research within Wilshire Consulting

Mr. Rush joined Wilshire in 2001 and brings more than 15 years of industry experience. Prior to his work at Wilshire, Mr. Rush worked for another consulting company and an investment management firm. He has authored papers on a broad range of topics including "Inflation In Depth" and "Risk-Focused Diversification." Mr. Rush also has developed the "WHIP Score," a quantitative methodology for summarizing past returns. He holds B.S. and M.S.I.A. degrees from Carnegie Mellon University. Mr. Rush is a CFA charterholder.

Our Asset Allocation Group consists of Stephen Marshall, Managing Director, Ned McGuire, FSA, CFA, FRM, Senior Associate and Emmanuel Salta, Ph.D., Associate. Stephen and Ned are responsible for the day-to-day support of the senior consultants in the asset allocation work they do for clients. Emmanuel is responsible for maintaining Wilshire's proprietary asset allocation models and conducting asset allocation studies, Biographies are provided below:

Stephen Marshall, *Managing Director*
Stephen Marshall, a Managing Director with Wilshire Associates, is a member of Wilshire Consulting. He leads Wilshire Consulting's asset allocation efforts.

Mr. Marshall brings more than 13 years of experience in the pension industry with previous responsibilities for two large actuarial firms. Mr. Marshall joined Wilshire in 2003. He earned his BS in Mathematics from the University of New Orleans.

Ned McGuire, FSA, CFA, FRM, *Senior Associate*
Ned McGuire, a Senior Associate with Wilshire Associates, is a member of Wilshire Consulting. His primary responsibilities are to develop, communicate, and deliver customized risk management solutions, including asset-allocation studies, plan design and investment strategy reviews, for defined benefit, defined contribution, endowment and foundation clients. He also provides ongoing monitoring services, and researches and maintains Wilshire's proprietary asset allocation models.

Prior to joining Wilshire in 2011, Ned served as a Risk Management and Actuarial Consultant at an investment consulting firm, overseeing asset-liability management and pension risk projects. Ned is a Fellow of the Society of Actuaries, and a Certified Financial Risk Manager. He holds the Chartered Financial Analyst designation and is a member of the CFA Institute. Ned graduated from University of North Carolina with an MS in Operational Research and from St. Olaf College with a BA in Mathematics.

Emmanuel Salta, Ph.D., *Associate*
Emmanuel Salta, an Associate with Wilshire Associates, is a member of Wilshire Consulting. Dr. Salta is responsible for researching and maintaining Wilshire's proprietary asset allocation models and conducting asset allocation studies.

Dr. Salta joined Wilshire in 2008. He earned his M.S. and Ph.D. degrees in Financial Mathematics from Florida State University. He also completed his M.A. in Mathematics from Wesleyan University in Middletown, CT.

Asset Allocation

31. When did the Firm begin conducting asset allocation studies for pension plans? How many studies (formal comprehensive studies rather than informal reviews or updates) has the Firm conducted over the past three years?

Wilshire has been conducting asset allocation studies for pension plans since 1972. Over the past three years, Wilshire Consulting has conducted over 300 asset allocation studies.

32. Please describe the Firm's asset allocation methodology by responding to the following questions:

(a) Is the asset allocation process based on analysis of both assets and liabilities of the pension plan, or assets only?

Wilshire's asset allocation studies are based on the analysis of both assets and liabilities of the pension plan.

(b) Is the asset allocation process stochastic or deterministic with respect to (i) assets and (ii) liabilities?

Wilshire Consulting conducts both stochastic and deterministic modeling when projecting asset and liability growth. The pros and cons are listed below:

Pros / Cons:
Stochastic modeling shows the entire distribution of outcomes. Deterministic modeling shows only a point estimate of outcomes.

Deterministic modeling can be useful in putting some statistics in context; however, it is important to look at projections stochastically as well. A policy or benefit decision may look reasonable when viewed at the median; however, when looked at stochastically, decision makers have more robust data to make decisions.

(c) Please explain briefly how the modeling of the assets is linked to or integrated with the modeling of the liabilities.

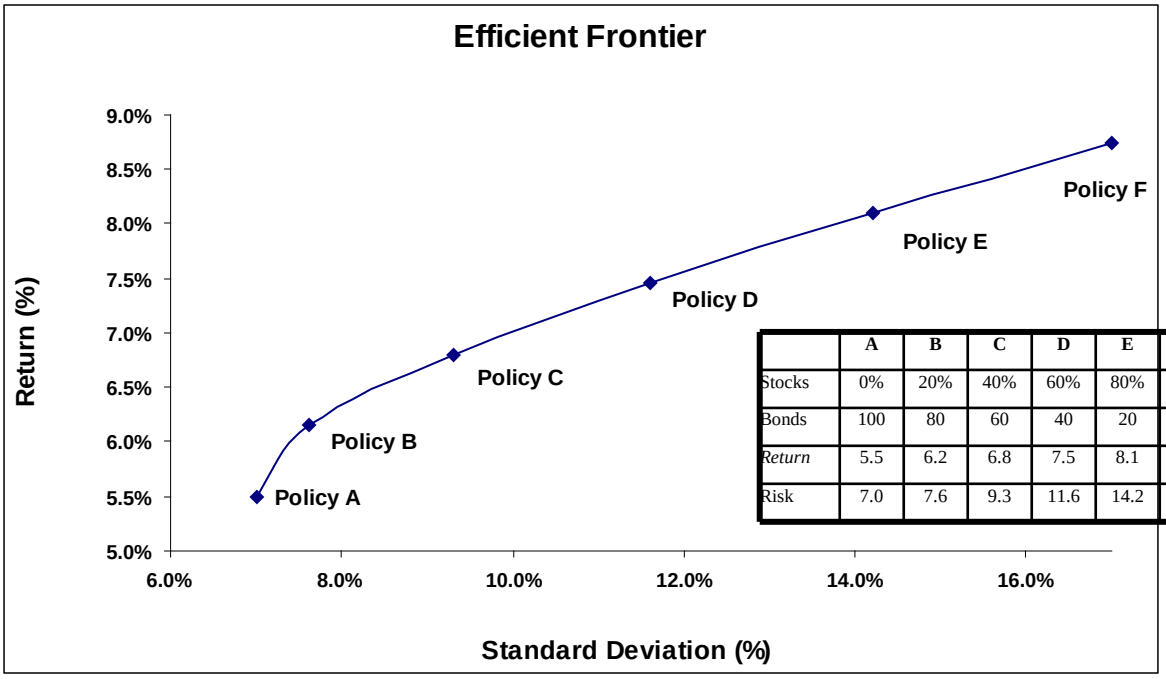
Wilshire has extensive experience in providing clients with ongoing advice and specific analyses for effective liability management. With pension plans, most

investment policies are derived from a review of the liabilities of that plan. The liability management analytical tools maintained at Wilshire are based upon a standard mean variance optimization system. Liabilities are especially sensitive to changes in interest rates, making those liabilities highly correlated with the fixed income market. By analyzing assets and liabilities together in the optimization framework, Wilshire is best able to understand the way assets and liabilities will move together for different asset mix strategies.

Finally, the Wilshire model can project simulated results into the future, allowing clients to simulate possible future outcomes of alternative investment strategies over a period of ten years or more. Specifically, the models can hypothetically project the expected value of the investment deficit or surplus under alternative investment strategies after ten years. All else being equal, clients should elect to employ an investment program that seeks to reduce a deficit or increase a surplus over time. However, the control of (deficit) / surplus volatility is also important. The Wilshire models measure the impact of higher levels of equities on the volatility of the (deficit) / surplus. Thus, clients are also able to hypothetically pre-experience the potential year-to-year changes in the (deficit) / surplus for each alternative investment strategy.

Asset / Liability Modeling

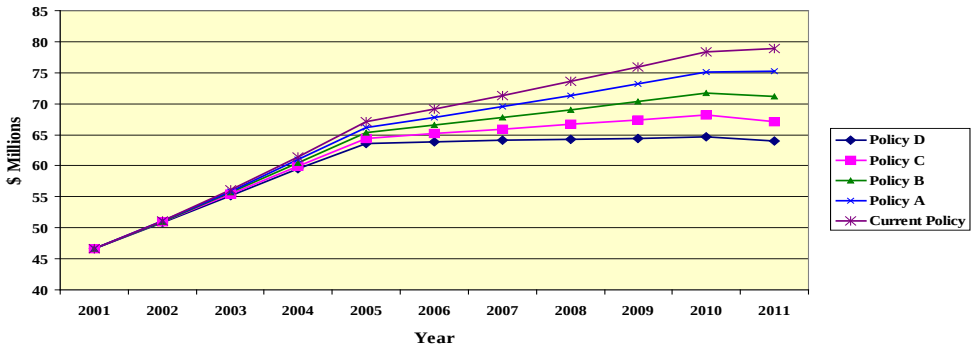
Wilshire employs all internally developed proprietary asset/liability models which can be customized based upon our clients' respective needs and benefit structures. Our model works by jointly projecting the asset and liability characteristics of a benefit plan for periods up to 20 years. It is a "Monte Carlo" program that simulates thousands of possible investment returns for each of several asset mixes on the efficient frontier or any pre-selected asset mix. These simulations are based on the return, risk and correlation projections as projected by Wilshire's annual asset allocation study. Our model simultaneously projects liabilities, contributions and benefits consistent with the plan's cost method, investment assumptions, and actuarial assumptions for equivalent periods of time. Asset projections and liability projections are integrated and internally consistent.



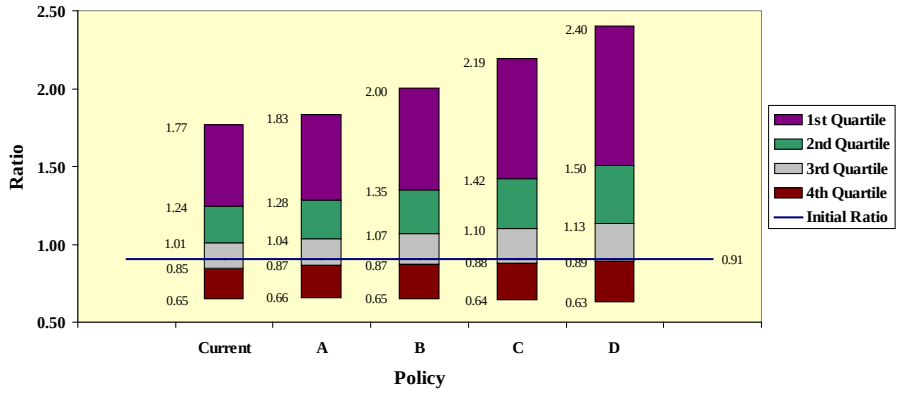
	A	B	C	D	E	F
Stocks	0%	20%	40%	60%	80%	100%
Bonds	100	80	60	40	20	0
Return	5.5	6.2	6.8	7.5	8.1	8.8
Risk	7.0	7.6	9.3	11.6	14.2	17.0

For most clients, the modeling begins with a selection of five to ten different "efficient" asset mixes. Efficient asset mixes are those that offer the highest level of return for a given risk level. Wilshire uses its return, risk, and correlation (or diversification) forecasts to generate an "efficient frontier" containing a range of efficient mixes. The figure above shows an example. Wilshire, with client input, selects a number of these efficient asset mixes to be used in the asset / liability simulation. The two figures on the page below show example output from the simulations: future contribution rates and assets-to-liabilities after 10 years.

Expected Contribution Rates



Distribution of Possible Ratios of Assets-to-Liabilities after 10 Years



The figures above are only two examples of hundreds of possible types of output that Wilshire generates from its asset / liability simulation. Consultants select those analyses that they believe best fit the factors that their clients are interested in. Wilshire's extensive analytical tools inventory in asset allocation gives clients the ability to examine asset allocation issues from many different perspectives. Simulation analytical tools is available for actuarial funding, FASB projections, stress testing, spending formula, asset / liability matching, surplus optimization and much more.

Optimal Asset Mix

Wilshire works closely with clients to determine the optimal asset mix for their needs. This also means deciding how much risk to take. This can only be done by close evaluation of the tradeoffs between long-term funding and possible short-term losses from negative investment returns. The clear identification of objectives and the hierarchy of the objectives is an important part of this strategy. We have found that there is no simple formula; rather, our responsibility is to give the decision-makers the information and tools they need to be thoroughly informed.

After selecting the optimal asset mix, Wilshire helps formulate policy ranges for each asset class and when to rebalance to target weights.

Wilshire recommends performing an asset / liability study at the inception of a new relationship. This initial study is intended to help your consulting team gain a better understanding of your plan and insure that your fund currently has the optimal asset allocation given your objectives. Wilshire's standard practice is to conduct subsequent asset / liability studies once every three to five years. These studies should be conducted more frequently if there is a meaningful change to the plan, such as a freeze in new benefit accruals, or change to the financial condition of the plan sponsor.

(d) Does the process incorporate analysis of different economic scenarios?

Yes. Wilshire's asset allocation studies incorporate scenario analysis. The Scenario module enables users to investigate what would happen to portfolio(s) under certain extreme market scenarios. The types of scenarios that can be specified by users are historical, hypothetical and mixed. Historical scenarios analyze what would happen to a portfolio/benchmark if a specific historical event, such as September 11, were to take place again. To create the scenario, users specify a historical period over which to apply factor returns to a given portfolio. This set of selected factor returns are applied to a portfolio as of a selected evaluation date so that the portfolio exposures on that date are used. Hypothetical scenarios analyze what would happen to a portfolio/benchmark if a specific event were to take place. To create the scenario, you would specify a hypothetical set of factor returns that the system will use to analyze the portfolio/benchmark return. A mixed scenario combines more than one historical or hypothetical scenario at the same time to a portfolio/benchmark, balancing their effect according to a user specified probability. To create the scenario, users specify a weighted average of two or more historical and/or hypothetical scenarios to derive a third, mixed scenario. The system will use the weighted average of the factor returns in the scenarios that are included in the mixed scenario to evaluate the return of the portfolio/benchmark.

The methodology used for scenario analysis is identical to the methodology used for factor attribution reports except that the factor returns used are those specified in the scenario and the security-specific returns are assumed to be zero (0).

The Scenario report details both the total and relative return of the portfolio and the sources of the return in terms of exposures to Wilshire's proprietary factor model.

Also, note that the current settings do not allow a choice for the investment horizon, the revaluation method and the factor model, which are currently under development. The investment horizon will allow defining the reporting period for the scenario analysis that is generated. Currently, this option is set to zero days as a default. This means that the scenario is assumed to be instantaneous, and time decay effects such as yield, roll-down, and theta are not taken into account in the scenario. The revaluation method defines the effect of re-pricing of the options. Currently, the delta revaluation method is available, and this means that only the linear effect of options is taken into account. The factor model is the specific factor model used for the factor attribution analysis to which the scenarios are applied.

33. Does the Firm analyze the impact of asset allocation over different future time periods? If so, what future time periods and why?

Wilshire typically simulates relevant plan statistics over a period of 10-years. This period is appropriate in that it gives decision makers the tools necessary to know the long term effects of their decision. Periods longer than that are sometimes simulated when a plan expects significant changes beyond the 10-year projection period.

34. How does the Firm analyze the trade-off between risk and reward of alternative asset allocation policies for a defined benefit pension plan? How does it define and measure reward? How does it define and measure risk?

Wilshire believes that return should only be measured and evaluated in the context of risk taken. The primary tools we use to describe, quantify and evaluate risk are Wilshire Atlas^{SM}, Wilshire Axiom^{SM}, and Wilshire iQuantum^{SM} which incorporate best-of-class equity and fixed income risk models. These ex-ante, multi-factor risk models use advanced statistical and investment theory. They are used by asset managers around the world to provide a comprehensive understanding of the investment risks in their portfolios. We believe it is a major comparative advantage to have the developers and designers of these systems at our disposal.

How does it define and measure reward?

The core mission of a defined benefit plan is to pay promised benefits. Wilshire would define an asset allocation to be preferable (or, "more rewarding") if it decreases the cost of funding benefits, or alternately, if it increased the probability that an asset value was sufficient to pay for promised benefits.

How does it define and measure risk?

There are multiple sources of risk to be evaluated in a defined benefit plan. First and foremost is the risk of asset shortfall such that assets are insufficient to pay for promised benefits. The primary objective of Wilshire's Commitment Driven Investing (CDI) model is to identify the optimal asset allocation which minimizes the risk of shortfall at an acceptable probability of success given current and projected contributions. Secondarily, there is active risk. Some asset classes can only be implemented in an active fashion (e.g., Private Equities). However, passive alternatives exist for nearly every other institutional asset class alternative. Thus, to the degree the plan sponsor chooses to implement active management, Wilshire utilizes appropriate benchmarks to calculate tracking error, which is the key risk measurement at both the asset class and individual manager levels. We also employ downside risk measures for hedge funds and hedge fund-of-funds. The degree to which a plan sponsor implements active management versus the passive alternative is the main gauge for risk tolerance below the asset allocation level. Establishment of a risk budget at the asset class and total fund level is another means to evaluate risk tolerance.

35. Please list the various steps or components of the asset allocation model (e.g. mean variance optimization, projection of liabilities, multi-period simulation, etc.).

We believe that strategic asset allocation is the key to a successful investment program. Industry research and our experience prove that the asset allocation decision has the greatest impact on a portfolio's long-term return and risk profile. Wilshire embraced this important concept the 1970's when Wilshire became an early innovator in creating the industry's integrated asset/liability analysis/simulation models. Since that time, Wilshire has added to its asset allocation credentials by performing thousands of asset allocation studies and continually evaluating and enhancing our methodology.

Wilshire has continued this tradition by now offering a new approach to asset / liability modeling, which we call "Cost / Risk Optimization". This innovative approach is based on the dual objective of maximizing the safety of benefits at a given level of resources while simultaneously minimizing the long-term costs at an acceptable level of risk. Risk is defined differently for specific investor objectives, and our approach explicitly minimizes the risk that is important to the fund. Our approach incorporates the best interests of the plan participants, taxpayers, and other stakeholders.

Wilshire utilizes proprietary optimization methodologies (as well as existing ones, such as mean-variance and surplus optimization) to select a comprehensive set of efficient policy portfolios. A stochastic simulation program illustrates the impact of the policy portfolio choice on funded levels, unfunded liabilities, and required resources. These simulations are based on forward-looking expectations (return, risk and correlations) for the major asset classes as projected by Wilshire's annual asset allocation study. The model simultaneously projects assets, actuarial liabilities, resources / revenues and benefits consistent with the plan's actuarial and capital market assumptions for as many years as needed.

The optimal policy portfolio is a function of the client's current financial condition, tolerance for various risks, overall investment objectives, liquidity needs, applicable legal constraints, unique considerations with respect to plan design or participants, and the capital market opportunities available to the client.

<u>The Decision Process</u>

The following diagram depicts a four-step process that Wilshire uses for recommending an allocation policy.

Step 1: Capital Markets Research
1. Annual capital market assumptions review
2. Historical and forward-looking analysis
3. Traditional and non-traditional asset classes

Step 2: Liability Analysis
1. Liability – the stream of benefit payments on the plan's design and population
2. Volatility of the benefit stream
3. Projected actuarial and accounting liabilities

Step 3: Asset / Liability Optimization
1. Proprietary models – safer benefits at lower cost
2. Traditional optimization methods (mean-variance and surplus optimization)

Step 4: Optimal Policy Portfolio
1. Stochastic simulation of selected policy portfolios
2. Optimal likelihood of shortfall
3. Optimal level of contributions
4. Optimal volatility of components of actuarial and accounting reports
5. Optimal asset side characteristics

Wilshire consultants work with each client to identify the opportunity set of asset classes to be considered and alternative portfolios that best meet long-term goals while minimizing short-term risks. After selecting the optimal policy portfolio, Wilshire prepares a written asset allocation policy that includes target allocations as well as a plan for ongoing "rebalancing" of assets to the target asset allocation.

Step 1: Capital Markets Research

Wilshire believes that the quality of asset class assumptions for return and risk is as important as the sophistication of its asset allocation technology. Clients comment favorably upon the intellectual process Wilshire uses to forecast asset class expected returns, risk, and correlations.

Wilshire uses forward-looking valuation models that capture market consensus expectations rather than relying solely on the common practice of extrapolating past performance to project future performance. For example, a dividend discount model used to forecast stock returns and Treasury Inflation Protection Security ("TIPS") yields are compared to traditional Treasury yields to forecast inflation. Wilshire published a paper in The Journal of Portfolio Management (1997) describing a unique method for forecasting returns and risk on alternative investments. This is particularly important because most practitioners overstate returns and understate risk on alternative investments. Wilshire prepares a research report for its clients at the beginning of every

year describing its recommended long-term asset class return and risk assumptions for all the asset classes. A copy of our 2012 Asset Allocation Report is included in the **Appendix, Tab 3**.

Step 2: Liability Analysis

Wilshire's Commitment Driven Investing (CDI) model focuses on the true liability of the plan – the stream of benefit payments promised to plan participants. The structure of the liability is at the front and center of the analysis. In order to develop the stream of benefit payments, Wilshire relies on long-term demographic assumptions developed by the plan's actuary for the purposes of the annual actuarial valuation. Wilshire's objective is to expand the work your actuary has already performed by including the volatility of the liability and incorporate the resulting object ("the pension commitment") into the asset allocation framework. As a result, the model presents an internally consistent approach to both actuarial and asset allocation work.

The plan has made a commitment to provide retirement benefits to plan participants. The goal of the plan sponsor is to fund the pension commitment – the stream of benefit payments determined by the plan's population and benefit package. The volatility of the benefit stream is, for the most part, caused by inflation. The plan's actuary usually provides a point estimate for each payment in the stream (otherwise, Wilshire uses its proprietary models to do so). Then Wilshire analyzes the volatility of the stream and incorporates potential benefit improvements, if any. Given the inflation-related nature of the volatility of the benefit stream, it is critical to ensure that our modeling of inflation impacts the asset and liability sides in a consistent manner. The augmented benefit stream is one of the cornerstones of Wilshire's asset / liability optimization model.

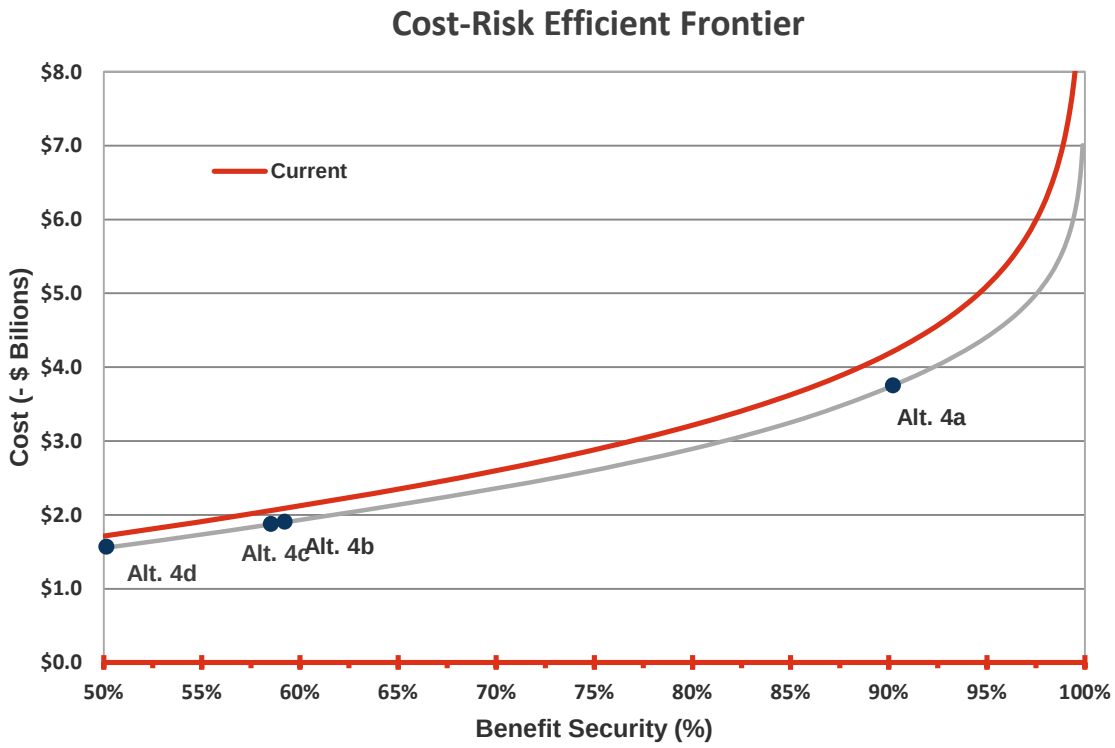
The actuarial and accounting liabilities are important, as well. Starting with the plan's demographic characteristics at the present, Wilshire models future actuarial and accounting liabilities by moving the existing population forward, utilizing the demographic assumptions provided by the actuary. Future entrants usually replace the plan participants who leave active status. Wilshire's models can incorporate growing or declining active populations as well. As a result, Wilshire generates a series of actuarial and accounting liabilities for as many years as needed. Some of those liabilities are modeled in a deterministic way, while others are modeled in a stochastic way in order to stay consistent with certain bond portfolios on the asset side. All these liabilities are subsequently used in stochastic simulations of the plan's reporting condition.

Step 3: Asset / Liability Optimization

Optimization procedures are at the heart of the portfolio selection process. Wilshire has extensive experience in dealing with traditional portfolio optimization methodologies such as mean-variance and surplus optimizations. We realize that mean-variance

optimization is still popular among many plan sponsors; surplus optimization has gained some popularity lately as well. Consequently, these methodologies are readily available for our clients. However, we believe that Wilshire's optimization technique is a superior approach as it is directly related to the plan's core business.

The following principles are the foundation of Wilshire's approach to asset / liability optimization: 1) The core business of a pension plan is to fund the pensions promised to participants; 2) The primary risk to the core business is to run out of money before the plan has met the terms of its commitments; 3) The role of the policy portfolio is to manage the riskiness of the plan's core business.



This recognition implies two objectives for the optimal policy portfolio. First, for every level of future contributions, it is desirable to produce the policy portfolio that maximizes the likelihood that this level of contributions is sufficient to fund promised benefits. In this case, it is in the best interests of the plan participants to maximize the safety of benefits at reasonable cost. Second, for each level of risk, it is desirable to minimize the present value of future contributions that is sufficient to fund promised benefits at this risk level. It is clearly in the best interests of shareholders to minimize the cost of providing pension benefits at a reasonable risk level. Wilshire can demonstrate that both objectives lead to the same set of policy portfolios. The resulting efficient frontier ("the cost-risk frontier") contains policy portfolios that take into

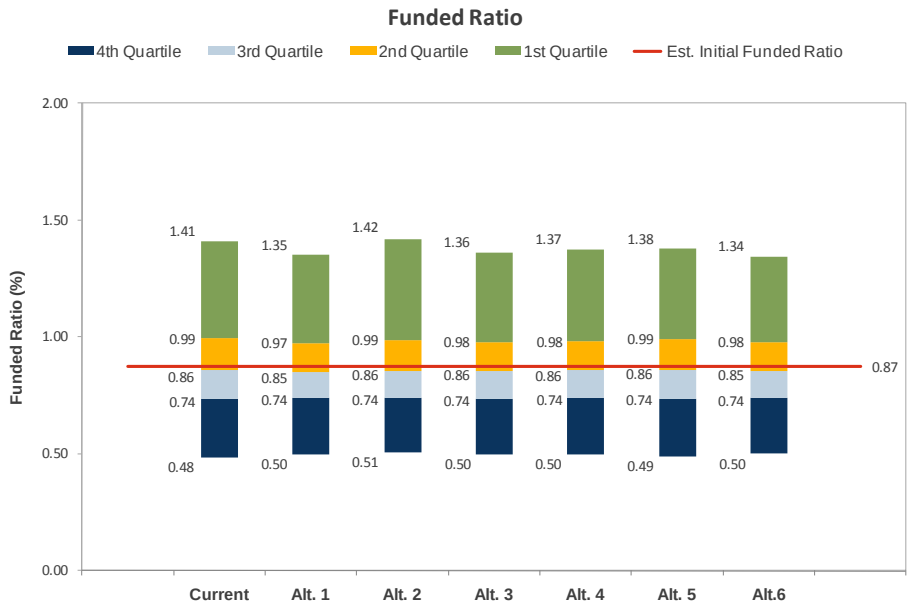
account the primary concerns of plan participants ("safer benefits") and plan sponsor ("lower cost"). The frontier also helps to identify the tradeoff between the plan's potential funding shortfall and future costs.

Wilshire considers each client's unique financial condition to determine the most appropriate measurements of risk. Wilshire then selects the optimization methodology that properly reflects the client's risk profile. In most cases, as recognition of the fact that each client faces a multitude of risks, Wilshire builds several efficient frontiers based on various definitions and measurements of risk.

Step 4: Optimal Policy Portfolio

The optimal policy portfolio can be selected based on an acceptable level of contributions or shortfall risk. However, Wilshire recognizes the importance of the components of actuarial and accounting reports. We employ stochastic simulation to allow the client to hypothetically pre-experience the impact of alternative investment strategies on the components of those reports in the future.

Several policy portfolios – from conservative to aggressive – are selected on the frontier(s) generated during the asset / liability optimization step. A stochastic simulation program illustrates the impact of the policy portfolio choice on funded status, unfunded liabilities, and required contributions. These simulations are based on forward-looking expectations (return, risk and correlations) for the major asset classes as determined by Wilshire's annual Asset Allocation Study. The model simultaneously projects assets, actuarial liabilities, contributions and benefits consistent with the plan's actuarial and capital market assumptions for as many years as needed. The policy portfolios that generate unacceptable volatility levels of the funded status, unfunded liabilities, or required contributions are rejected.



Wilshire works closely with clients to determine the optimal policy portfolio for their needs. This also means deciding how much risk to take. This can only be done by close evaluation of the tradeoffs between long-term funding and possible short-term losses from negative investment returns. The clear identification of objectives and the hierarchy of the objectives is an important part of this strategy. We have found that there is no simple formula; rather, our responsibility is to give decision-makers the tools they need to make an informed decision.

Like any asset / liability model, the input assumptions have a great deal of impact on the results. We spend considerable internal resources in developing our annual view of expected returns, volatility, and correlations. In performing our studies, we examine the sensitivity of the results to initial assumptions and discuss the import of this with our client. In cases where the staff of investment professionals will likely have well-defined views on the capital markets, we would incorporate their views into the range of initial inputs. By varying these inputs and discussing the ramifications thoroughly with our clients, we are able to convey a more robust and richer picture of the risk / return tradeoffs.

After selecting the optimal asset mix, Wilshire formulates policy ranges for each asset class and identifies the rebalancing strategy. Wilshire recommends performing an asset / liability study at the inception of a new relationship. This initial study is intended to help your consulting team gain a better understanding of your plan and insure that your fund currently has the optimal asset allocation given your objectives. Wilshire's standard practice is to conduct subsequent asset / liability studies once every three to five years. These studies should be conducted more frequently if there is a meaningful change to the plan, such as a freeze in new benefit accruals, or to the financial condition of the plan sponsor.

(a) Which components of the asset allocation model were internally developed, and which, if any, are licensed from one or more third-party vendors?

Wilshire employs all **internally developed** proprietary asset / liability models which can be customized based upon our clients' respective needs and benefit structures.

(b) Please provide the names of the third-party vendors if any.

Not applicable.

36. How are investment assumptions with respect to returns, volatility and correlations – i.e. the inputs to the asset allocation model – developed?

Wilshire believes that the quality of asset class assumptions for return and risk is as important as the sophistication of its asset allocation technology. Clients comment favorably upon the intellectual process Wilshire uses to forecast asset class expected returns, risk, and correlations. The assumptions used in our asset allocation model are developed in-house by our Investment Research Group.

Wilshire uses forward-looking valuation models that capture market consensus expectations rather than relying solely on the common practice of extrapolating past performance to project future performance. For example, a dividend discount model is used to forecast stock returns and Treasury Inflation Protection Security ("TIPS") yields are compared to traditional Treasury yields to forecast inflation. Wilshire published a paper in The Journal of Portfolio Management (1997) describing a unique method for forecasting returns and risk on alternative investments. This is particularly important because most practitioners overstate returns and understate risk on alternative investments. Wilshire prepares a research report for its clients at the beginning of every year describing its recommended long-term asset class return and risk assumptions for all the asset classes. These assumptions are then updated on a quarterly basis to reflect market movements.

Following are Wilshire's forward-looking return, risk, and cash flow assumptions for the major asset classes covered in our annual Asset Allocation Report, as of January 2012.

	Total Return			Risk		
	2011	**2012**	Change	2011	**2012**	Change
Investment Categories:						
U.S. Stocks	7.25 %	**7.50 %**	0.25 %	16.00 %	**17.00 %**	1.00 %
Dev ex-U.S. Stocks	7.25	**7.50**	0.25	17.00	**18.00**	1.00
Emerging Mkt Stocks	7.25	**7.50**	0.25	24.00	**26.00**	2.00
Global Stocks	7.50	**7.80**	0.30	16.00	**17.05**	1.05
Private Markets	9.70	**10.25**	0.55	26.00	**27.50**	1.50
Cash Equivalents	2.50	**1.50**	-1.00	1.25	**1.25**	0.00
Core Bonds	3.75	**2.85**	-0.90	5.00	**5.00**	0.00
LT Core Bonds	4.75	**3.20**	-1.55	10.00	**10.00**	0.00
TIPS	3.25	**1.65**	-1.60	6.00	**6.00**	0.00
High Yield Bonds	5.50	**5.45**	-0.05	10.00	**10.00**	0.00
Non-U.S. Bonds (Hdg)	3.40	**2.50**	-0.90	4.00	**3.50**	-0.50
U.S. RE Securities	5.50	**5.05**	-0.45	15.00	**15.00**	0.00
Private Real Estate	6.30	**5.80**	-0.50	12.25	**12.25**	0.00
Commodities	4.25	**4.00**	-0.25	13.00	**13.00**	0.00
Real Asset Basket*	6.65	**5.85**	-0.80	8.10	**7.75**	-0.35
Inflation:	2.25	**2.00**	-0.25	1.75	**1.75**	0.00
Total Returns minus Inflation:						
U.S. Stocks	5.00	**5.50**	0.50			
U.S. Bonds	1.50	**0.85**	-0.65			
Cash Equivalents	0.25	**-0.50**	-0.75			
Stocks minus Bonds:	3.50	**4.65**	1.15			
Bonds minus Cash:	1.25	**1.35**	0.10			

* 2011 Real Assets Basket return & risk are derived from the 2012 basket structure and 2011 sub-asset class assumptions

These assumptions are intended to apply to a 10 year planning horizon. A full analysis of Wilshire's asset class assumptions can be found in our 2012 Asset Allocation Report, which is provided in the **Appendix, Tab 3**.

While this report is generated completely in-house, Wilshire consultants will work closely with the client to incorporate the investment professionals' views on the capital markets in testing different projected scenarios. We realize that no matter how thoughtful and well-developed our assumptions are, they are still assumptions and there is room for differing views and for analysis of the impact that different views would have on optimal asset allocation.

(a) To what extent are these assumptions derived from historical data or trends, or reflect current market conditions, or are based on future expectations of inflation, real yields, risk premiums, etc.? Please explain briefly.

For public markets, asset class return assumptions are produced on a 'forward looking' basis. We do not simply project forward returns based upon the long-term historical average because we believe this produces either overly optimistic or overly pessimistic views on asset classes which then leads to inappropriate asset allocation recommendations. Thus, we have developed proprietary models for equities and high yield bonds to incorporate current market information which is likely to heavily influence returns over our ten to fifteen year assumptions

forecast horizon. These respective models are described in greater detail in our annual assumptions paper, which has been included in the **Appendix, Tab 3**.

Public markets risk and correlation assumptions are based upon our evaluation of rolling historical actual results, with more weight given to recent trends. The reason we use this historical data is that unlike returns, risk is a fairly consistent measure and can be relied upon to be of a similar magnitude over our forecast horizon (i.e., U.S. equities have historically had an annual one standard deviation of risk of 17% over ten year periods with little variation).

For private markets, our return expectations are based upon drawing parallels to the public markets where appropriate. Additionally, we have studied actual returns earned by large institutional private market portfolios covering a 15 year time period. We source our data from our in-house database and then check the resulting estimates against those published by *Venture Economics*, a firm specializing in measuring private equity returns. Risk estimates for the Private Market asset class pose a unique challenge because infrequent private market investment valuations preclude the calculation of short-term periodic returns. As a result, projections of risk based on accounting data consistently understate risk. Wilshire's approach has thus been to estimate risk by drawing parallels to the public markets and adjusting for any added risk contributed by financial leverage, the absence of liquidity, or greater business risk.

(b) Who in the firm is involved in developing the assumptions?

Wilshire Consulting's Research Group is comprised of our Asset Allocation Group and Investment Research Group. The Asset Allocation Group focuses on developing and maintaining Wilshire's proprietary asset / liability models, while the Investment Research Group performs in depth analysis of all aspects of an institutional investment program, including, for example, capital and alternative market research, investment structure research and industry analysis.

Headed by Steve Foresti, Managing Director and a 16-year veteran at Wilshire Associates with over 19 years of industry experience, Wilshire Consulting's Research Group has a distinct structure that combines the efforts of dedicated independent researchers (independent of client service responsibilities) and senior consultants, who ensure client advocacy and the direction of research work toward germane subjects that are of particular interest to our clients.

Our Asset Allocation Group consists of Stephen Marshall, Managing Director, Ned McGuire, FSA, CFA, FRM, Senior Associate and Emmanuel Salta, Ph.D., Associate. Stephen and Ned are responsible for the day-to-day support of the senior consultants in the asset allocation work they do for clients. Emmanuel is

responsible for maintaining Wilshire's proprietary asset allocation models and conducting asset allocation studies.

(c) How often are these assumptions updated or revised?

Wilshire prepares a research report for its clients at the beginning of every year describing its recommended long term asset class return and risk assumptions for all the asset classes. This asset allocation report is a perennial favorite among Wilshire clients and others and describes in detail how Wilshire develops its assumptions. The return assumptions are then updated on a quarterly basis to account for market movements and their effect on prospective returns.

Wilshire has been forecasting asset class returns using forward looking assumptions since 1981 with a strong record of success for ten-year periods. We believe the methods used in this report are intuitive, robust and, as the recent environment has demonstrated, provide sufficient flexibility to adapt to a rapidly changing landscape. Wilshire's forecasting methodology has generally shown a strong degree of accuracy over intervals of ten or more years and we believe is superior to short-term estimates that are notoriously error prone. As a result of this long-term forecasting horizon, Wilshire's assumptions typically experience only a moderate level of change from year to year. However, during volatile or transformative market environments, such as those experienced in recent years, one can expect more significant forecasting adjustments. The changes reflected in 2011 assumptions suite are more subdued than those embedded in Wilshire's asset class forecasts through the 2007 to 2010 period.

37. If the asset allocation model includes pension liabilities, how are liability projections developed? Please explain briefly.

Please refer to our response to question 32 (c) above.

(a) Does the firm use its own actuarial assumptions and methodology or does it rely on the benefit projections of the retirement system's actuary?

Wilshire relies on the Plan's actuarial assumptions to forecast liabilities. However, as far as the benefit projections, Wilshire can use the system's own projections or we can project our own.

(b) Does the Firm have any actuarial staff and expertise of its own?

Yes. As mentioned earlier, our Asset Allocation Group consists of Stephen Marshall, Managing Director, Ned McGuire, FSA, CFA, FRM, Senior Associate, and Emmanuel Salta, Ph.D., Associate. Stephen and Ned are responsible for the day-to-day support of the senior consultants in the asset allocation work they do

for clients. Emmanuel is responsible for maintaining Wilshire's proprietary asset allocation models and conducting asset allocation studies.

38. Are there any asset classes or market segments that are NOT included in the asset allocation model?

Wilshire has extensive experience and expertise in most institutional asset classes. Wilshire develops long-term (i.e., 10-year +) assumptions for expected return, risk and correlations for the following 19 asset classes set forth below.

	Equity						Fixed Income							Real Assets					
									LT				ex-US	Real Estate				Real	
	US Stock	Dev ex-US Stock	Emg Stock	Glbl ex-US Stock	Glbl Stock	Prvt Mkts	Cash	Core Bond	Core Bond	LT Treas	TIPS	High Yield	Bond (Hdg)	US RES	Glbl RES	Prvt RE	Cmdty	Asset Bskt	US CPI
Expected Return (%)	7.25	7.25	7.25	7.50	7.50	9.70	2.50	3.75	4.75	3.75	3.25	5.50	3.40	5.50	5.75	6.30	4.25	6.20	2.25
Expected Risk (%)	16.00	17.00	24.00	17.25	16.00	26.00	1.25	5.00	10.00	11.00	6.00	10.00	4.00	15.00	12.00	12.25	13.00	7.50	1.75
Cash Yield (%)	2.00	3.00	2.00	2.75	2.50	0.00	2.50	3.75	4.75	3.75	3.25	5.50	3.40	4.00	4.00	3.00	2.50	3.25	n.a.
Correlations:																			
US Stock	1.00																		
Dev ex-US Stock (USD)	0.80	1.00																	
Emerging Mkt Stock	0.70	0.68	1.00																
Global ex-US Stock	0.83	0.96	0.84	1.00															
Global Stock	0.93	0.93	0.82	0.96	1.00														
Private Markets	0.75	0.65	0.63	0.69	0.75	1.00													
Cash Equivalents	-0.05	-0.09	-0.05	-0.08	-0.07	0.00	1.00												
Core Bond	0.29	0.12	0.00	0.09	0.18	0.32	0.20	1.00											
LT Core Bond	0.31	0.16	0.01	0.12	0.21	0.33	0.10	0.95	1.00										
LT Treasury	0.19	0.10	-0.05	0.06	0.12	0.24	0.12	0.92	0.97	1.00									
TIPS	-0.05	0.05	0.00	0.04	0.00	0.01	0.15	0.20	0.17	0.20	1.00								
High Yield Bond	0.55	0.40	0.50	0.46	0.52	0.34	-0.10	0.24	0.31	0.21	0.01	1.00							
Non-US Bond (Hdg)	0.16	0.26	-0.01	0.19	0.19	0.27	0.10	0.68	0.65	0.67	0.25	0.27	1.00						
US RE Securities	0.35	0.25	0.30	0.29	0.32	0.35	-0.05	0.15	0.18	0.14	0.15	0.45	0.00	1.00					
Global RE Securities	0.49	0.53	0.52	0.57	0.55	0.54	-0.03	0.14	0.19	0.14	0.17	0.49	0.06	0.86	1.00				
Private Real Estate	0.34	0.24	0.29	0.27	0.31	0.33	-0.03	0.24	0.24	0.19	0.16	0.48	0.08	0.82	0.72	1.00			
Commodities	0.00	0.20	0.24	0.23	0.14	0.05	-0.05	0.00	0.00	0.00	0.20	0.08	0.00	0.20	0.26	0.21	1.00		
Real Asset Basket	0.50	0.39	0.44	0.44	0.40	0.34	-0.03	0.19	0.20	0.15	0.43	0.40	0.11	0.66	0.71	0.69	0.56	1.00	
Inflation (CPI)	-0.10	-0.15	-0.13	-0.15	-0.14	-0.10	0.10	-0.12	-0.12	-0.12	0.10	-0.08	-0.08	-0.10	-0.06	-0.07	0.20	0.11	1.00

This material is intended for informational purposes only and should not be construed as legal, accounting, tax, investment, or other professional advice.

While not all asset classes are included within a single asset allocation analysis, we work with clients individually to determine the right breadth of asset classes given their unique considerations and objectives. In addition, we custom-model asset classes as required for clients with specific needs.

(a) If so, how is the allocation to these asset classes determined in the asset allocation study?

Wilshire does not make 'blanket' asset allocation recommendations as we take into account each client's return expectations, risk tolerance, and unique characteristics such as liquidity needs, legal and tax status, and other objectives. However, we tend to prefer well diversified investment structures comprised of multiple asset classes, both public and private. The majority of our clients have equity-oriented asset allocations, i.e., 60+% in a mix of equity assets such as U.S. public equities, private equities, and non-U.S. equities, developed markets and emerging markets. The broad asset categories we typically recommend are as follows:

U.S. public equities

Private equities
- venture capital
- LBO's
- mezzanine debt
- distressed debt
- non-U.S. private equity
- secondaries

Non-U.S. equities
- developed markets
- emerging markets

Investment grade bonds
- corporates, mortgages, agencies
- TIPS
- CMBS

High yield bonds

REITs

Private Real Estate
- opportunistic (e.g. development)
- timber
- offices, hotels, apartments, etc.

Hedge funds
- absolute return
- portable alpha
- long / short
- market neutral
- arbitrage
- directional

(b) If alternative or non-traditional asset classes (such as real estate, private equity, hedge funds, etc.) are included, how does the model deal with non-market valuations and/or non-normal distribution of returns for these asset classes?

For private markets, our return expectations are based upon drawing parallels to the public markets where appropriate. Additionally, we have studied actual returns earned by large institutional private market portfolios covering a 15 year time

period. We source our data from our in-house database and then check the resulting estimates against those published by Venture Economics, a firm specializing in measuring private equity returns. Risk estimates for the Private Market asset class pose a unique challenge because infrequent private market investment valuations preclude the calculation of short-term periodic returns. As a result, projections of risk based on accounting data consistently understate risk. Wilshire's approach has thus been to estimate risk by drawing parallels to the public markets and adjusting for any added risk contributed by financial leverage, the absence of liquidity or greater business risk.

In general, Wilshire views the use of private equity as a type of leveraged equity return rather than a diversification tool. The linkage between these markets is quite intuitive, as private equity returns are subject to the receptiveness of the capital markets to generate potential outsized returns.

Buyouts (U.S. and Non-U.S.)

Our basic assumption is that buyouts will exhibit similar business risks as publicly traded companies but will have greater financial risk. Therefore, it is appropriate to model buyout returns using public market proxies for equity returns and financing costs. Wilshire's buyout return forecast is 50 basis points higher than last year's return expectation and is in line with the 0.25% increase in our underlying public equity forecast. Expected returns in our 2012 assumptions paper are intended to be net returns. For example, the 8.75% expected return for buyouts should be viewed as net of all fees, including carried interest.

Wilshire's risk forecasts for U.S. and non-U.S. buyouts are 30.0% and 32.0%, respectively. These forecasts are considerably higher than the 17.0%-18.0% risk levels we assume for public stocks and are attributable to greater financial risk due to a more leveraged capital structure in buyout companies. Our leverage assumption is based on a capital structure with 60% debt and 40% equity, representing 2x leverage for buyouts, which is consistent with historical levels.

Venture Capital

Wilshire's return assumption for venture capital is 11.50%, up 1.00% from last year and built up from our underlying view on the public markets. The valuation of venture capital investments can vary by manager. A mix of current and stale valuations becomes an issue when aggregating venture performance for use in asset allocation. Therefore the presence of stale valuations suggests that, to the extent venture capital performance is related to public market performance, it will have some sensitivity to both recent and past returns. By including lagged data from the public markets, a more correct beta can be derived versus one naively found with a regression on contemporaneous data.

Our analysis indicates that venture capital exhibits a beta of 1.7 to the public market.

This return estimate makes intuitive sense as investors should demand a return premium for making venture investments considering the uncertainty inherent in investing in new ventures.

Distressed Debt

Wilshire utilizes the Citigroup Global Markets Bankrupt/Defaulted Debt Index as a public market proxy for distressed debt investments. The index contains virtually all issues in default. The 20.00% risk forecast and correlations reported in our annual assumptions paper for distressed debt are based upon historical measurements for the Citigroup Index. The 7.75% expected return for distressed debt comes from our view that successful distressed investors take equity-like control positions in distressed companies with significant upside potential but less risk than other buyouts because companies have already encountered financial distress. A key benefit of including distressed debt in a private markets portfolio is its low correlation with public asset classes, particularly stocks, when compared with other private market asset classes.

Mezzanine Debt

Wilshire views mezzanine debt like a convertible bond. However, unlike publicly traded convertibles with characteristics combining stocks and bonds, mezzanine debt possesses characteristics combining buyouts and high yield bonds. Consequently, we expect their return and risk measures to lie somewhere between buyouts and high yield bonds. Therefore, the 7.50% return and 20.00% risk forecast for mezzanine debt in our 2012 assumptions paper is based upon a blend of our buyout and high yield assumptions.

Private Markets Portfolio

The return and risk forecast for a diversified private markets portfolio is provided in our 2012 assumptions paper. The makeup of the private portfolio is:

U.S. Buyouts	50%
Non-U.S. Buyouts	20%
Venture Capital	20%
Distressed Debt	5%
Mezzanine Debt	5%

When the components are geometrically calculated with a lognormal assumption, the forecast return for a diversified private markets portfolio is 10.25%, which is 2.75% above Wilshire's 7.50% expected return for U.S. stocks. The expected risk for the diversified private markets portfolio is 27.5%, which is slightly more than 1.5x the forecasted risk of U.S. stocks.

U.S. Real Estate Securities

Wilshire is forecasting an expected return of 5.05% for U.S. real estate securities, down 45 basis points from last year's forecast of 5.50%. Since 2007, Wilshire has

derived its forecast from combining a trailing 12-month average Equity REIT dividend yield with an expected dividend growth rate equal to three-quarters of long-run inflation[1].9 During the market turbulence of 2009, however, we modified this methodology. As REIT yields have been more reflective of their history since then, we are back to our standard process for formulating our REIT assumption.

Non-U.S. Real Estate Securities

Wilshire's usual practice is to assume comparable non-U.S. and U.S. returns within a global asset class containing regional components. Within this context we often employ a market or model based approach to forecasting the U.S. component return, which we then build into a non-U.S. component assumption. Similar to our equity assumptions, we forecast a long-term return for U.S. real estate securities and then expand that result to serve as our non-U.S. real estate securities return forecast. While the historical record for global real estate securities is short, it does not support a non-U.S. return premium and until strong evidence supports otherwise, we are comfortable assuming a similar return outside of the United States. This approach leads to our 5.05% long-term return forecast for non-U.S. real estate securities.

Private Real Estate

Private real estate investments can be divided into three primary subsets: core, value-added, and opportunistic. Wilshire's return assumption for private real estate is 5.80%, down from 6.30% last year, and is based on a private real estate portfolio consisting of 70% core, 15% value-added and 15% opportunistic property investments. The 50 basis point decrease in our private real estate return is comparable to the reduction in our public real estate assumption and reflects the combination of a falling yield environment and current financing rates. These private real estate asset weightings are flexible and dependent on a client's investment objectives. Please refer to our assumptions paper for Wilshire's assumptions for individual private real estate asset classes.

As mentioned above, the private real estate portfolio can be broken up into three categories: core, value-added and opportunistic. Core real estate investments are characterized by larger properties with more stable cash flows, less utilization of financial leverage and a lower level of risk than the other real estate investment strategies. Value-added investments in the real estate market are characterized by improvements in a number of attributes. Value-added real estate investors are able to create wealth by developing new properties as well as redeveloping underperforming properties through physical, financial and operational upgrades. Investing in opportunistic real estate occurs after the cyclical nature of assets in different geographies and property types cause market values to fall. The opportunistic investor attempts to successfully exploit inefficient market pricing through property selection and market-timing while at the same time managing risk appropriately. For

[1] Examining REIT dividend growth historically, Wilshire found that REITs were able to pass through about three-quarters of long-run inflation through rent and dividend increases.

a more detailed discussion of the private real estate market, please refer to Wilshire's 2006 research paper "Private Real Estate Investing."

Hedge Funds

Wilshire generally views Hedge Funds as implementation vehicles rather than as a stand-alone asset class. However, we do construct Hedge Fund assumptions to support our clients who utilize Hedge Funds as a separate asset class within asset allocation studies. Wilshire's hedge fund expected returns and risks are based on a building block approach that includes the following three components:

Risk Free Return
+ Systematic / Market Return (i.e. beta)
+ Active Return (i.e. alpha)

We use this building block approach to develop assumptions across hedge fund styles, which can be blended in a customized way to represent broader, hedge fund exposure. Wilshire currently models the following four hedge fund styles, which are displayed with their long-term return expectations from our 2012 asset class assumptions suite (each return assumption includes an expectation of 2% active return with 4% active risk, making manager selection a critical aspect of successful hedge fund investing):

- Market Neutral = 3.50%
- Event Driven = 4.70%
- Equity Long/Short = 7.10%
- Directional / Tactical = 5.90%

Wilshire's default forecast for blended "Absolute Return" strategies is 5.55% and is based on a blend of 30% Market Neutral, 20% Event Driven, 40% Equity Long/Short and 10% Directional / Tactical. These allocations are completely customizable as we model hedge fund structures to meet individual client objectives.

39. How frequently would the Firm conduct a formal comprehensive asset allocation study within the flat fee proposed in Part C?

Wilshire's standard practice is to conduct subsequent asset / liability studies once every three to five years. These studies should be conducted more frequently if there is a meaningful change to the plan, such as a freeze in new benefit accruals, or change to the financial condition of the plan sponsor. Asset allocation studies are included in Wilshire's flat retainer fee arrangement.

(a) What type of follow-up analysis or review of asset allocation would the Firm perform in between comprehensive asset allocation studies?

Wilshire takes a strategic view of asset allocation, and generally intends the policy to remain fairly stable over time. Since we regularly reevaluate the capital market opportunities, and because the risk tolerance of an organization changes over time, Wilshire will usually review a client's asset allocation policy every three years.

(b) How frequently would such follow-up reviews be conducted?

In between these triennial reviews, we would recommend revisiting the policy only if there are significant changes to the client's financial profile or if structural changes to the capital markets warrant change.

40. What approach does the Firm recommend toward rebalancing the asset allocation of the Fund? Please explain briefly.

Simulations testing different rebalancing strategies over a 20 year period point to an optimal policy range around the target allocation of plus or minus 3% for sponsors wanting a low level of benchmark risk and 5% for sponsors accepting moderate levels of benchmark risk. Allocations to smaller asset classes should have policy ranges of plus or minus 1% to 3%. Under normal circumstances, Wilshire recommends that the asset mix be rebalanced back to policy target allocations when the ranges are exceeded.

There are circumstances where a tactical allocation may be warranted. Wilshire focuses tactical reallocation recommendations around sub-asset classes such as small cap U.S. equity, emerging markets, high yield, non-U.S. fixed income securities, inflation-protected securities (such as TIPS) and real estate investment trusts (REITS). We generally recommend that our clients maintain allocations to these asset classes, but recognize that there are times when valuations are either markedly attractive or unattractive. When excessive valuations are observed (or other risk factors are high), we would maintain an allocation near the low end of the rebalancing range, or eliminate the allocation if appropriate. When valuations are particularly attractive, we will maintain an allocation at the high end of the rebalancing range.

We also implement tactical allocation via the retention of managers that have demonstrated the capability to make such decisions. For example, in the fixed income asset class, "core plus" mandates have proven to offer an effective means for investors to gain exposure to sub-asset classes that fall outside of the Lehman Aggregate Index, such as high yield, non-U.S. fixed income securities and inflation-protected securities. For example, certain developed markets non-U.S. equity managers have demonstrated skill in investing in companies domiciled in emerging markets on an opportunistic basis.

To summarize our view, Wilshire believes that the asset allocation policy should primarily be managed with a strategic focus and implemented utilizing disciplined rebalancing policies; however, we believe that incremental value may be added through small tactical allocation decisions when market conditions dictate.

41. Does the Firm advocate short-term or tactical changes in asset allocation in response to changing market conditions? If so, what approach does it recommend toward making such changes?

Wilshire updates its capital market expectations annually so that each asset allocation study we do includes our most recent expectations. A change in market environment does not typically initiate a new study. However, we do consider the effect of long trending changes on our client's portfolios and communicate our thoughts in terms of how these changes may impact them. In general, we perform asset allocation studies at least every three years in order to determine whether market conditions over a short term period warrant changes to the client's policy objective. When severe market dislocations occur, we will recommend an asset allocation analysis be undertaken in light of potential impact from current market conditions. There was the case during the 2001-2002 equity market downturn.

Wilshire would recommend any valued-added "opportunity" in which we had confidence and believed was appropriate for our client's portfolio. However, we do not generally recommend opportunistic asset allocation changes. We can demonstrate to clients that while some trends can persist for many months or years (i.e. value outperforming growth over the past 5 years), they are not permanent and, more importantly, vary in length and are difficult to predict. Certain clients have the ability within their own organizational structures to be more flexible with opportunistic strategies. In these cases, Wilshire will work with those clients to evaluate the degree to which an opportunity may be believed to exist. Wilshire has provided opportunistic guidance and advice in these cases which has benefited our clients.

Wilshire's annual capital market expectations are forward-looking for an expected 10-year period. So, asset allocation decisions are based on long term expectations. However, as mentioned we are current in our knowledge of a market environment and do use that knowledge in determining our final recommendations.

Investment Manager Search and Selection

42. What is the Firm's approach towards investment manager search and selection? Does it undertake every manager search starting from scratch? Or does it develop and maintain a list of preferred managers for various asset classes and investment mandates and recommend managers from that list?

Wilshire's manager research process involves two distinct steps: (1) manager research and evaluation and (2) client-directed manager searches and selection. Both the evaluation and the selection processes rely on our manager research staff, databases and technology, evaluation model, and Wilshire consultants.

Manager Search Process

Where a client requests that Wilshire conduct a manager search, the process starts with our dedicated Manager Research Group, which conducts evaluation, monitoring and research of manager products using our manager database, formal scoring process, and consultant involvement through investment committees.

The following exhibit illustrates the manager due diligence process:

Manager Database

Wilshire collects and maintains its proprietary and internally developed database of investment managers and advisors. Currently Wilshire's investment product database is divided into the following major groupings:

ASSET CLASS	CURRENT NUMBER OF INVESTMENT PRODUCTS
U.S. Equity	3,836
Non-U.S. Equity	2,337

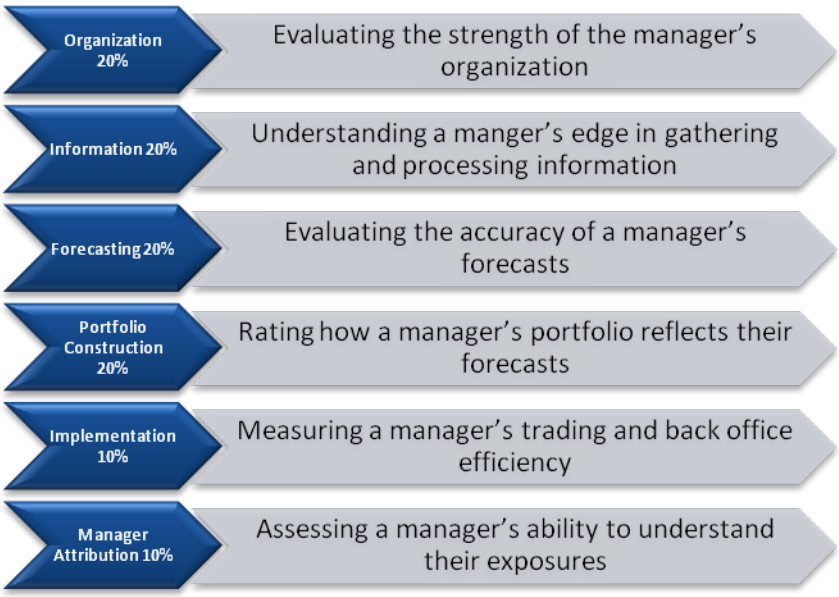
ASSET CLASS	CURRENT NUMBER OF INVESTMENT PRODUCTS
U.S. Fixed Income	1,674
Global Fixed Income	592
U.S. Equity	3,836
TOTAL	**8,439**

Currently, Wilshire's manager databases cover over 26,000 mutual funds and approximately 5,000 hedge funds. We maintain separate databases of approximately 70 private equity fund-of-funds products and 100 private real estate managers.

Manager Scoring

Wilshire believes that the most important step – and most time consuming – in manager selection is the qualitative evaluation. Our qualitative model is comprised of six separate and distinct components that represent a comprehensive and forward-looking analysis of an investment management operation. The graph below outlines our manager evaluation model.

Wilshire Manager Research Qualitative Scoring Model



The six components and their relative weightings are described below along with examples of areas of evaluation, analysis, and comparison to peers.

Organization (20%) – For an investment strategy to thrive, it must be the product of a solid team and a stable organization. Here, we look for teams with experience, maturity

and vision. We look for organizational cultures that can attract and maintain such teams through ownership structures, compensation levels and benefits.

Information Gathering (20%) – It is generally accepted in financial theory that new information drives security prices at the margin. This is observed empirically as well. Therefore investment managers must have a robust infrastructure for gathering and processing information related to securities. Specifically, we want to know how much managers know about any specific company / security which is in their investable universe. We are interested in the depth of the information gathering process, not necessarily the breadth. We like to see managers with multiple sources of information. We like managers that gather the information through their own efforts, such as on-site meetings and industry conferences. We like managers to understand what information is largely discounted in the present security price and what information is unique, or non-consensus.

Due to regulations regarding the disclosure of financial information, the wide availability of electronic databases and the rapid dissemination of information, it is difficult for managers to develop truly unique sources of information. This is an area where it is hard to stand out, yet easy to fall behind. However, it is a crucial component of the investment process and is the foundation on which the next stage is built.

Forecasting (20%) – Once a manager has information, he / she develops an outlook for the security. This outlook will always imply a forecast. In most cases the manager arrives at a valuation for the security which is the manager's forecast of the "intrinsic" value. Basically, we would like to know how predictive are the manager's forecasts or how accurate are the manager's valuations. In evaluating the forecasting process we want to understand how valuations are created, the robustness and sensibility of the process. We want to understand under what condition the valuation process is likely to work. Are we likely to see that environment in the investment style to which the manager belongs? What is the weakness of the valuation process? What are the critical variables that the manager needs? Is it a key discount rate, earnings growth or all of the above? Finally, we want to assess the degree to which the manager understands these same issues. No manager is likely to have the "silver bullet" for every situation and we are more comfortable with managers who understand the limitations of their process.

Portfolio Construction (20%) – Building upon a developed forecast, the manager must bring additional information for constructing the portfolio. Not only should the manager know which securities he / she would like to own, but also understand the risks inherent in each security and then reconcile the return opportunity with that risk. Therefore, we look at how managers consider risk, how they create positions, how they manage or trim positions and how they terminate positions. Each of these decisions requires balancing the return opportunity with risk.

***Implementation (10%)* –** It is not sufficient to know which paper portfolio is well suited to provide positive excess return. One must also go out into the market and obtain that portfolio. Our process assesses the manager's ability to transact in the marketplace and qualitatively considers the impact of trading on the overall success of the strategy. Strategies in which there are a sizable amount of assets or those which have a high level of turnover need to have advanced trading capabilities. Managers need a keen awareness of trading costs. By evaluating brokers, managers could gain a competitive edge through transaction cost management. At a high level, Wilshire considers the portfolio, accounting, and general investment guideline compliance as well when evaluating implementation issues.

***Attribution (10%)* –** Finally, our manager evaluation process assesses the manager's ability to understand outcome. In the most simplistic schemes, managers are concerned solely with performance. However, attribution (that a manager performs himself / herself) is review for an equally powerful purpose: the path to improvement. It informs the manager as to what is working and what is not. More sophisticated attribution provides a link between each stage of the investment process and the return associated with that stage. These links can provide important direction as to how the manager should adjust their process to attain or keep a competitive edge. Many managers make a point of "sticking to their discipline" during periods of underperformance but fail to realize that is due, in part, to outdated valuation methodologies and / or portfolio construction techniques. Attribution provides the means by which managers can stay competitive.

Quantitative Scoring

The objective of quantitative analysis during the manager research process is to analyze the historical risk and return of the strategy and to ascertain whether it was attributable to skill or not. Our investment professionals utilize Wilshire's proprietary analytics to perform quantitative analysis on managers during the due diligence process. The primary tools used in the analysis are Wilshire Compass, Wilshire Atlas, and Wilshire Axiom^{SM}. Our analytical work includes a review of absolute risk and returns, risk adjusted returns, consistency and skill analytics, universe comparisons, holdings and returns based style analysis, and historical allocations.

Wilshire Compass is a proprietary technology with capabilities in asset allocation, investment structure, and manager and total fund evaluation. The electronic information collected through the Wilshire Compass Portal powers the Wilshire Compass analytic through a seamless transfer of portfolio characteristics data. Wilshire Compass provides holdings-based analytics with data submitted by equity managers through its integration with the Wilshire Atlas equity analytics system.

Wilshire Consulting has developed a quantitative methodology for summarizing historical manager returns into a single metric that can assist in evaluating manager

performance. However, a manager's performance history up to the evaluation date also needs to be analyzed to determine how their qualitative attributes have manifested themselves in risk and return. The difficulty lies in identifying meaningful metrics, choosing an appropriate time period, adjusting for risk and considering how a manager's competitors have performed. Wilshire Consulting's Historical Investment Performance (WHIP) Score[2] is an effort to evaluate risk and return across these various dimensions and summarize the results in one number to facilitate the performance comparison of competing managers.

The WHIP score is comprised of three tests plus an adjustment factor. The goal is to determine whether a manager's bets versus the benchmark are "paying off" and to be able to fairly compare one manager to the next. While the WHIP score seeks to automate the quantitative scoring process, clients are welcome to request and review a detailed custom quantitative analysis of a manager's performance or any other scoring methodology that they may prefer.

Manager Questionnaires

Wilshire's manager data is collected directly from managers through their responses to our quantitative and qualitative questionnaires and website data submissions. Wilshire's databases are unique in that actual equity manager portfolios are input into our databases so that portfolio characteristics can be calculated in a uniform fashion across all managers, making manager comparisons more accurate. Fixed income portfolio characteristics data is collected with explicit instructions that managers utilize Wilshire's methodology for calculating current yield, yield-to-maturity duration and convexity in order to ensure uniformity of these measures.

Quantitative Information: Our questionnaires are designed to provide comprehensive profiles of managers including general business information such as key professionals, investment process, research sources, investment style, fees, and performance. Wilshire utilizes the Wilshire Compass Portal facility in the creation and retrieval of firm and strategy specific information. Minority-owned, women-owned, and disabled veteran-owned managers are incorporated in the same manner as other managers, according to asset class. Additionally, we process portfolio equity holdings submitted by managers through our equity analytics system, Wilshire Atlas^{SM}, to calculate portfolio characteristics. Wilshire gathers portfolio characteristics directly from fixed income managers in order to mitigate the impact of OTC pricing in fixed income markets. The portfolio characteristics that we gather or calculate for most managers include:

- Security count (number of portfolio holdings)
- Market capitalization measures

[2] For a detailed discussion please see "Wilshire Historical Investment Performance (WHIP) Score: A Quantitative Based Methodology for Summarizing a Manager's Past Returns," Foresti & Rush, 2009

- Growth measures (ROE, earnings growth, etc.)
- Value measures (P/E, P/B, yield, etc.)
- Risk measures (beta, debt / equity ratio, etc.)
- Industry weightings
- Country weightings
- Debt ratings (bonds)
- Maturity, duration (bonds)
- Mortgage, corporate weightings (bonds)

Qualitative Information: Wilshire collects and maintains a universe of qualitative questionnaires submitted by investment managers for the products they offer. The questionnaires are structured to help our manager research analysts evaluate managers using our evaluation model. The questionnaires are built around the six areas of focus in our qualitative model: Organization, Information, Forecasting, Portfolio Construction, Implementation, and Attribution. Each area of focus has a dedicated section with in-depth questions built to give our analysts a better understanding of the qualitative characteristics of the organization, philosophy, and process. These questionnaires are currently maintained electronically on our internal network.

Investment managers are asked to disclose any past regulatory violations, fines, sanctions or similar issues in their answers to our Manager Research Questionnaire. During formal search processes only, each finalist manager candidate's Form ADV is collected and reviewed to determine consistency with the Manager Research Questionnaire. Additionally, upon client request, Wilshire will collect (on an annual basis and if available) a manager's Form ADV and forward it directly to the client making the request. Wilshire does not review Form ADV documents as a part of its ongoing manager monitoring process. For any investment manager that acts as a broker or self-custodies client assets, Wilshire will request the manager's audited financial statements during a search only to determine whether the auditor has issued an unqualified opinion. Any issues identified in the auditor's opinion letter will be communicated to the client. However, Wilshire does not undertake any substantive review or analysis of the financial statements. Lastly, if an investment manager claims GIPS® compliance, we collect a GIPS® compliant presentation for the strategy under review. If the manager underwent independent third party verification, we will collect the verification report.

Wilshire's processes are not designed to detect fraud or other irregularities with an investment manager.

Ongoing Manager Meetings

Another important part of our manager evaluation process consists of manager meetings conducted by both Wilshire's dedicated Manager Research Group and our investment consultants. Wilshire conducts meetings both at Wilshire offices and on-

site at manager offices and supplements these meetings with telephone and video conferencing.

The purpose of our on-site meetings is to spend time in an investment manager's office evaluating the culture, morale, and general "feel" of the environment. We will meet with key investment professionals at various levels of the team, and we may meet senior business management professionals and operations professionals independently. In addition, we may spend time observing the investment process by attending investment team meetings, research calls, reviewing internal research while challenging and understanding investment professionals' knowledge of securities, sectors, and geographies under their purview. We assess the portfolio management and research tools (e.g. databases, screening tools, valuation models, optimization processes).

Manager research professionals and consulting staff conduct more than 1,500 manager meetings per year. Our extensive dealings with managers and knowledge of clients' objectives allow us to focus on specific investment and/or organizational issues during on-site visits.

To keep our clients informed of the latest investment manager developments, Wilshire distributes weekly Manager Research News Alerts. News Alerts provide the latest manager news with perspective and context from our manager research analysts.

Oversight Committees

There are two levels of oversight committees built into the manager research structure at Wilshire. The first and highest level committee is Wilshire's Manager Research Oversight Committee ("MROC"). The MROC is comprised of Wilshire's Chief Compliance Officer, President of Wilshire Consulting, President of Wilshire Funds Management, Head of Research in Wilshire Consulting, Head of Investments from Wilshire Funds Management, a Senior Manager Research Analyst, and the Manager Research Coordinator in Wilshire Consulting. The objective of this committee is to oversee compliance with manager research policies and procedures and to implement strategic direction to manager research efforts at Wilshire. The committee meets on a monthly basis.

The second level of manager research oversight consists of Wilshire's Asset Class Committees ("ACC"), which are comprised of manager research specialists and at least three senior consultants. There are eight committees tasked to oversee manager research on traditional asset classes, each of which is scheduled to meet at least semi-annually. The objectives of the ACCs are to provide oversight on manager research coverage of client exposures, be knowledgeable of highly scored managers and strategies, review research coverage of the entire asset class universe, and occasionally conduct meetings and onsite visits. The committees are a forum for senior consultants

to discuss and question manager research analysts regarding their evaluations of managers.

Wilshire does not assume responsibility for the accuracy of information provided by an investment manager.

Manager Recommendation Process

Utilizing the scores produced by our manager evaluation process, we work with our clients to assist them in making a final selection, as illustrated below:

Wilshire believes that a sound structured investment program is a top-down process that begins with asset allocation and is implemented through disciplined investment structure analysis and a rigorous manager selection process. The use of active management can serve two purposes. The first is to implement the plan objectives defined during the asset allocation and investment structure work. Secondly, investment managers can seek to provide excess returns, or alpha, through active management. Wilshire believes that the qualitative characteristics of a manager are as important, if not more important, than the historical track record of a strategy when selecting managers. We will further explore our philosophical views when we dig deeper into our scoring methodology.

The manager selection process begins by clearly defining the client's specific investment mandate and search criteria. Wilshire considers each client's unique circumstances in the selection of investment managers. We are particularly attuned to a client's risk tolerance and return expectations, and are careful to incorporate those objectives into the selection process. By clearly defining specific objectives for the

mandate, Wilshire is better able to assist in narrowing the field to a list of qualified candidates. The list of qualified candidates will result from a combination of our deep knowledge of the asset class, quantitative screening of product statistics and a qualitative assessment of a manager's capabilities. During the final phase of the process, the client's investment committee often selects finalist candidates for interviews. Interviews typically consist of a formal presentation at the client or Wilshire's office. Finally, following the interviews of the finalist candidates, a selection is made by the client. During the hiring process, Wilshire's consulting team will work with the client and manager to help the client develop sound investment guidelines.

To keep our clients informed of the latest investment manager developments, Wilshire distributes weekly Manager Research News Alerts. News Alerts provide the latest manager news with perspective and context from our manager research analysts.

The advice and recommendations made by Wilshire to the City of Fresno may be different from advice or recommendations made to Wilshire's other clients.

The advice and recommendations made by Wilshire involve Wilshire's judgment. Wilshire's views regarding the economy, the securities markets or other specialized areas, like all predictions of future events, cannot be guaranteed to be accurate. Wilshire does not make and will not make any guarantee that the City of Fresno's investment objectives will be achieved.

Wilshire's advice and recommendations are based on financial and other information provided to Wilshire. It is the City of Fresno's responsibility to ensure that it has provided Wilshire with accurate and up-to-date information and the City of Fresno will inform Wilshire of any changes that might affect the manner in which the City of Fresno decides to invest its assets.

43. Do you undertake a self-evaluation of your success in recommending investment managers that outperform their benchmark over the first capital market cycle for new client mandates?

No. Wilshire does not formally evaluate the manager selection process. There are several reasons why this is not done. First, each client follows a different path to manager selection. In most cases, Wilshire provides a selected list of candidates (ranging from 3 to 15 candidates) and participates in the selection process along with the client. Since the clients continue to maintain the discretion for the selection process, Wilshire cannot accept the full credit or debit for manager selection.

Secondly, Wilshire's participation in the process varies depending on the client. In most cases, Wilshire does have significant participation. In other cases, Wilshire provides the candidate list and the clients conduct the interviews (most prevalent with

public fund clients). In a limited number of cases, Wilshire is asked to make a selection or recommendation to a committee that either ratifies or declines the recommendation.

The fact that an average Wilshire Consulting client has been with Wilshire for 11 years demonstrates that our clients are very satisfied with our services, including manager selection. The only way to achieve such client satisfaction is to deliver consistent results.

(a) If so, what changes, if any, have you made to your manager search and selection process based on those self-evaluations?

Not Applicable.

(b) What results based on these changes have you achieved?

Not Applicable.

44. How many investment manager searches has the firm conducted over the past three years ending June 30, 2012 for the following asset classes and investment strategies? What was the total value of assets involved in each type of search?

Investment fund selection is an integral part of Wilshire's consulting services. As a leading consulting firm focused on providing services to large corporate, public, and endowment fund sponsors, we closely monitor all "institutional quality" money management firms, both domestic and foreign-based. Over the past three years, Wilshire Consulting has completed over 300 searches as identified in the table below:

	2011	2010	2009
Fixed Income - Core	12	12	5
Fixed Income - Emerging Debt	2	3	5
Fixed Income - High Yield / Opportunistic	19	15	11
Hedge Fund of Funds	5	0	4
International Equity	18	10	19
International Equity - Emerging Markets	10	3	5
Portable Alpha	0	1	0
Private Equity	7	2	3
Real Assets	17	2	1
Real Estate - Global REIT	4	2	4
Real Estate - REITs	1	2	1

	2011	2010	2009
Tax Efficient Equity	0	0	1
TIPS	2	2	3
U.S. Equity - Enhanced	0	4	9
U.S. Equity - Large Cap Growth	9	5	2
U.S. Equity - Large Cap Value	8	3	2
U.S. Equity - Large Core	6	4	1
U.S. Equity - Mid Cap Growth	1	0	1
U.S. Equity - Mid Value	1	1	1
U.S. Equity - Small Core	4	4	10
U.S. Equity - Small Growth	5	3	2
U.S. Equity - Small Value	0	1	4
Total	**131**	**79**	**94**

45. Is there a specific unit or group within the Firm dedicated to (i.e. spends 100% of its time on) manager research, including for both public market (traditional) assets and private market (alternative non-traditional) investments? If so, please provide the following information for that group:

Yes, Wilshire has a Manager Research Group, which resides within Wilshire Funds Management, a separate business unit of Wilshire, of which 14 professionals that dedicate 100% of its time to investment manager research. Wilshire's Manager Research Group conducts ongoing evaluation and monitoring of manager products through the use of our comprehensive manager database, formal scoring process, and extensive consultant involvement through investment committees. Product specialists, similar to industry analysts in large investment management firms, are assigned to cover an individual asset class or a subset of an asset class. It is their responsibility to review and rank managers based on quantitative scoring and qualitative evaluation derived from interviews, on-site due-diligence, and scoring of the qualitative questionnaires submitted in our database. Our research platform is open to any manager who wishes to submit answers to our detailed questionnaires. The product specialists' analyses help Wilshire ensure that we maintain a stable of high quality, institutionally oriented, investment managers for use in our clients' portfolios.

Mannik Dhillon, CFA, CAIA, Vice President in Wilshire Funds Management, provides management oversight to Wilshire's Manager Research Group and plays a lead role in directing the team's support to Consulting projects. The following is a list of the product specialists and their respective research coverage. The individuals listed in the figure below spend 100% of their time dedicated to manager research.

Manager Research Team

Additionally, Wilshire Consulting has Asset Class Committees ("ACC") which comprised of manager research specialists and at least three senior consultants. There are eight committees tasked to oversee manager research on traditional asset classes, each of which is scheduled to meet at least semi-annually. The objectives of the ACCs are to provide oversight on manager research coverage of client exposures, be knowledgeable of highly scored managers and strategies, review research coverage of the entire asset class universe, and occasionally conduct meetings and onsite visits. The committees are a forum for senior consultants to discuss and question manager research analysts regarding their evaluations of managers. Asset Class Committees are detailed below:

Asset Class Committee Responsibilities

Traditional

US Value Equity	US Core Equity	US Growth Equity	Non-U.S. Equity / Emerging Markets
Mike Rush, VP* Mark Brubaker, MD Howard Yata, MD	Marlin Pease, MD* Michael Schlachter, MD Chris Tessman, VP	Amy Hemphill, VP* Bill Bensur, MD Ting Yeh, SA	Andrew Junkin, MD* Julia Bonafede, Pres. Steve Foresti, MD

Core Fixed Income	Specialty Fixed Income	Currency	Multi-Asset
Amy Hemphill, VP* Julia Bonafede, Pres. Charley Stunkard, MD Eileen Neill, MD	Joe Dressel, VP* David Lindberg, MD Eileen Neill, MD	Mark Brubaker, MD* Marlin Pease, MD Ali Kazemi, VP	Patrick Lighaam, VP* Steve Foresti, MD David Lindberg, MD Mike Rush, VP

Alternative

Private Real Assets	Public Real Assets	Private Equity	Hedge Funds
Mike Dudkowski, MD* Felicia Bennett, MD Mike Rush, VP Alex Browning, SA Brad Baker, A	Alex Browning, SA* Bill Bensur, MD Patrick Lighaam, VP	Jim Neill, MD* Michael Patalsky, MD Tom Toth, MD J.M. Ruscetti, A Jerry Hsu, A	Karim Simplis, VP* Maggie Ralbovsky, MD Tom Toth, MD Karyn Williams, MD Joe Dressel, VP

Specialty

Transition Management	Defined Contribution	Custodian / Record Keeping	Emerging Managers
Michael Patalsky, MD* Joe Dressel, VP	Michael Patalsky, MD* Felicia Bennett, MD Eileen Neill, MD Maggie Ralbovsky, MD Russ Walker, VP	Russ Walker, VP* Ting Yeh, SA	Andrew Junkin, MD* Mark Brubaker, MD Michael Schlachter, MD

*Committee Leader
Pres. = President
MD = Managing Director
VP = Vice President
SA = Senior Associate
A = Associate

Furthermore, Wilshire Consulting maintains a dedicated position within our Investment Research Group that is focused on manager research issues. We have found this position to be invaluable in consistently communicating the information flow from our manager research analysts through to our consulting teams and in helping to ensure that the insights from our manager research efforts are most effectively utilized within our general capital markets research.

46. Please list the databases used for manager research for both traditional and alternative assets. Provide the following information for each database. Enter the information or an 'X' as required in the appropriate cell or cells of the tables below.

Wilshire collects and maintains its proprietary and internally developed database of investment managers and advisors. Currently, Wilshire's stock and bond manager databases covers more than 8,000 investment products, over 26,000 mutual funds, and approximately 5,000 hedge funds[1]. Wilshire's investment product database is divided into the following major groupings:

ASSET CLASS	CURRENT NUMBER OF INVESTMENT PRODUCTS
U.S. EQUITY	**3,836**
Broad / Combination	**767**
Large Cap	**1,234**
Micro Cap	**65**
Mid Cap	**430**
Small Cap	**733**
Other	**607**
Value	**1,051**
Growth	**955**
Core / Blend	**1,227**
Other	**601**
NON-U.S. EQUITY	**2,337**
Global	**672**
EAFE	**449**
Europe	**74**
Pacific	**30**
Pacific ex Japan	**50**
UK	***31***
Emerging Markets	***316***
Country Specific	***215***
Other	***500***
U.S. FIXED INCOME	**1,674**
Short / Cash	**281**
Long	**167**
Intermediate	**543**
Core / Market	**428**
Other	**255**
Core	**496**
Core Plus	**135**
Corporate	**162**
Government	**124**
Municipal	**111**
High Yield	**197**
Mortgages	**62**
Stable Value	**28**
TIPS	**51**
Other	**307**

ASSET CLASS	CURRENT NUMBER OF INVESTMENT PRODUCTS
GLOBAL FIXED INCOME	592
TOTAL	8,439

Our internally developed database also holds 389 hedge fund-of-funds investment products and 569 hedge fund products. We maintain separate databases of approximately 70 private equity fund-of-funds products and 50 private real estate managers. In addition, our public real estate database has more than 100 managers.

(a) The type of database – whether it is internal/proprietary, purchased or licensed from a third party, or part of a consultants' network or cooperative;

Name of Database	Type of Database		
	Internal/ Proprietary	Third Party	Network or Cooperative
Investment Product Database	X	-	-

(b) The type of information in the database – investment performance, manager profiles, portfolio holdings or product characteristics, or other (meeting notes, news items, recent changes, etc.);

Data collection is the starting point for the investment due diligence process. Wilshire currently collects information through two channels. The first channel of data gathering is our detailed qualitative questionnaires crafted specifically for each asset class. The second is the Wilshire Compass Portal (a.k.a. Wilshire Odyssey), our proprietary online data submission site.

Our questionnaires are designed to provide comprehensive profiles of managers including general business information such as key professionals, investment process, research sources, investment style, fees, and performance. Wilshire utilizes the Wilshire Compass Portal facility in the creation and retrieval of firm and strategy specific information. Minority-owned, women-owned, and disabled veteran-owned managers are incorporated in the same manner as other managers, according to asset class. Additionally, we process portfolio equity holdings submitted by managers through our equity analytics system, Wilshire Atlas^{SM}, to calculate portfolio characteristics. Wilshire gathers portfolio characteristics directly from fixed income managers in order to mitigate the impact of OTC pricing in fixed income markets. The portfolio characteristics that we gather or calculate for most managers include:

- Security count (number of portfolio holdings)
- Market capitalization measures
- Growth measures (ROE, earnings growth, etc.)
- Value measures (P/E, P/B, yield, etc.)
- Risk measures (beta, debt / equity ratio, etc.)
- Industry weightings
- Country weightings
- Debt ratings (bonds)
- Maturity, duration (bonds)
- Mortgage, corporate weightings (bonds)

(c) The number of investment managers, funds, portfolios and/or products/strategies covered by the database;

As mentioned earlier, Wilshire collects and maintains its proprietary and internally developed database of investment managers and advisors. Currently, Wilshire's stock and bond manager databases covers more than 8,000 investment products, over 26,000 mutual funds, and approximately 5,000 hedge funds1. Wilshire's investment product database is divided into the following major groupings:

ASSET CLASS	CURRENT NUMBER OF INVESTMENT PRODUCTS
U.S. Equity	3,836
Non-U.S. Equity	2,337
U.S. Fixed Income	1,674
Global Fixed Income	592
TOTAL	**8,439**

(d) How information is entered and updated, by whom, whether the information is verified and how any discrepancies are resolved. Please explain briefly.

With the exception of hedge fund and mutual fund databases, which are provided in part by external vendors, product data is obtained directly from investment managers. Because there is no manual handling of data by Wilshire, the data is not subject to error after it enters our databases, though the managers themselves can erroneously or incorrectly input data. Wilshire has a dedicated operations team who works directly with managers to assist in maintaining manager-supplied information.

Wilshire maintains an open door policy with respect to our manager databases and does not charge managers any fee, direct or indirect, for product inclusion. All

data provided by managers is on a voluntary basis. The only cost that a manager incurs to participate in our databases is the cost of their time to enter the information.

Wilshire collects and maintains a universe of qualitative questionnaires submitted by investment managers for the products they offer. The questionnaires are structured to help our manager research analysts evaluate managers using our evaluation model. The questionnaires are built around the six areas of focus in our qualitative model: Organization, Information, Forecasting, Portfolio Construction, Implementation, and Attribution. Each area of focus has a dedicated section with in-depth questions built to give our analysts a better understanding of the qualitative characteristics of the organization, philosophy, and process. These questionnaires are currently maintained electronically on our internal network.

Investment managers are asked to disclose any past regulatory violations, fines, sanctions or similar issues in their answers to our Manager Research Questionnaire. During formal search processes only, each finalist manager candidate's Form ADV is collected and reviewed to determine consistency with the Manager Research Questionnaire. Additionally, upon client request, Wilshire will collect (on an annual basis and if available) a manager's Form ADV and forward it directly to the client making the request. Wilshire does not review Form ADV documents as a part of its ongoing manager monitoring process. For any investment manager that acts as a broker or self-custodies client assets, Wilshire will request the manager's audited financial statements during a search only to determine whether the auditor has issued an unqualified opinion. Any issues identified in the auditor's opinion letter will be communicated to the client. However, Wilshire does not undertake any substantive review or analysis of the financial statements. Lastly, if an investment manager claims GIPS® compliance, we collect a GIPS® compliant presentation for the strategy under review. If the manager underwent independent third party verification, we will collect the verification report.

Access to the databases is coordinated through the lead consultant. Some clients may choose to subscribe to Wilshire Compass, Wilshire Atlas℠, and / or Wilshire Axiom℠ systems to perform more in-depth analyses of their investment portfolio. Although Wilshire provides analyses as a part of our full-retainer services, some clients also like to have direct access to these programs for additional internal analysis of their funds. Direct access is available with a license agreement and annual subscription.

47. Please indicate how many times a year the Firm formally met with investment managers (or general partners) on average over the past three years ending [date].

Manager research professionals and consulting staff conduct more than 1,500 manager meetings per year, therefore over the past three years, we conducted more than 4,500 manager meetings. Our extensive dealings with managers and knowledge of clients' objectives allow us to focus on specific investment and/or organizational issues during on-site visits.

Wilshire meets with each manager once per year. For passive or quantitative managers, frequency is dependent on organizational issues. Wilshire conducts meetings both at Wilshire offices and on-site at manager offices and supplements these meetings with telephone and video conferencing.

Performance Evaluation and Compliance

48. What benchmarks does the Firm use to evaluate the investment performance of a retirement system at the total fund level?

Wilshire's performance reporting capabilities were internally developed and are extensive. Our performance report allows us to compare total fund performance to objectives. The client's overall performance is first compared to benchmarks designed to mirror its objectives. Three common total fund benchmarks Wilshire uses are:

Total Fund Level

At the total fund level, the three common total fund benchmarks Wilshire uses are:

- The fund's actuarial assumption. This benchmark ensures performance is meeting that which was actuarially assumed to avoid an increase in contributions caused by a performance shortfall.
- A policy benchmark derived from a weighted average of broad market indices for each asset class in which the fund invests, weighted by the fund's policy target. This benchmark measures the effectiveness of the asset allocation and more importantly the client's tactical asset allocation decisions.
- A comparison to a universe of other professionally managed accounts. These universes can be broad market based or defined by investment style.

49. What benchmarks does the Firm use to evaluate the performance of individual asset classes, investment managers and portfolios?

Asset Class Level

At the asset class level, we recommend that clients select a benchmark that is representative of the opportunity set available in that asset class (i.e. Wilshire 5000 Total Market Index^{SM} for U.S. equity). The client's asset class composite can then be compared against the asset class benchmark to evaluate whether or not there are any unintended active bets (i.e. unintended style exposures, overallocations to investment managers, investment manager underperformance). At the asset class level, this allows a plan sponsor to see if value is being added relative to the passive alternative.

Manager Level

At the manager level, it is important to establish a benchmark and an expected alpha level at the start of the relationship. Benchmarks determine whether the manager is adding value relative to the low cost passive portfolio and whether or not the manager is adhering to their mandate.

Appropriate benchmarks, in any market, have the following characteristics:

Unambiguous – The manager understands the rules and universe from which it is constructed.

Investable – The manager can purchase the securities in the benchmark.

Measurable – Benchmark performance can be calculated on a frequent basis (at least monthly).

Appropriate – The benchmark represents the stated investment mandate.

Pre-specified – The benchmark is agreed upon prior to the start of the monitoring period.

Wilshire defines four basic approaches to benchmarks. These are: broad market indices, style indices, custom indices, and normal portfolios. Wilshire has had experience in using all of these approaches. In some cases our clients use the benchmarks of other major vendors (e.g., Russell), while in other cases, Wilshire's indices may be more appropriate (e.g., Wilshire 5000 Total Market Index^{SM}).

(a) Are there any asset classes, market segments, or investment styles or strategies – e.g., private markets, hedge funds or real assets – for which the Firm CANNOT provide benchmarks to measure performance?

No.

(b) What types of customized benchmarks – such as blended indices, normal portfolios, etc. – can the Firm provide for specialized investment strategies?

Wilshire recognizes the importance of customizing indices and analyses to clients' individual circumstances. Since we have the entire source of data comprising the indices on our U.S. and non-U.S. equity and bond databases, we are able to easily alter these indices to reflect special circumstances.

The following are some of the sources of the benchmark databases Wilshire uses:

American Stock Exchange	H & Q	NYSE
Citigroup Global Markets	IFC	NASDAQ
First Boston	Barclays Capital	Payden & Rygel
Frank Russell	Merrill Lynch	Richards & Tierney
Financial Times	JP Morgan	Standard & Poor's
Froley Revy	MSCI	Toronto Stock Exchange
Goldman Sachs	NAREIT	Wilshire Associates

The previous sources account for approximately 500 standard indices contained in Wilshire's benchmark database. These benchmarks are updated either monthly or quarterly, and characteristic information is collected on the majority of the indices to enable total fund and manager attribution.

Wilshire has been a leader in creating custom indices to measure investment performance. Wilshire introduced the Wilshire 5000 Total Market Index^{SM} in 1975, representing a capitalization weighted average return for all publicly traded U.S. stocks. Since that time we have created several other custom U.S. equity indices. These include:

- Wilshire 5000 Total Market Index^{SM}
- Wilshire 4500 Completion Index^{SM}
- Wilshire 2500 Index^{SM}
- Wilshire 5000 Growth Index^{SM}
- Wilshire US Large-Cap Index^{SM}
- Wilshire US Large-Cap Growth Index^{SM}
- Wilshire US Large-Cap Value Index^{SM}
- Wilshire US Mid-Cap Index^{SM}
- Wilshire US Mid-Cap Growth Index^{SM}
- Wilshire US Mid-Cap Value Index^{SM}
- Wilshire US Small-Cap Index^{SM}
- Wilshire US Small-Cap Growth Index^{SM}
- Wilshire US Small-Cap Value Index^{SM}
- Wilshire 5000 Value Index^{SM}

- Wilshire US Micro-Cap Index^{SM}
- Wilshire Real Estate Operating Index^{SM}
- Wilshire US Real Estate Securities Index^{SM}
- Wilshire US REIT Index^{SM}

Peer Universe Comparisons

Wilshire utilizes both market indexes and peer ranking to conduct relative performance comparisons. We believe that appropriate market indexes are the most relevant comparison in the evaluation of manager or asset class performance. That said, it is appropriate to review peer rankings to gauge the relative success of the respective investment manager. Lacking this additional comparative perspective, a board could conclude that their manager was abysmal and seek to put the firm on watch or even replace them. Thus we prefer to use all available comparisons, but emphasize market index comparisons. There are three data systems that Wilshire Consulting's Performance Measurement Group utilizes to deliver its relative performance comparisons that have all been internally developed and maintained:

Index Databases

Index databases are utilized to compare levels of performance and investment characteristics to specific indices. Our database can provide style benchmarks as well as develop normal portfolios for clients. Wilshire has recommended both standard published indices as well as custom benchmarks tailored to a client's individual needs. Wilshire's index database contains over 1,100 indices which are directly collected from original index sources, both U.S. and non-U.S. Internal Wilshire indices are updated daily and all outside indices are updated monthly.

Manager Universe Databases

Manager universe databases are utilized to compare a manager's performance to its appropriate peer group. Wilshire collects and maintains its proprietary and internally developed database of investment managers and advisors. Our manager database is divided by asset class and product category and has performance data since inception. No payment is required from managers to participate in our database to ensure no conflict of interest. Managers submit their data to Wilshire quarterly and such data is maintained by Wilshire's Manager Research Group in our central database. Currently, Wilshire's stock and bond manager databases cover over 8,000 investment products (representing over 1,500 investment managers), 26,000 mutual funds provided by Morningstar, and approximately 5,000 hedge funds.

Total Fund Universe

Wilshire Cooperative Universe Service^{SM} (WILCOP^{SM}) is used for comparisons of total funds and asset class portfolios. The live portfolio returns in this database come from the pooled effort of many of the largest and most respected investment consultants, including Wilshire Consulting. With total current assets of approximately $743 billion, the 19,000+ institutional portfolios include public employee, corporate defined benefit, eleemosynary and Taft-Hartley plans. Total fund data is resident on our internal system with data received from Wilshire consulting clients and WILCOP clients, which are small and medium size consultants across the U.S., and is updated quarterly.

The great variety of information available in WILCOP allows Wilshire to compare clients' performance in many different ways – against funds similar in size and type, with similar or different asset allocation strategies.

As described above, Wilshire has many different tools with which to compare the performance of our clients' investment structures at many levels. By having a large variety of comparison universes and proprietary tools at the disposal of our consulting teams, we provide clients relevant and reliable information with which to compare their fund's performance at the total fund, asset class and peer level all the way down to individual managers.

50. What performance measurement databases or systems does the Firm use to measure the performance of the Fund and individual asset classes, investment managers and portfolios against peer groups?

Wilshire uses three main universes: Wilshire Cooperative Universe Service^{SM} (WILCOP^{SM}), the Wilshire Manager Universes (Wilshire Compass), and Wilshire Trust Universe Comparison Service$^{®}$ (Wilshire TUCS$^{®}$).

(a) How many pension funds are covered in those databases? How many of them are public funds?

WILCOP is used for comparisons of total funds and asset classes. The source of the returns in this database come from live portfolios of actual investment consulting clients of over 50 consulting firms, including Wilshire. The breadth of information allows for analysis broken down by plan type, asset class and fund size. Information is updated quarterly, using the same source of returns as the initial database. The total fund breakdown is as follows:

PLAN TYPE	NUMBER OF PLANS
Corporate	128
Public Funds	170
Taft-Hartley and/or Jointly Trusted	318

PLAN TYPE	NUMBER OF PLANS
Educational Institutions	79
Religious Institutions	63
Hospitals	85
Other Non-Profit	108
Individual/ Personal	315
Other	117
Total	***1,383***

These plans fall into the following fund sizes:

RANGE	NUMBER OF PLANS
> $1 Billion	82
$100 Million - $1 Billion	370
$20 Million - $100 Million	428
< $20 Million	503
Total	***$743 Billion***

The assets of the funds described above are divided into the following number of plans:

PLAN TYPE	NUMBER OF FUNDS
Defined Benefit	446
401 (k)	26
Other Defined Contribution	48
Profit Sharing	9
Charitable Trusts	27
Endowment	84
Foundation	173
Other Eleemosynary	31
Health and Welfare	79
Personal Trust	235
Life Insurance	1
Property/Casualty Insurance	2
Other Insurance	20
Corporate Asset	36
Other Taxable	18
Other	148
Total	***1,383***

These plans are allocated into the following asset classes:

ASSET CLASS	NUMBER OF ACCOUNTS
U.S. Equity	5,398
Non-U.S. Equity	1,907

ASSET CLASS	NUMBER OF ACCOUNTS
U.S. Fixed Income	2,813
Non-U.S. Fixed Income	80
Balanced	605
Cash and Cash Equivalents	936
Convertibles	40
Real Estate	1,089
GIC/GACs	45
Mortgages	81
Hedge Funds	2,583
Private Placements, LBOs and Other	753
Venture Capital	2,743
Total	***19,073***

The great variety of information available in WILCOP allows Wilshire to compare clients' performance in many different ways: against funds similar in size and type, with similar or different asset allocation strategies.

Wilshire Compass is used for comparisons of total funds, asset classes and individual managers. The source for the Total Fund Module of Wilshire Compass is client portfolios as well as the composites of the top 100 funds in the country, and is used to generate asset class and total fund comparisons. The Manager Module of Wilshire Compass provides manager returns and portfolio characteristics, and is used to compare almost 5,000 individual managers. The returns for these universe comparisons come directly from the individual managers each quarter. In addition, Wilshire Compass includes data from Morningstar on more than 26,000 mutual funds. The total fund breakdown of Wilshire Compass is as follows:

PLAN TYPE	NUMBER OF PLANS
Corporate / Private	150
Foundation/ Endowment	72
Public	75
Total	***297***

These plans fall into the following fund sizes:

RANGE	NUMBER OF PLANS
> $1 Billion	101
$100 Million - $1 Billion	94
< $100 Million	102
Total Plans	***297***

Wilshire TUCS® is a complete performance reporting and portfolio analytics application designed specifically for the plan sponsor, and offered through participating custodial organizations. Started in 1978 and widely regarded as the

industry standard benchmark for the performance of institutional funds, Wilshire TUCS provides custom peer-group universe rankings, attribution, and comprehensive portfolio analytics on the effects of risk, allocation and style. Wilshire TUCS is a cooperative effort between Wilshire Associates and custodial organizations who submit plan level holdings and performance data at the manager, composite and total fund levels. The total fund breakdown is as follows:

SPONSOR TYPE	TOTAL FUNDS
Corporate	178
Public Funds- Federal & State Gov't	84
Public Funds- Local Gov't	113
Union	152
Educational Institutions	58
Religious Institutions	32
Hospital	40
Other Non-Profit	71
Individual/Personal	84
Undefined	12
Total	***824***

PLAN TYPE	TOTAL FUNDS
Defined Benefit	440
401(k)	10
Other Defined Benefit	22
Taft-Hartley	3
Charitable Trusts	14
Endowment	56
Foundation	113
Other Eleemosynary	10
Health & Welfare	44
Personal Trust	59
Property/ Casualty Insurance	3
Other Insurance	14
Corporate Asset	16
Profit Sharing	3
Life Insurance	2
Undefined	15
Total	***824***

FUND SIZE ANALYSIS	NUMBER OF PLANS
> $10 Billion	51
$1 - $10 Billion	152
$500 - $1 Billion	71
$100 - $500 Million	226

FUND SIZE ANALYSIS	NUMBER OF PLANS
< $100 Million	325
Total Plan Assets	***$2.65 Trillion***

As described above, Wilshire has many different tools with which to compare the performance of our clients' investment structures at many levels. By having a large variety of comparison universes and proprietary tools at the disposal of our consulting teams, we can provide clients relevant and reliable information with which to compare their fund's performance at the total fund, asset class and peer level all the way down to individual managers.

(b) How many investment managers and portfolios/products are included?

For a breakdown of investment managers and portfolios/products, please refer to our response to Question 50 above.

(c) For each database, please indicate where the data comes from, how it is verified, who calculates the investment returns, and how any errors or discrepancies are resolved.

Peer groups are updated automatically every month upon receipt of manager information (Wilshire Compass) and plan sponsor information (Wilshire **TUCS** and WILCOP). Plan sponsor data in Wilshire Compass is updated once quarterly.

51. Does the Firm provide performance attribution analysis at the total fund level as well as for individual asset classes or portfolios?

Performance Attribution	Yes/No
Total Fund	Yes
Domestic Equities	Yes
International and/or Global Equities	Yes
Domestic Fixed Income	Yes
International and/or Global Fixed Income	Yes
Other (please specify):	

Wilshire is one of the industry's leading providers of analytical products, and as such, all of our analysis for clients is prepared using systems that we designed. Wilshire's performance system is able to provide clients with in-depth attribution analysis from the plan level, on down to each asset class individually. At the aggregate portfolio level, our analysis will provide the City of Fresno Retirement Systems with a comparison of its performance with that of a predetermined passive alternative. This is usually based on the "policy portfolio," which would represent the plan's normal asset allocation. Alternatively, it could be based on any other policy portfolio, such as the

average allocation of a chosen peer group. Whichever comparison portfolio is chosen, the analytical principals applied are the same as for the asset class and manager analysis systems which are described in greater detail, below.

At the asset class level we have the capability to aggregate all sub portfolios to develop a composite profile of the entire asset class with respect to characteristics. We can perform an attribution analysis against a benchmark for the asset class. This can also be done on the individual portfolio level. These analyses provide information to explain why performance is falling short or exceeding objectives, whether the structure of the asset class is appropriately diversified, exhibits the appropriate level of risk in the aggregate, and whether the resulting manager portfolios meet the stated objectives.

For a **U.S. equity portfolio** we sub-divide performance into five components:

0. *Style* – This measures whether performance has been positively or negatively impacted by the style of the portfolio such as growth orientation, small stock orientation, or value orientation.
1. *Timing* – This measures whether cash within the account has added or subtracted from performance and risk.
2. *Sector Weighting* – This measures how well industry sectors (such as oil stocks) have been selected.
3. *Stock Selection* – This measures how well a manager has selected stocks within sectors.
4. *Trading* – This measures the impact of turnover activity on the account.

The sum of these five component returns equal the difference between the total account return and the performance objective, usually the Wilshire 5000 Total Market Index^{SM}, or another broad market index.

For a **fixed income portfolio** the sub-component return attributes are:

- *Contribution to Duration* – This measures how much of the portfolio's interest rate risk exposure is coming from a particular issue or sector.
- *Issue / Sector Selection* – This measures the value added / detracted by the manager at the issue or sector level versus the buy and hold return of the issue for the period.
- *Quality* – This measures how much of the value added / detracted is coming from the issue or sector quality exposure.

For a **non-U.S. equity portfolio** we sub-divide the portfolio performance into seven return attributes. These are:

- *Timing* – Again referring to the use of cash.
- *Currency Hedging* – This reflects the contribution of hedging currencies.

- *Currency Selection* – This reflects the currency impact of over or underweighting a certain country market.
- *Country Market Selection* – This measures the value added from overweighting good performing markets or underweighting bad performing markets.
- *Sector Selection* – This is whether the account is correctly deployed toward better performing economic sectors.
- *Stock Section* – This refers to how well stocks are selected within sectors and countries.
- *Trading* – This refers to intra-quarter transaction activity and its impact on portfolio performance.

Additionally, our non-U.S. returns both for the account and the indices are expressed in both the reporting currency (dollars for U.S. clients) and local currency.

In our **non-U.S. fixed income** performance section we compare how the actual account returned against the appropriate benchmark and then sub-divide the return into the following five performance attributes:

- *Currency Hedging* – Measures how well currency hedging has contributed to the portfolio's performance.
- *Currency Selection* – This represents the contribution of (under) overweighting currencies as a result of country allocation.
- *Country Market Selection* – This represents the contribution of (under) overweighting certain country fixed income markets.
- *Duration* – This measures the duration decision within each country.
- *Other* – This represents transaction activity for the quarter.

For complex portfolios that include extensive futures and options positions, we will use Wilshire Atlas^{SM} and Wilshire Axiom^{SM}, which have fully integrated these complex securities into the attribution and risk analysis. A sample Quarterly Performance Report is provided **under separate cover**.

52. How does the Firm monitor or track the investment style of portfolios? What style analysis systems or models does it use?

Managers are categorized using two approaches:

- Managers provide their own style categorization;
- Wilshire calculates styles using proprietary internally developed style metrics.

Wilshire has developed proprietary analytics to evaluate manager style for several asset classes. We utilize two approaches: portfolio holdings-based and returns-based. Our holdings-based style analysis is unique in the industry. To determine portfolio style, our holdings-based style analytic utilizes multiple statistical algorithms, such as Bayesian models, to categorize the style each individual portfolio holding. The overall

portfolio style is derived by aggregating the exposures of the individual portfolio holdings. Because our databases have the capacity to store up to ten years' worth of quarterly portfolios, we are able to measure style drift effectively.

For returns-based style analysis, Wilshire uses a linear, multi-factor regression model to regress quarterly portfolio returns (for mutual funds, this analysis uses monthly returns) against seven Wilshire style benchmarks in order to determine style characteristics: Large Growth, Large Value, Midcap Growth, Midcap Value, Small Cap Growth, Small Cap Value, and Microcap. Our preference is longer time periods for this type of analysis while the holdings-based style analysis can be undertaken for shorter time periods and yield fairly accurate results.

Wilshire's Performance Analytics allows both Wilshire consultants, who are responsible for all client monitoring, and the client to monitor manager consistency of style, frequency, objective and guideline compliance and attribution analysis.

Wilshire has developed an analytical tool called the Wilshire Style Map as a means of monitoring manager style. This map reflects a manager's style orientation based upon two dimensions: style (value / growth) and capitalization (large / small). Size and style metrics are calculated for each holding within a portfolio and then aggregated to provide a single measure for the entire portfolio. The metrics are calculated using the statistical measures of rank correlation analysis (which measures the relationship between two variables), discriminate analysis (which produces coefficients for each stock based upon the aggregated means and standard deviations of their respective fundamental characteristics), and Bayesian statistics (a process for revising prior (*posterior*) probabilities to incorporate new sample information). Measured over time, a manager's portfolio can be plotted relative to the broad market (i.e., the Wilshire 5000®) to determine the "true" style orientation. An example of such an investment structure monitoring tool is presented below, displaying the equity composite portfolio and the target portfolio (Wilshire US Mid-Cap Index) quarterly over a three year period.

In addition to the Style Map, the analytics within Wilshire's performance measurement report for individual managers allows clients to observe a manager's style orientation via the bets made in the portfolio over time. In all the manager sections, it is possible to track the manager's sector diversification and investment characteristics (such as P/E or yield-to-maturity), over time on one page. Additionally, attribution models show what the source of performance relative to the manager's benchmark is over time. Therefore, on a quarterly basis, Wilshire has the means to independently determine where a manager's source of return lies both on a period-by-period basis and over cumulative periods.

Wilshire also has the ability to look at style using a returns based attribution methodology using the Wilshire Compass technology. In this approach, we can either take returns at the plan, asset class composite level or manager level and using either standard or selected indices run a linear, multi-factor regression model to regress quarterly portfolio returns against the index returns to determine asset class or style characteristics. Our preference is longer time periods for this type of analysis while the holdings-based style analysis can be undertaken for shorter time periods and yield fairly accurate results. Often times, the return and fundamental based style attributions are used in conjunction with each other.

53. Does the Firm monitor or track the compliance of the client's portfolios with:

(a) Investment policies and guidelines of the fund?

We do assist client in developing appropriate compliance monitoring programs. Our quarterly reporting does include holdings based characteristics and can be used to identify portfolios characteristics that are out of compliance with the existing investment policy. Since this process is an ex-post evaluation, we work with our clients to develop explicit manager guidelines and a process to appropriately monitor the adherence to those guidelines. This may include the selection of a compliance monitoring system at the custodial level to flag potential violations.

(b) Manager mandates, agreements or contracts?

Manager compliance is monitored on a quarterly basis. More importantly, when managers are selected, one criterion is for the managers to have a sufficiently supplicated technology system that can hard code all the clients' investment guidelines, and therefore non-compliant trades cannot be executed.

Wilshire is an industry leader in the development of benchmarks. In the 1970s, recognizing the narrowness of the Dow Jones Industrial Average and the S&P 500 Index, Wilshire created a full market index, the Wilshire 5000 Total Market Index^{SM} to measure U.S. stock market performance. Later, Wilshire created the entire category of U.S. equity style indexes, including the Wilshire US Real Estate Securities Index^{SM} that is now recognized by institutional real estate securities managers as an institutional quality real estate securities index.

As a result, we can calculate custom indexes for our clients. Custom indexes are calculated within the same fee at the direction of the client and then are made electronically available to whomever the client directs at no additional fee. In this way, all potential conflicts of interest are completely avoided.

Because of Wilshire's strong quantitative orientation, and its leadership in the development of global equity risk models, we are capable of developing "normal" portfolios. Wilshire can do this in three ways so that we can confirm through different methodologies that we are developing the appropriate "normal" portfolios:

- *Returns-based attribution over rolling periods* – Wilshire has the capability to regress historical performance against a variety of indexes and sub-indexes to determine a returns-based attribution in accordance with the methodology developed by Dr. William Sharpe. However, looking at this as a sole means can lead to ex-post bias in that it assumes that the past return pattern will

repeat itself, even if the ex-ante market cycle changes…an erroneous assumption. For example, some U.S. large cap value managers moved down the market cap spectrum coming into the new millennium because smaller cap stocks under-performed their large cap counterparts and were seen as under-valued in the late 1990s. Those smaller cap stocks on a returns-based attribution analysis, if the results were used as the ex-ante future benchmark, presumes that the manager would always bias the portfolio toward the smaller end of the permitted market cap range. In fact once value was realized those managers would move away from that particular smaller market cap sector. Ex-post returns-based attribution analysis would bias the future benchmark construction. However, it is good for determining how the managers' factor exposures have changed over a market cycle in response to the cycle.

- *Holding-based analysis* – Holdings-based analysis, also against style-oriented indexes or sub-indexes also can determine a manager's factor exposure bias. If for similar periods, holdings-based and returns-based attribution analysis confirms each other, then the manager's current portfolio holdings are probably the best input to the development of the future normal portfolio or index.

- *Risk factor analysis* – Using a global risk model, Wilshire can assess the fundamental risk factors exhibited by the manager in an effort to develop an ex-ante index. The Wilshire Atlas^{SM} risk model would be used for this purpose.

By using all three methodologies, we have a better chance of assessing a manager's risk factor exposures and separating them from pure alpha generation (or the lack thereof) for the development of a custom index.

Generally speaking, Wilshire prefers comparisons of managers versus benchmarks to comparisons versus peers. Peer universes are not CFA Institute-compliant benchmarks and are not pure measurements of the performance of a particular sector or asset type. Given our ability to analyze the performance of both managers and benchmarks down to the individual security level, we believe that it is fairer to analyze a manager versus their specific benchmark. That being said, however, peer universes do have their place for understanding how a given manager has performed relative to other options in the marketplace. As was outlined in a prior response, given thousands of products in our database and the multiple ways we can define a peer universe, we believe that our universe comparisons are extensive.

(c) Laws and regulations? If so, how and to what extent? Please explain briefly.

We believe that open and constant communication between our consulting team and the staff of the fund is integral to the compliance process. Generally, we work with the client's internal counsel to keep abreast of legal or regulatory requirements and changes to those requirements.

Wilshire works with clients to specify overall objectives that are consistent with the plan's financial and compliance requirements, reflect the asset allocation strategy, and are realistic given available investment opportunities. A written policy statement establishing overall investment objectives is prepared. It includes specific policies and procedures, asset allocation guidelines, and performance objectives. Items that should be included in the investment policy are:

- Mission Statement / Objectives
- Asset Allocation Policy
- Duties and Responsibilities of all Parties
- Investment Philosophy
- Investment Structure
- Individual Manager Guidelines
- Proxy Voting Policy
- Brokerage of Soft-Dollar Policy
- Manager Retention and Evaluation Policy
- Rebalancing Policy
- Securities Lending
- Corporate Governance
- Derivatives Policy

Research and Education

54. Does the Firm undertake any research on general investment and pension-related issues?

Wilshire Consulting's Research Group is comprised of our Asset Allocation Group and Investment Research Group. The Asset Allocation Group focuses on developing and maintaining Wilshire's proprietary asset / liability models, while the Investment Research Group performs in depth analysis of all aspects of an institutional investment program, including, for example, capital and alternative market research, investment structure research and industry analysis.

Under a single research platform, the merging of our Asset Allocation Group and Investment Research Group ensures the collaboration of distinct, yet complimentary areas of Wilshire's consulting focus. This uniform structure maximizes the research

input of Wilshire's lead actuary, who is critical in assisting on research issues pertaining both directly and indirectly to asset allocation issues.

Wilshire Consulting's Research Group has a distinct structure that combines the efforts of dedicated independent researchers (independent of client service responsibilities) and senior consultants, who ensure client advocacy and the direction of research work toward germane subjects that are of particular interest to our clients.

Wilshire Consulting's Research Group also benefits from the direct contributions of Julia Bonafede, President of Wilshire Consulting. Julia's personal involvement solidifies Wilshire's research commitment and ensures that the effort continues to receive high level priority. To ensure relevancy, senior consultants participate on an ad hoc basis. Since the consultants' primary responsibility is serving their clients, the rotating nature of their participation in research ensures that they can satisfy their primary objective. However, since client issues often are the genesis for research ideas, the senior consultants are instrumental in bringing those issues forward and seeing that the attendant research contains practical recommendations and is carried through to completion.

While many research topics are the direct result of client feedback and discussion, Wilshire Consulting's Research Group routinely pursues interesting ideas to enable Wilshire to remain a thought leader in the industry. We find that the combination of independent research, coupled with client-driven advocacy through consultant involvement in the research process, ensures an end product that is focused on relevant challenges facing Wilshire's consulting clients.

The Investment Research Group generates research reports for Wilshire clients in the following four major category types:

Asset Class and Investment Strategy "White Papers"

Wilshire prepares a research report for its clients at the beginning of every year describing its recommended long term asset class return and risk assumptions for all recognized asset classes. The report describes in detail how Wilshire generates the assumptions used in all of our asset allocation studies. This asset allocation report is a perennial favorite among Wilshire clients and others. A full analysis of Wilshire's asset class assumptions can be found in our 2012 Asset Allocation Report, which is provided in the **Appendix, Tab 3**. Throughout the year, Wilshire produces white papers which are focused on particular asset classes and investment themes. These reports are designed to provide educational and historical background, assess return and risk potential, examine structural trends in the asset class, and present actionable recommendations that consider implementation issues. White papers are sent electronically on an ongoing basis to clients as part of the overall relationship and are often generated as the result of specific client needs and / or in response to new trends in the industry. Wilshire strives to produce at least six topical research reports a year.

Market / Economic Reviews

Wilshire distributes a monthly Wilshire *Perspectives* newsletter, which contains major market index returns for all pertinent time periods in a tabular format. During the first week of each quarter, a quarterly Wilshire *Perspectives* is published, which includes a market commentary from our Investment Research Group. The goal of our Capital Markets Review is to outline recent and long-term market activity and results. Wilshire's Manager Research Group also provides a quarterly review of the most significant investment manager developments of the recently ended quarter. The monthly and quarterly Wilshire *Perspectives* newsletters are made available to clients electronically via email and through our website. The most recent monthly and quarterly Wilshire *Perspectives* are provided in the **Appendix, Tab 4**.

Topical / Event Driven

Wilshire Consulting's Investment Research Group closely monitors activities within the capital markets and issues research notes on material events which are pertinent to our clients' investments. All event driven research notes are focused on providing sufficient background and information, in a timely and easy to read manner, to assist Wilshire clients in determining an appropriate response to important industry events. As with all investment research reports, these publications are made available to Wilshire's consulting clients electronically via email and through our website.

Industry Trends

Each year, Wilshire produces three surveys on pension plan funding levels: one for States, one for Cities and Counties, and a third for Corporations. These reports are extremely popular with Wilshire clients as they serve as useful measures of how individual plans compare with their peers. Wilshire's funding reports have become a widely referenced source for researchers in both the private and public sectors.

The following table provides a representative sample of timely research topics that Wilshire Consulting has provided to its clients.

YEAR	PUBLICATION TITLE
2012	European Market Review
2011	Dynamic Asset Allocation
2011	Investing in MLPs
2011	2011 Market Sell-off: Investor Implications
2011	Municipal Bonds: Historical, Current & Future Perspective
2011	Target Date Funds: The Current Marketplace
2011	Funding Reports: State, Corporate, City & County
2010	Defined Contribution Plan Notes: Longevity Risk, Annuities and Lifetime Income Products
2010	Yield Environment in Perspectives

YEAR	PUBLICATION TITLE
2010	Fixed Income Structure: High Yield and Core versus Core-Plus Mandates
2010	Opportunistic Investing
2010	Stable Value 2010 Marketplace
2010	Benchmarking Private Investments
2010	Risk-Focused Diversification
2009	Wilshire Historical Investment Performance (WHIP) Score
2009	Use of Leverage in Investment Portfolios
2009	Implications of Return Non-normality on Asset Allocation
2009	SOS - TARP, TALF, PPIP, BAB
2009	Emerging Markets Debt (Two Parts)
2009	U.S. Government Activity in 2008-09 and Long Bonds

Internet
Clients also have access to an extensive database of Wilshire research papers through a password-protected area of our website. This database is searchable by topic and keyword, allowing clients to find the paper that best suits their needs.

Client Seminars
Annually, Wilshire Consulting holds a client seminar where a major portion of our latest research is presented. We encourage all clients to attend our client seminar to find out more about the issues facing the fund sponsor community. No external sources are used at this client seminar.

Client Education
Wilshire believes first and foremost that our role is an extension of our clients' internal staff and as a resource to our clients' Boards and Committees. As such, we have always emphasized fiduciary education as the primary means of enabling our clients, as fiduciaries, to build sound investment processes and make efficient and appropriate investment decisions.

We believe we have one of the deepest investment research capabilities amongst our peers, as we have always maintained a dedicated capital markets and actuarial research effort. We have only broadened this research effort in recent years in recognition of the many more investment opportunities and decisions facing our plan sponsor clients given the increased breadth of strategies and asset classes. As we only work with clients on a retainer basis, we expect to be retained through the long term so that we, and our clients, will be able to measure the efficacy of our advice. Thus, we are very focused on ensuring our clients understand all facets of the decisions they are making so that everyone will be satisfied with the ultimate outcome. This is only achieved through regular education and communication. Wilshire has provided educational sessions to its clients on a number of topics, including: Financial Futures, Fixed Income Strategy, International Investing, Performance Fees, Securities Lending, Strategic Asset Allocation and Tactical Asset

Allocation. All of these sessions have been geared to assist a busy committee and internal staff in learning about emerging and complex investment issues.

Analytic Resources
The computer-based analytical tool Wilshire offers to clients is Wilshire Compass, which is a PC-based executive information and consulting tool. Wilshire Compass combines comprehensive databases with sophisticated investment technology to assist the fund sponsor in developing investment policies, evaluating and implementing investment strategies and monitoring the investment program. The analytic system is designed to address all levels of fund analysis including asset allocation, manager team analysis, style risk management, manager selection and performance evaluation and monitoring. This is a separate service and is not included in the General Consulting retainer fee, if clients wish, they can subscribe to Wilshire Compass separately.

(a) How many research studies (reports and/or white papers) has the Firm produced over the last three years ending [date] on the following broad topics?

Please refer to our detailed response to Question 54 above.

(b) What other types of publications are made available to clients? How frequently are these publications produced?

In addition to the reports described in Question 54 above, Wilshire Consulting typically produces the following performance reports for clients:

Executive Performance Summary (quarterly)
Flash Reports (monthly)
Perspectives (monthly and quarterly)
Performance Report (quarterly)

55. How does the Firm provide education services to board trustees and staff?

Delivery of Education to Trustees/Staff	Yes/No
Regular Board Meetings and Retreats	Yes
Half to One-Day Seminars/Workshops at Client Offices	Yes
Annual Client Conference	Yes
Internet (Webinars)	Yes
Other (please specify):	-

Wilshire provides education to board members and staff for all of the above. Wilshire believes, first and foremost, that our role is an extension of our clients' internal staff and as a resource to our clients' Boards and Committees. As such, we have always emphasized fiduciary education as the primary means of enabling our clients, as fiduciaries, to build sound investment processes and make efficient and appropriate investment decisions.

What is distinctive about your delivery of education to clients? Please explain briefly.

We believe we have one of the deepest investment research capabilities amongst our peers, as we have always maintained a dedicated capital markets and actuarial research effort. We have only broadened this research effort in recent years in recognition of the many more investment opportunities and decisions facing our plan sponsor clients given the increased breadth of strategies and asset classes. As we only work with clients on a retainer basis, we expect to be retained through the long term so that we, and our clients, will be able to measure the efficacy of our advice. Thus, we are very focused on ensuring our clients understand all facets of the decisions they are making so that everyone will be satisfied with the ultimate outcome. This is only achieved through regular education and communication. Research white papers are distributed automatically to clients via email as they are published. Additionally, Wilshire offers a web based client portal where clients can log on to access a searchable Resource Library that includes investment research white papers as well as Wilshire client conference presentations for the past several years. Wilshire has provided educational sessions to its clients on a number of topics, including: Financial Futures, Fixed Income Strategy, International Investing, Performance Fees, Securities Lending, Strategic Asset Allocation and Tactical Asset Allocation. All of these sessions have been geared to assist a busy committee and internal staff in learning about emerging and complex investment issues.

Wilshire Consulting formally holds a client seminar once a year. Money managers are not invited to attend or sponsor this conference. During this seminar we hold sessions outlining our research findings on contemporary topics of interest, workshops, which include plan sponsor involvement and updates on topics that evolve over a period of time. Wilshire's seminars are conducted entirely by our consultants. Every consultant participates by providing research on important and relevant investment topics. Wilshire believes this approach requires our consultants to remain "on top of changing events" in the marketplace. The agenda for our 2012 Consulting Client Conference is provided in the **Appendix, Tab 5**.

56. What percentage of total revenue did the Firm spend on research and investment technology (software, databases, etc.) on average over the past three years?

Wilshire reinvests the majority of its revenues into research activities. Wilshire was built and continues to thrive on its reputation for publishing innovative investment

research and developing advanced investment technology. The majority of our revenues are reinvested in our personnel, who are responsible for developing research and technology. Outside of personnel costs, we spend another 5% directly on databases, technology development tools and hardware. We gather and compute a large majority of the data we use in our manager research process and offer these proprietary databases to clients through a variety of analytic services that also include performance measurement, performance attribution and risk management. We also build tools for asset / liability modeling and for manager oversight, selection and monitoring. We have business units that are dedicated to building investment technology for fixed income portfolios, equity portfolios and the total fund. We have research groups dedicated to general capital market and economic research, manager research, asset allocation, private markets and real estate.

Litigation and Insurance

57. Has the Firm, or any officer, principal, or employee of the Firm or an affiliated company, ever been investigated and/or charged by the Securities and Exchange Commission ("SEC"), the U.S. Department of Labor ("DOL"), or any other regulatory authority for violation of applicable laws? If so, please explain.

Wilshire's policy is not to comment on regulatory matters. To the extent that Wilshire is required by law to disclose a sanction, fine or similar proceeding, disclosure will be included in Wilshire's Form ADV. We are not aware of any issues related to regulatory matters that would materially impact Wilshire's ability to perform its obligations to clients.

58. Has the Firm, or any officer, principal, or employee of the Firm, ever been involved in any business litigation or other legal proceeding? If so, please explain and indicate the current status of the litigation.

In late 2003 and early 2004, a number of class actions were filed against mutual fund companies, relating to certain trading strategies. Subsequently, a number of traders and brokerage firms that executed trades were added as defendants to the class actions. In November 2004, Wilshire was added as a "trader" defendant in two of these actions known as the MFS Subtrack and the Alger Subtrack. Wilshire filed motions to dismiss both actions, and a ruling was issued in November 2005 granting in part and denying in part Wilshire's motions. Wilshire thereafter reached agreements to settle both cases, each settlement to be paid by Wilshire's insurance carrier. On October 25, 2010, the Court granted final approval of the settlements.

Wilshire has been involved in actions to collect fees due Wilshire.

To the best of Wilshire's knowledge, there is no pending litigation against Wilshire that would affect our ability to fulfill contractual commitments.

Wilshire has been subpoenaed to provide information in respect of litigation in which Wilshire is not a party.

We do not track personal litigation of Wilshire employees. However, to the best of our knowledge, no principal, officer, or manager of Wilshire has pleaded guilty to, pleaded nolo contendere to, or been convicted of or indicted for any crime involving theft, veracity, truthfulness, conversion of property, fraud, identity theft or felony.

59. Does the Firm, or any officer, principal, or employee of the Firm, have any lawsuits pending against it concerning the delivery of investment consulting or related services for any client? If yes, please explain.

A small number of Wilshire Consulting clients invested portions of their portfolios with Westridge Capital Management and its affiliates (collectively, "Westridge"). In 2009, Westridge and its principals were investigated and subsequently charged with the theft of client assets. One of Westridge's principals, Paul Greenwood, pleaded guilty to criminal charges and is awaiting sentencing. Another, Stephen Walsh, is awaiting trial. A court-appointed receiver is in the process of recovering and distributing assets to defrauded investors. In May 2011, Kern County Employees Retirement Association ("KCERA") filed suit against Wilshire alleging liability for KCERA's Westridge related loss. In August 2012, Wilshire and KCERA agreed to settle their dispute and the settlement was paid by Wilshire's insurance carrier. In August 2012, a lawsuit was filed in the name of the Timken Company (a current client of Wilshire), by its insurer Federal Insurance Company, alleging Wilshire should be liable for Timken's Westridge related loss. Wilshire believes that the claim is without merit.

60. What level of insurance coverage does the Firm have for professional liability or errors and omissions, and other types of liability insurance?

Wilshire carries the following insurance coverages and deductibles.

Type of Policy / Bond	Aggregate Liability Limit	Deductible	Insurer
Business Personal Property (Business Package)	$12,535,000	$1,000	Federal Insurance Co.
General Liability & Employee Benefit Liability	$2,000,000	$1,000	Federal Insurance Co.
Electronic Data Processing (EDP) (Computer Property Incl Voice Communication Systems - 6 locations)	$4,550,000	$1,000	Federal Insurance Co.
Employee Benefits Errors and Omissions	$1,000,000	$1,000	Federal Insurance Co.
Commercial Excess Liability (Umbrella)	$4,000,000	$1,000	Federal Insurance Co.
Fidelity Bond (a.k.a. Employee Dishonesty, Financial Institution Bond, Stockbrokers Blanket)	$1,000,000	$100,000	Federal Insurance Co.
Workers Compensation Employers Liability	$1,000,000	none	Federal Insurance Co.

Type of Policy / Bond	Aggregate Liability Limit	Deductible	Insurer
Investment Advisors Professional Liability (E&O/D&O)	$10,000,000	$500,000	St. Paul Travelers

Performance

61. Please provide the following information on the investment performance for the 5-year period ending June 30, 2012 of your full service public pension fund clients (where full service is defined to include advice on asset allocation, investment manager selection and performance measurement) which are similar in size to the City of Fresno Retirement Systems (i.e. $1-10 billion). Note that we are asking for the simple unweighted average performance for all of these public pension client funds as a group, not the performance of each individual fund.

Performance Information	Net	Gross
Number of Full-Service Public Pension Fund Clients	11 clients	
Average Total Fund Return	2.19%	2.55%
Average Asset Mix Policy Return	2.68%	2.68%
Average Excess Return (Total Fund – Asset Mix Policy)	-0.48%	-0.12%
Average Volatility (Standard Deviation) of Total Fund Return	15.11%	

Represents a market value of $3.35 billion.

PART C: PHILOSOPHY AND APPROACH TO CONSULTING

1. What is the overall philosophy of the firm regarding an investment consultant's relationship with the board of trustees, staff, and investment managers?

We believe that each client relationship is unique and the relationship desired by each client can significantly vary. Many of our clients view Wilshire as an extension of staff. We are available to assist in any way possible to facilitate the accomplishment of the fund's long-term and short-term objectives as we always view ourselves as fiduciaries to our clients.

Investment decision making structures should involve both the consultant and either the board or staff of the plan sponsor. We work diligently to assist both boards and their

staffs with the decision making process by providing clear and concise recommendations. A team relationship among board, staff and consultant is often the most effective solution for the decision making process. Additionally, our role as consultant is to provide clear and thoughtful recommendations.

We believe it is imperative to maintain positive relationships with investment managers and other service providers. We maintain an open evaluation process with investment managers in which any manager can submit data to our internal database as well as a qualitative questionnaire. We also allow managers access to the evaluations we provide to ensure appropriate feedback. We do not charge managers for inclusion in this process.

2. State as clearly as possible the firm's investment philosophy. Are there any fundamental beliefs about capital markets which underpin the firm's investment advice to its pension plan clients? What are the critical issues to consider in establishing the investment policy for a public pension plan?

Our investment philosophy is to combine theoretical research with empirical evidence to develop practical solutions that our clients can easily and effectively implement. In developing and implementing clients' investment policies, we emphasize risk control and cost management.

Wilshire has a total fund investment philosophy where the focus is meeting the long-term investment objectives of our clients in the most cost-effective manner. This is accomplished through the development of optimal investment policies that limit active management to areas where value may be added with a high probability of success. Total fund attribution clearly explains which investment decisions are adding value. We expect long-term asset allocation decisions to explain approximately 90% of total fund results. Portfolio rebalancing, investment structure and manager selection will explain the remaining 10%. We are efficient market theorists and base our recommendations upon sound theoretical and empirical evidence.

We believe cost management is essential to improved fund performance. Therefore, we carefully consider all transaction costs and fees when analyzing new asset classes and investment strategies. We believe simpler structures focused on the client's long-term return objectives provide the best solution. Additionally, we have been advocates of performance-based fees for active managers where they make sense. We believe that by aligning manager and sponsor interests, managers become more focused on meeting their clients' objectives and improving their investment process to remain competitive.

As efficient market theorists focused on cost management, we are biased towards passive strategies in efficient market sectors such as public large cap equities. With respect to active management strategies, we are biased towards bottom-up, issue selection approaches which incorporate risk controls versus the appropriate benchmark. We believe in style and size neutrality versus the market.

Wilshire should be viewed as an extension of staff. We are available to assist in any way possible to facilitate the accomplishment of the fund's long-term and short-term objectives.

Are there any fundamental beliefs about capital markets which underpin the firm's investment advice to its pension plan clients?

Wilshire's Operating Principles

- We believe that disciplined, strategic asset allocation is the key to a successful investment program.
- We believe our consulting expertise lies in building structured investment programs from the top down
- We believe that managing risk is as important as achieving return
- We believe that any risk taken must be compensated and understood
- We believe in cost effective solutions and practical applications
- We believe in results-oriented, innovative ideas
- We believe in pro-active client service
- We believe in long-term relationships

The Wilshire philosophy is built upon years of capital market research. Our philosophy draws upon this research and while each client's portfolio and risk tolerance profile is unique, we have found that these practices are general guidelines to building a sound investment program that seeks to maximize return with a thorough knowledge of the inherent risks.

What are the critical issues to consider in establishing the investment policy for a public pension plan?

Public pension plans have to take into account issues such as amortization of unfunded liabilities, DROPs, supplemental retirement benefit reserves in addition to consideration of employee and employer contribution levels and how those may fluctuate. These are aspects of formulating investment policy which are unique to public pension plans and are not faced by corporate pension plans or endowment / foundation plan sponsors. Thus, these factors make for a more complex asset / liability analysis. On the other hand, public pension plans tend to be large in size and can take advantage of a lot of cost saving strategies, such as passive implementation in efficient asset classes, separate accounts and performance or incentive-based fees. We believe the most crucial issues to consider are the asset allocation decision in the context of the accounting and funding nuances for public plans and cost management in addition to providing value-added on a risk-adjusted basis.

3. Please summarize, in one page or less, the firm's investment consulting capabilities and expertise. What are the firm's major strengths and limitations? Do you provide any services which are not provided by other investment consultants? Why should the retirement system engage you as its investment consultant?

Why hire Wilshire

Wilshire, founded in 1972, is committed to providing investment consulting services to global institutions and has developed valuable experience over the firm's 40 year history.

Wilshire is 100% owned by key active employees, which we believe provides the best motivation for our consultants to provide the best client service possible. Wilshire's senior consultants are experienced professionals, with nearly 12 years at Wilshire and 15+ years with the industry; 90% have post-graduate degrees and 70% hold the CFA designation. We also attribute our high client retention, which averages 11 years, to the strength of our consulting staff.

Wilshire Consulting employs approximately 90 employees in our Santa Monica, Denver, and Pittsburgh offices. We currently consult to 124 clients with total assets of approximately $734 billion under advisement as of March 31, 2012.

A significant focus of the firm's resources is on investment technology and its application in solving investment-related problems. Our thought leadership started in the 1970's when Wilshire became an early innovator in creating the industry's integrated asset/liability analysis/simulation models as well as the industry's practical models in risk budgeting through beta and active risk analysis. Wilshire Compass, an executive decision tools for fund sponsors, is now used by funds totaling nearly $1 trillion in assets to develop, monitor and evaluate their investment programs.

For many years Wilshire has recommended that clients define their investment opportunities broadly. The introduction of the Wilshire 5000 Total Market Index^{SM} in 1975 reflects our view. This broad market perspective is evident in our asset allocation analysis and encompasses all of the major asset classes and the alternative asset classes. Markets have become globally integrated at a rapid rate and we recognize this shift as an irreversible trend. Therefore, we advocate that clients consider the world investment opportunity set as a whole, rather than in a segmented manner that focuses on a regional approach.

Wilshire has significant experience in alternative asset classes. We currently have research coverage in private equity, hedge funds, commodities, private real estate, infrastructure, timberland and other non traditional asset classes, and have routinely incorporated these asset classes in our clients' strategic asset allocation. Wilshire believes that long term investors cannot ignore the impact of inflation to the long term health of investments, and therefore, a diversified inflation hedging portfolio should be part of an institution's investment program.

Wilshire is at the forefront of risk management and risk budgeting research and practice. Wilshire Analytics creates some of the most state-of-the-art risk models and analytics, and Wilshire Consulting benefits greatly from having access to the products of Wilshire Analytics. We use these proprietary analytical tools in analyzing clients' current portfolios, understanding risk sources and helping design risk budgeting procedures. Because we build all our own analytical tools, we control it and can customize it to meet client needs. Our technological capabilities combined with the experience and skills of our consulting staff enable us to assist clients with almost any investment issue imaginable.

Wilshire Consulting has over 30 years of experience in developing investment policies, procedures and guidelines for fund sponsors. The policies we help develop range from total fund investment and operational policies to individual manager's custom benchmarks and guidelines, including policies for derivatives use, for hedge funds and alternative managers, and for risk management purposes.

Wilshire's focal point of client service delivery is the lead consultant, supported by a consulting team. The team serves as the focal point for all communication in order to ensure a consistent, high level of service and quality. Consulting services will continue to be performed from the Denver office, where Tom Toth and his team is located.

We believe Wilshire has one of the lowest clients to consultant ratios in the industry of approximately 5 to 1. Our growth is contingent upon our ability to attract and retain qualified investment professionals. Wilshire requires that its senior consultants possess fund sponsor experience, MBA or CFA designations, and / or investment management experience

Wilshire believes the highest level of general consulting services to clients can best be achieved with long-term relationships where we have an opportunity to fully understand and appreciate the objectives, investment risk tolerance, legal obligations, and decision-making dynamics of our clients. Wilshire's standard fee structure is an annual retainer that includes all services and many special services that periodically arise. Full-retainer consulting relationships are the most economical way for clients to take advantage of our capabilities and resources.

4. What do you consider the unique attributes of: (a) your asset allocation methodology, and (b) your investment manager search process? How do these distinguish your firm from other investment consulting organizations?

We do not believe there are any disadvantages to using Wilshire's ALV methodology as we believe this is a superior approach to traditional mean variance optimization. Perhaps the only disadvantage is that it requires explanation due to its uniqueness. The advantages, we believe are three-fold. First, Wilshire's ALV methodology truly incorporates liabilities into the asset/liability analysis, which is not the case for traditional mean variance optimization, which focuses on asset-only scenarios. Second, Wilshire's ALV provides an excellent means of understanding the downside risk (i.e., risk of shortfall) with each potential asset allocation scenario by providing probability distributions for each asset mix. Third, Wilshire's ALV is flexible in that it can be used to compare traditional asset allocation scenarios with those produced under a surplus optimization framework. Regulators have dictated that pension liabilities be reported in a way such that plan sponsors may be incentivized to better control short term asset/liability mismatches. Wilshire's ALV provides the optimal asset allocation tool for evaluating the trade-offs associated with short-term mismatch volatility management versus long-term asset growth.

Because Wilshire Consulting maintains its own proprietary asset / liability models and full-time actuarial and programming staff, the primary advantage is that we are able to utilize an array of models in order to reflect clients' unique characteristics. Thus, it is our flexibility, combined with extensive experience that makes our asset allocation

approach unique. Wilshire's asset allocation tools range from the classic "asset-only" models to the most advanced portfolio selection models that utilize detailed information about a client's financial commitments. These methodologies can incorporate various objectives (economic, accounting, actuarial, separately or altogether) the client may have. Another advantage is that because we create and maintain all of our asset allocation and asset / liability modeling analytical tools in-house, our models are highly customizable and flexible and can accommodate any number of major or sub-asset classes as well as virtually any constraint that may affect the client's asset allocation decision. Our analysis is based on capital market assumptions that include, but not limited to, expected returns, standard deviations and correlations for each major asset class.

Furthermore, Wilshire Consulting's Asset Allocation Group employs full time dedicated actuarial professionals to maintain and evolve our asset / liability modeling capabilities and to support consultants, and clients directly, in asset allocation projects. The Investment Research Group is responsible for researching and producing our annual capital market assumptions for use within asset allocation and asset / liability modeling projects.

What do you consider the unique attributes of your investment manager search process?

The breadth and quality of Wilshire's database and risk management tools sets Wilshire apart from our competitors. Wilshire invests several hundred thousand dollars each year in databases from leading providers in the industry. In addition, Wilshire has developed many of the widely used market indices from this database (e.g. Wilshire 5000 Total Market Index^{SM}) that others follow today. Wilshire participates in select domestic and international institutional investor conferences with an educational objective. Wilshire also subscribes to the Spencer reports, which provide frequent, regular updates regarding pension legislation and ERISA-related issues for defined benefit and defined contribution plans.

The non-U.S. marketplace has shown more and more interest in Wilshire's capabilities and products. This has led to our expansion of operations to London, Amsterdam, Melbourne, Singapore, and Hong Kong. The cross-fertilization of consulting and our analytics products further enhances our reporting and tracking capabilities of global trends and influences.

Furthermore, Wilshire differentiates itself from competitors in terms of research, technology, experience, and business model.

Research Capabilities

Wilshire Consulting has a dedicated research team. Research topics are the direct result of client feedback and discussion, and the Investment Research Group routinely pursues interesting ideas to enable Wilshire to remain a thought leader in the industry.

We find that the combination of independent research, coupled with client-driven advocacy through consultant involvement in the research process, ensures an end product that is focused on relevant challenges facing Wilshire's consulting clients.

Investment Technology Resources

A significant focus of the firm's resources is on investment technologies and the application of investment technologies to solve investment-related problems. Our thought leadership started in the 1970's when Wilshire became an early innovator in creating the industry's integrated asset/liability analysis/simulation models as well as the industry's practical models in risk budgeting through beta and active risk analysis. Wilshire Compass was an early executive decision tool for fund sponsors and is now used by funds totaling nearly $1 trillion in assets to develop, monitor and evaluate their investment programs. Wilshire Consulting also benefits greatly from accessing the products of Wilshire Analytics, which are leading edge portfolio risk analytics. We use advanced fixed income analytics in our performance measurement system, utilize multifactor risk models for equities to conduct specialized portfolio analysis for our clients, and use a total fund risk management framework to facilitate identification, measurement and control of plan-wide risks.

Experienced Staff

Wilshire and its affiliates employ more than 300 people in ten offices and affiliated companies around the world: Santa Monica (*headquarters*), Pittsburgh, Jersey City, Chicago, Denver, London, Amsterdam, Melbourne, Singapore and Hong Kong.

Wilshire's consulting staff consists of 26 consultants organized into six consulting teams, each with their own dedicated research and support staff while also sharing firm wide research and operational support resources. Each consulting team serves a diversified client base, which includes corporate and public fund sponsors, endowment and foundation funds, and non-profit institutional investors.

Wilshire's consultants have diverse backgrounds with experience in the investment management, plan sponsor, and custody businesses. Our high-quality, long tenured consultants provide client service through a dedicated team structure. Wilshire senior consultants average nearly 12 years with Wilshire and 15+ years with the industry; 90% have post-graduate degrees and 70% hold the Chartered Financial Analyst designation.

Service Delivery Model

We combine two prominent service models in investment consulting today: centralized resources and dedicated client service. We believe that there must be a dedicated team assigned to each client account in order to establish an intimate working knowledge of a client's issues and, in effect, to become the extension of staff. All client service work is handled within the team and centralized resources are used to leverage the consulting

team's time and expertise. In effect, Wilshire provides each client with the personalized attention benefits of a small firm and the resources of a large firm.

5. Please summarize the firm's capabilities and expertise in value-added and opportunistic real estate investments, and its due diligence process for manager searches in this asset class.

Wilshire believes many investment portfolios with a long-term horizon can benefit from a strategic allocation to real estate. We also believe real estate is an important part of a broader real return portfolio (inflation hedging portfolio). As such, a majority of our clients have some type of real estate, or real asset, investments.

We tailor each client's portfolio to their unique circumstances and goals. Ultimately, this helps us establish a real estate portfolio with appropriate characteristics to meet these goals and objectives. Characteristics include:

- Current income
- Appreciation potential
- Liquidity (public vs. private real estate)

Wilshire Consulting assists approximately 60 of its consulting clients with their real estate allocations. The scope of our real estate consulting includes:

- Comprehensive review of the client's real estate program
- Asset allocation, portfolio analysis, and portfolio structure addressing diversification of key exposures:
  0. U.S. and non-U.S. regional allocations
  1. Investment styles (e.g. core, value added and opportunistic)
  2. Real estate sectors (e.g. office, industrial, retail, residential and other "non-core" property sectors)
  3. Fund vintage years
- Real estate investment manager / fund searches to include a due diligence report for each recommended investment (approximately three to six fund selections / year)
- Real estate investment fund manager guidelines, objectives and fee negotiations
- Meetings with your organization (as necessary)
- Meetings with real estate investment fund managers (as necessary)
- Access to Wilshire's topical research reports

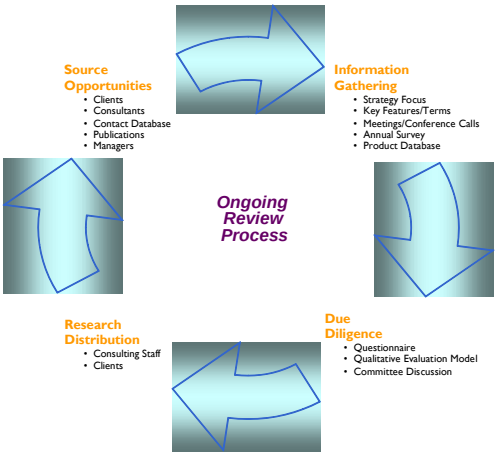
- Participation in Wilshire's annual client conference
- Customized client education

In order to research and evaluate core real estate opportunities, Wilshire has established an asset class committee comprised of four senior consultants and two senior research associates. The real estate committee is responsible for general market research on the asset class and researching and selecting a universe of institutional quality private equity fund of fund managers. These managers must complete a Wilshire RFI and meet with the committee in order to be considered for a search. The committee will then conduct onsite due diligence meetings with every manager that fulfills our evaluation criteria.

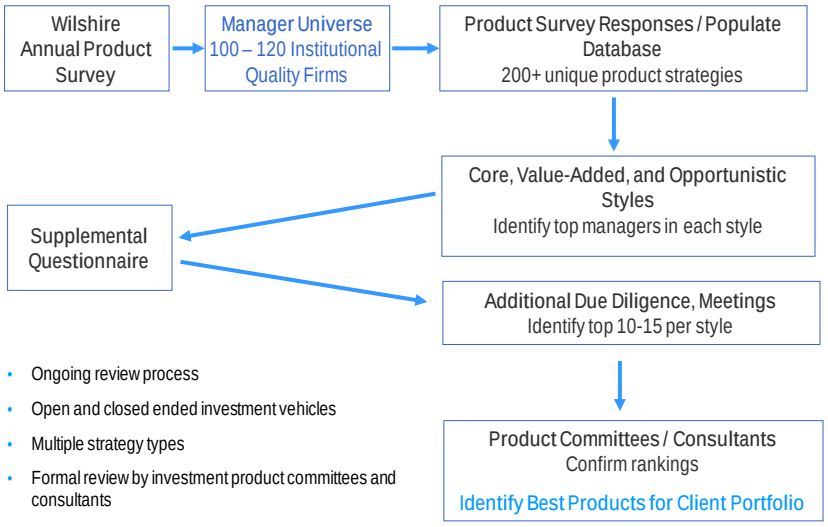
We have one individual primarily responsible for researching and monitoring REIT managers. In addition, this individual receives back-up coverage and assistance from another analyst is Wilshire's manager research group. We also have recently added another individual responsible for researching and monitoring private real estate managers. We believe private real estate can play plays a strategic role in our client real estate programs. Many of our large public fund clients have a combination of private and public market real estate in varying combinations depending upon their portfolio requirements and objectives.

Wilshire's private real estate evaluation and monitoring process is illustrated on the following page.

Investment Review Process

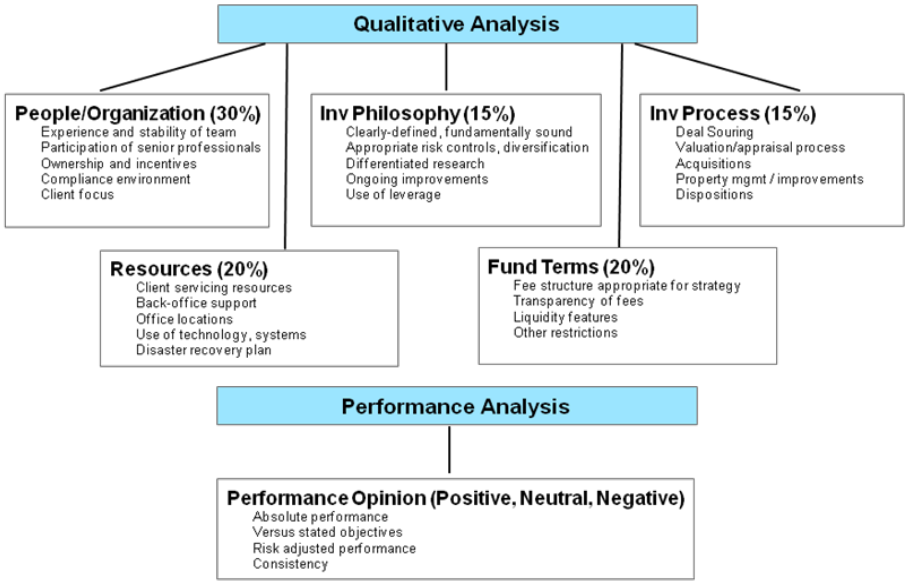


Client Private Real Estate Manager Search Process



- Ongoing review process
- Open and closed ended investment vehicles
- Multiple strategy types
- Formal review by investment product committees and consultants

Manager Scoring Process



*Percentages refer to weighting in evaluation model.

6. Describe the plans for managing the future growth of the firm, including limitations, if any, on the number of clients that the firm intends to accept.

Wilshire's vision is not to be the biggest, but to be the best. Our vision is to continue to solve industry problems. For example, Wilshire created one of the early asset / liability models for pension funds in the 1970s, ten years before actuarial and accounting firms began to duplicate this technology. Additionally we created style-oriented equity indexes in 1988, and developed our equity "style-map" technology to look at style risk exposures within a client's equity portfolio. We have always taken a thought leadership position in the industry.

We develop our vision through our five-year strategic planning cycles. This is a company-wide effort that looks at industry issues, competitive trends, resource needs, capital investment and client feedback. The strategic plan is finalized by Wilshire's Board of Directors. We believe we can be pro-active and flexible because we are independent from both an ownership and financial standpoint. We manage growth on a controlled basis.

Wilshire believes that controlled growth is not only desirable, but preferable for our Consulting business for two important reasons:

- Wilshire completely self-finances its operations and capital investment, thus alleviating the firm from answering to a parent, partner or lending institution that may have different goals than ours. Therefore, reasonable growth allows Wilshire to continue to generate sufficient revenue to invest back into our business on an independent basis.

- Controlled growth provides for career advancement and retention opportunities for our professionals. Our ability to grow allows us to continue to provide the appropriate economic incentives to retain staff. We firmly believe that with how complicated the investment industry is becoming we owe our clients investment professionals with the requisite technical skills to serve them, whether on the front line, or in a research capacity.

Our catalyst for growth is finding qualified people. Managing our consulting practice is a challenging business to recruit personnel or candidates with strong quantitative, investment, communication and leadership skills. Wilshire is diversified to allow for controlled growth. The proof of our business model is that we are one of the few financial services firms to remain wholly independent and self-financing for the last 40 years.

Wilshire Consulting continues to research new investment concepts and to work with clients on implementing new ideas that are sound and well understood. Wilshire also continues to work on the development of new tools to aid Wilshire Consulting in

analyzing investment strategies. As an organization, Wilshire is always seeking ways to improve. In recent years, we have expanded our defined contribution experience and developed the following new tools to plan sponsors: Wilshire TargetPath^{SM}. Wilshire TargetPath^{SM} is intended to provide customized target date retirement fund solutions using the Plan's existing investment options. Wilshire TargetPath^{SM} evaluates each age segments' unique employee base in terms of age, income characteristics and other retirement benefits as part of Wilshire's proprietary Needs-Based Optimization process.

7. If the firm or any affiliate provides services other than investment consulting, please explain briefly what policies or procedures the firm has established to avoid or mitigate any potential conflicts of interest that could arise in providing advice to its pension plan clients.

Wilshire has committed itself to a culture of compliance and ethical business practices since its foundation in 1972. Recognizing that Wilshire operates in multiple areas of the investment industry, Wilshire strives to ensure that its employees understand and operate within this culture.

Wilshire's Chief Compliance Officer administers our compliance policies and procedures, and would be responsible for investigating and dealing with any potential violations of policies or procedures relating to conflicts of interest. The Chief Compliance Officer reports directly to Wilshire's General Counsel and Board of Directors.

Wilshire requires all of its employees to comply with its Compliance Manual, Standards of Business Conduct and Code of Ethics, and any business unit's Code of Ethics. All employees are required to be familiar with all procedures and policies that are applicable to them and are subject to discipline for violations.

It is Wilshire's policy that all recommendations concerning portfolio managers be based solely on the best interests of the client and without regard to any revenue that Wilshire receives, might receive, or has received in the past, directly or indirectly, from portfolio managers. Wilshire operates Wilshire Consulting, Wilshire Funds Management, Wilshire Private Markets, and Wilshire Analytics as separate business units. We have adopted policies and procedures that are designed to prevent consultants from having internal access to information that otherwise might appear to compromise their objectivity. For example, Wilshire's computer systems do not allow employees who work for Wilshire Consulting to have access to the information of Wilshire Funds Management, Wilshire Private Markets, or Wilshire Analytics. Wilshire personnel may sometimes transfer from one business unit to another. It is possible that a transferred employee may continue to perform services for his or her former business unit during a transition period. In these cases, it is Wilshire's policy that the employee not be placed in a position to make or influence manager selections until six months following the transfer. In addition, Wilshire will notify clients from

the employee's former business unit who continue to be serviced by the employee during the transition period. Notwithstanding these policies and procedures, it is possible that Wilshire personnel may become aware of information as a result of disclosure by a client, from public sources or otherwise.

It is also the policy of Wilshire that all material facts concerning any conflicts of interest that do arise are disclosed to our clients. In addition to the conflicts of interest identified in Part 2A of Form ADV, Wilshire has implemented a program for providing a "conflicts check report" to clients.

To ensure that Wilshire's Consulting and Funds Management clients receive timely disclosure about potential conflicts of interest in the form of compensation received by other Wilshire business units, Wilshire has adopted procedures for offering to provide a "conflicts check report." This report provides information about the amount Wilshire bills and has billed managers and custodians for Wilshire services during the current calendar year and the most recently completed calendar year (to the extent that the managers and other vendors have consented to such disclosure). If requested, the conflict checks report will be sent directly to the client from Wilshire's Compliance department and will not be available internally.

If a client requests information from one Wilshire business unit about the products or services of another Wilshire business unit, the business unit receiving the request may arrange for an introduction to the appropriate person at the other business unit but may not market the other business unit's products or services.

Although Wilshire Consulting may provide general asset allocation advice, Wilshire Consulting will not provide any investment advice regarding a client's decision to invest in a product in which Wilshire is the adviser or sub-adviser, such as a Wilshire managed mutual fund, Wilshire hedge fund or funds offered by the Wilshire Private Markets group (each such fund a "Wilshire Fund"), with the exception of the Wilshire Solutions Funds Trust, which is offered by Wilshire Consulting. If a client selects a Wilshire Fund, Wilshire Consulting will not monitor the performance of a client's investment in that fund (although Wilshire Consulting may transmit raw data to the client in the manner in which other raw data is transmitted regarding other funds or managers). When a client requests that Wilshire Consulting identify fund managers, it is Wilshire's policy that the list be based solely on the client's best interests. If a Wilshire Fund could be appropriately included in the Wilshire Consulting list based on such relevant factors as performance, management style, process and personnel, investment strategy, terms and the client's individualized needs then Wilshire Consulting may include, but not recommend, the Wilshire Fund in the listing. Any further information regarding the Wilshire Fund may be provided only by Wilshire's Funds Management or Private Markets business unit(s), as applicable. Furthermore, Wilshire will advise the client in writing, and the client will be asked to acknowledge in writing, that the Wilshire Consulting business unit cannot provide any further advice or

recommendation regarding the Wilshire Fund. Wilshire does not link consulting fees to a client's decision to invest in a Wilshire Fund. In addition, employees of Wilshire Consulting will not be specially compensated based on a consulting client's decision to invest in a Wilshire Fund (although an employee who is also a shareholder may indirectly benefit).

With respect to the Wilshire Solution Funds Trust, Wilshire receives an investment management fee on the total assets invested in the Trust, but does not receive any additional consulting fee from client's with respect to those assets.

8. Explain how the consulting team assigned to this account would function, including lead consultant, back-up, quality control and support services.

As mentioned earlier, your proposed lead consultant, Thomas Toth, has overall responsibility for the management of Wilshire's relationship with the City of Fresno, including any services or recommendations we provide. He will ensure that regular communication is maintained with the City of Fresno and that appropriate resources of Wilshire Consulting are employed. The City of Fresno will be assisted by Andrew Junkin. Andrew, will serve as relationship back-up and work closely with the City of Fresno with respect to consulting services and advice provided to the City of Fresno. Both Tom and Andrew will maintain knowledge of your pension fund and its investments, and are available to assist with day to day communications projects, and meetings.

Backup and Support Services

Wilshire consultants carry cell phones and are in regular communication with their office and clients. Further, Wilshire has established an omnibus email alias: teamam@wilshire.com. The City of Fresno staff or Investment Committee member can email Wilshire and all members of the team assigned to the City of Fresno account. If the lead consultant is traveling, Andrew is his backup. If both Tom and Andrew are traveling, Alex Browning is available. As President of Wilshire Consulting, Julia Bonafede backs-up all senior consultants. Her Biography is provided in the **Appendix**, **Tab 6**. Wilshire recognizes that by providing multiple layers of support, Wilshire can ensure that the City of Fresno will be served.

Quality Control

Quality control is the responsibility of the entire consulting team assigned to each client relationship. The team serves as the focal point for all communication with other individuals at Wilshire which may support a client in order to ensure a consistent, high level of service that best suits the client relationship. All of Wilshire's consulting teams utilize a peer review process. Thus, at least two individuals from the team will review each project, paper, presentation, etc. before it is sent to the client. In addition, all performance reports go through an extensive review process beginning with the

performance analyst. Once a report has been generated, performance supervisors audit the data to ensure a high level of accuracy. The report is then given to the consulting teams, who review the reports and data once again before delivering it to the client. Wilshire produces an enormous volume of work for our clients, and our error rate is quite low. At those times when an error is discovered, Wilshire immediately seeks to correct it in a timely fashion to keep our clients on track.

9. How would you suggest that we measure and evaluate your performance as an investment consultant?

There are three methods that Wilshire currently employs to monitor our service quality and client satisfaction. First, we conduct an annual client survey, which we use to receive feedback on how our clients view the specific aspects of our services. The results of these surveys are carefully reviewed, and we take all measures possible to address any concerns that our clients have articulated.

Secondly, we participate in the annual Greenwich Associates Study. This study is conducted by an outside, independent consultant that canvasses both our clients and our competitors on all aspects of our investment consulting services. The results of this survey are published in an annual report, which is distributed for internal review to investment consulting participants. This study allows Wilshire to understand both how clients perceive our services and how we compare to our peer group. We also use the results of this survey as a guide to develop and implement changes and improvements to our services.

Lastly, Wilshire encourages each of our clients to conduct an annual review of our services with respect to their fund's specific objectives. Clients are encouraged to communicate all comments, problems, or concerns with regard to the quality and / or scope of our investment consulting services to either their consultant or the division head. Frequent client feedback allows us to tailor our services to the specific needs of our clients and, therefore, we welcome all comments and suggestions that our clients communicate.

PART D: ADDITIONAL MATERIALS & DOCUMENTS

In addition to the information requested in the RFP, please submit a copy of the following additional materials and documents:

1. An organization chart of the firm, parent and all subsidiary and affiliated companies.

Please refer to the **Appendix, Tab 7,** for a copy of the firm's organizational chart.

2. Biographies of the firm's professional staff to be assigned to this account.

Please refer to the **Appendix, Tab 2**, for biographies of the firm's professional staff assigned to the City of Fresno Retirement System.

3. A list of the firm's current full service institutional clients, including the year they retained the firm, plan size and type.

Please refer to the **Appendix, Tab 8**, for a representative listing of Wilshire Consulting's full service institutional clients.

4. The latest Annual Report or Statement of Financial Condition.

Please refer to the **Appendix, Tab 9**, for a copy of Wilshire's most recent Statement of Financial Condition.

5. The most recently filed SEC Form ADV, Parts I and II.

Please refer to the **Appendix, Tab 1**, for a Copy of Wilshire's most recent Form ADV, Parts 1, 2A and 2B.

6. A copy of the firm's policies and procedures related to Conflict of Interest.

Please refer to the **Appendix, Tab 10**, for a Copy of Wilshire's Conflict of Interest Policy.

7. A sample of the firm's Quarterly Performance Report, both in executive summary form and in full detail.

Please refer to Appendix, **Under Separate Cover**, for a Copy of Wilshire's Quarterly Performance Report. Please refer to the **Appendix, Tab 11** for a Copy of Wilshire's and Executive Summary.

8. A sample of the firm's due diligence reports on investment managers.

Please refer to the **Appendix, Tab 12**, for a Sample Copy of Wilshire's Due Diligence Report.

9. A sample Investment Policy Statement the firm has developed for a pension plan client.

Please refer to the **Appendix, Tab 13**, for a Sample Investment Policy Report prepared for a pension plan client.

10. Three sample research reports on different investment topics.

Please refer to the **Appendix, Tab 14**, for three (3) sample research reports prepared by Wilshire.

11. A sample presentation on investment education provided to a pension plan client.

Please refer to the **Appendix, Tab 15**, for a sample educational presentation provided to a pension plan client.

12. The firm's standard marketing brochure that describes the firm's products and services.

Please refer to **Appendix, Tab 16**, for a copy of the firm's standard marketing brochure that describes the firm's products and services.

13. Any other information you feel would be necessary to gain a complete understanding of the firm and the services it provides.

None.

Section IV – Fees

The proposed fees shall be guaranteed for the duration of the Contract which shall be a period of five (5) years from the effective date of the Contract. The services listed in Section I of the RFP under "Nature and Scope of Services" should form the basis for the proposed fees. The method of payment will be set forth in the Contract. Once the consultant is selected, the fee may be negotiated further depending on the variance from the other proposals. In no case will the negotiated fee be higher than the fee contained in this Proposal.

A. All-Inclusive, Flat Fees:

Year	Fees
Year 1	$325,000
Year 2	$331,500*
Year 3	$338,200*
Year 4	$344,900*
Year 5	$351,800*
Total Fees (Year 1 to 5)	**$1,691,400**

**assumes a CPI of 2.0%*

Wilshire believes the highest level of general consulting services to clients can best be achieved with long-term relationships where we have an opportunity to fully understand and appreciate the objectives, investment risk tolerance, and decision-making dynamics of our clients. Our experience has verified our belief that full-retainer consulting arrangements are most effective and beneficial for both parties. Therefore, Wilshire's standard fee structure is an annual retainer that includes all of the stated services and many special services that periodically arise. Full-retainer consulting relationships are the most economical way for clients to take advantage of our capabilities and resources.

The consulting services in the full-retainer relationship include:

- Review of current investments
- Asset allocation studies, including asset/liability valuation analysis
- Assistance with development and maintenance of investment policies
- Performance of asset class analysis and structuring
- Assistance in working with investment managers
  - Conducting investment manager searches and making recommendations for any changes, including additions/removals/replacements
    - Public market managers
    - Alpha transfer programs
    - Commingled real estate partnerships in core, value-add, and opportunistic areas
    - Fund of funds private equity
    - Fund of funds hedge funds
  - Investment manager fee negotiation
  - Assistance with custodial and other vendor searches
  - Structuring of objectives and guidelines
  - Participating in investment manager meetings
- Attendance at meetings with the investment committee and /or Board
- Reporting of quarterly performance measurement
- Provision of access to Wilshire's topical research reports
- Participation in Wilshire's annual client conference
- Assistance in the development of customized client education

For the City of Fresno Retirement System, our proposed annual retainer fee is $325.000. This fee is subject to a one year minimum time period and is guaranteed for that time period. Wilshire builds an annual inflation escalator into our retainer fee. Therefore, our annual fee is adjusted each year (on the month-end closest to the contract anniversary) to reflect the change in the prior 12-month level of the Consumer Price Index ("CPI").

Wilshire's annual retainer fee is all inclusive. As a result, there would be no separate non-recurring fees or charges associated with account set-up or transition.

B. Additional Fees or Charges:

Please indicate the fees for any additional services such as, for example, asset/liability studies, custodian searches, alternative investments, etc., that would not be covered in the all-inclusive fees quoted above. The additional fees may be provided as either flat fees or hourly rates per consultant, as appropriate.

None.

C. Additional Information:

Please provide any additional information that may assist us in more clearly understanding your fee proposal:

Wilshire is proposing an increase in the current fee level given the evolution of the Systems' portfolio over the nearly 10 year relationship. Specifically, the recent asset allocation provided for investment in real estate limited partnerships which will require utilizing Wilshire's Private Market's due diligence expertise in evaluating closed end funds.

Wilshire Associates Incorporated	**September 6, 2012**
Name of Firm	Date
Signature **Julia K. Bonafede, CFA**	President of Investment Consulting Title