



Attachment 2

General Pension Board Consulting Scope of Services – (Not applicable for Private Asset Class services):

General Services

1. Review and provide written opinions as an independent fiduciary on reports prepared by CalPERS staff (Staff), as requested by the CalPERS Board of Administration Investment Committee (Board).
2. Provide opinions on matters relevant to the prudent and optimal management of the System as requested by the Board.
3. Identify and create a peer benchmark for the Public Employees' Retirement Fund (Total Fund). The benchmark for the Total Fund will hereafter be referred to as the CalPERS Peer Universe.
4. Identify and create a peer benchmark for each component of the Affiliate Trusts in components where a peer exists. The benchmarks for Affiliate Trusts will hereafter be referred to as the Affiliates Peer Universe.
5. Provide review and analysis for the Total Fund relative to the CalPERS Peer Universe.
6. Provide review and analysis for each component of the Affiliate Trusts relative to the appropriate Affiliates Peer Universe, as requested by the Board.
7. Attend all CalPERS Board of Administration Investment Committee (IC) meetings.
8. Attend CalPERS Board Committees and other sub-committee meetings, as requested by the Board.
9. Provide research, detailed market analysis and trends, and advice on specific Investment topics, as requested by the Board.
10. Inform the Board of any market conditions that arise which could potentially create undue risk to the System and any component of the System.

Asset Allocation

1. Serve as the lead investment consultant in the periodic Asset Liability Management (ALM) review by providing the following services:
 - a. Coordinate with the Board's private-asset consultants to define the market opportunity set and asset classes relevant to CalPERS.
 - b. Coordinate with the Board's private-asset consultants to form an assessment and perspective regarding the benchmarks used for the various asset classes.
 - c. Coordinate with the Board's private-asset consultants to establish capital market assumptions for the opportunity set used in the modeling process.
 - d. Development of estimates and forecasts used in the modeling process.

2. Provide guidance to the board by providing the following services:
 - a. Provide guidance to the Board on the benefits and risk of using a risk factor based asset allocation approach versus a traditional asset class based asset allocation approach,
 - b. Provide guidance to the Board on the issues, costs, benefits and risks of illiquid asset classes versus more liquid asset classes,
 - c. Provide guidance to the Board on the issues, costs, benefits and risks of private versus public asset classes, and knowledge around public market alternatives to private asset classes, and
 - d. Provide guidance to the Board on alternative benchmarks.
 - e. Participate in the presentation and dialog during ALM workshop sessions with the Board, or the designated subcommittee of the Board.
 - f. Provide an opinion on Board decisions relative to ALM, to include whether decisions were based on reasonable estimates and assumptions and developed by processes comporting with best business practices.
 - g. Develop analytic frameworks and communication materials.

Affiliate Trusts

1. Participate in discussions on ALM for the Affiliate Trusts,
2. Review and provide feedback on ALM plan developed by Staff, and review and provide an opinion on Investment Committee agenda items for ALM.

Risk Management

1. Review and provide opinions to the Board on the risk characteristics and the risk profile of the Total Fund, including analysis relative to the CalPERS Peer Universe.
2. Review and provide opinions to the Board on the risk characteristics and the risk profile of each of the Affiliate Trusts, as appropriate, including analysis relative to the appropriate Affiliate Peer Universe.

Performance

1. Review and approve all requests for benchmark replacements and modifications.
2. Review and provide an opinion on the Total Fund Policy Benchmark, as defined in Policy and components of the Total Fund Policy benchmark, as requested by the Board.
3. Review and provide written opinions of custom benchmarks, as requested by the Board.
4. Report on the investment performance of the Total Fund and provide an analysis of CalPERS investment performance compared to CalPERS Peer Universe. The analysis should include recommendations and justifications for recommendations, on any issues in the analysis that would hinder the Board's ability to meet CalPERS long-term investment objectives.
5. Report on the investment performance of the Affiliate Trusts and provide an analysis of CalPERS investment performance compared to the Affiliates Peer Universe. The analysis should include recommendations and justifications for recommendations, on any issues in

the analysis that would hinder the Board's ability to meet CalPERS long-term investment objectives.

6. Prepare a one (1) page annual report on the investment performance for the CalPERS Comprehensive Annual Financial Report (CAFR).
7. Analyze for reasonableness, the benchmarks, measurements and appropriateness of all factors within Staff performance plans, compared to industry peers.
8. Validate year-end, quantitative measurements on Staff performance plans.

Investment Policy Review

1. Monitor and review how Staff is adhering to the Policies.
2. Review, analyze, and provide an independent recommendation on Investment Policies, Investment Policy and Procedures Guidelines (IPPG's), as proposed by Staff, outside advisors, or specialty consultants. The review and recommendation should ensure that the Policies:
 - a. Meet industry standards,
 - b. Are consistent with other Policies,
 - c. Use best practices,
 - d. Align with CalPERS Investment Beliefs,
 - e. Reflect the Board's accepted risk tolerance, and
 - f. Assist the Board in meeting the long-term investment objectives of CalPERS.
3. Provide written recommendations for amendments and/or modifications to any Policy, Including IPPGs related to the policy, and provide detailed justification for recommendations.
4. Prepare and present reports and recommendations for reviewing and updating Policy criteria and objectives which include strategies for public and private asset classes/programs.

External Manager Review

1. Review and provide an opinion on the process used to identify and source external managers, as requested by the Board.
2. Provide advice to the Board on questions or issues that arise in the course of administering the external manager programs on strategic issues related to structure, policy, and benchmarks.
3. Review and opine on investment management fees and related expenses, as requested by the Board.

Investment Office Program Review

1. Benchmark the internal programs against industry standards, best practices, and if applicable, the appropriate component of CalPERS Peer Universe or Affiliates Peer Universe. Provide a written report to the Board.
2. Provide periodic written program reviews, as requested by the Board.
3. Review and provide comment on asset class program reviews and agenda items, as requested. Provide a written report to the Board.

Ongoing Education

1. Provide Board and Staff, as appropriate, with educational sessions including but not limited to:
 - a. Investment topics pertinent to prudently managing the system, and
 - b. Current investment topics and capital market trends.

Private Assets Scope of Services – Private Equity (PE)

General Services

1. Common Duties
 - a) Maintain a total fund perspective when performing the services of this contract.
 - b) Provide input on the PE asset class component of the CalPERS investment portfolio as requested by the Committee.
 - c) Attend the meetings of the Investment Committee, other board committees, sub-committees as requested by the board.
 - d) Research and make recommendations for use of potential and innovative investment strategies and securities.
2. Research and Analysis
 - a) Prepare comprehensive analysis and provide advice on specific Investment issues as requested by the Committee.
 - b) Prepare and present analysis on current issues as they may pertain the CalPERS' investment portfolio.
3. Investment Training
 - a) Provide training to the Committee on investment topics covered under this Agreement.
 - b) Conduct workshops on specific issues designated by the Committee.
4. Additional Duties or Activities

Other duties or activities as may be required consistent with and contemplated by the Foregoing.

Asset Allocation

1. Participate in the periodic Asset Liability Management (ALM) review by providing the following services:
 - a. Support the General Pension Consultant's work to define the market opportunity set and asset classes relevant to CalPERS, provide perspective regarding the benchmark used for PE, and provide perspective on capital market assumptions used in the ALM modeling process.

Risk Management

- a. Review and provide opinions to the Board on the risk characteristics and the risk profile of the PE program, including analysis relative to Peers.

Performance

1. Review and provide written opinions of custom PE benchmarks, as requested by the Board.
2. Report on the investment performance of the PE program and provide an analysis of CalPERS investment performance compared to CalPERS Peer Universe. The analysis should include recommendations and justifications for recommendations, on any issues in the analysis that would hinder the Board's ability to meet CalPERS long-term investment objectives.

3. Analyze for reasonableness, the benchmarks, measurements and appropriateness of all factors within PE program Staff performance plans, compared to industry peers.
4. Validate year-end, quantitative measurements on PE program Staff performance plans.
5. Assist the Committee in establishing appropriate performance benchmarks for PE in the context of the total CalPERS fund.
6. Using the Performance reports produced by the CalPERS Master Custodian, prepare and present a semi-annual evaluation report on the performance of CalPERS' PE program including a comparison with the performance of other peer organizations.
7. Provide CalPERS with semi-annual performance analysis on how the attribution of the PE program versus the Total Fund.
8. Provide CalPERS with semi-annual performance reports of theoretical portfolios, i.e., market indices, benchmarks, and composite total fund portfolio.
9. Present report identified above semi-annually to the Investment Committee of the Board.
10. Advise the CalPERS Compensation Committee investment incentive measures and objectives for the PE team members.

Investment Policy Review

1. Monitor and review how Staff is adhering to the PE program Policy.
2. Review, analyze, and provide an independent recommendation on PE Program Investment Policies, Investment Policy and Procedures Guidelines (IPPG), as proposed by Staff, outside advisors, or specialty consultants. The review and recommendation should ensure that the Policies:
 - a. Meet industry standards,
 - b. Are consistent with other Policies,
 - c. Use best practices,
 - d. Align with CalPERS Investment Beliefs,
 - e. Reflect the Board's accepted risk tolerance, and
 - f. Assist the Board in meeting the long-term investment objectives of CalPERS.
3. Provide written recommendations for amendments and/or modifications to any Policy, Including IPPGs related to the policy, and provide detailed justification for recommendations.
4. Prepare and present reports and recommendations for reviewing and updating Policy criteria and objectives which include strategies for public and private asset classes/programs.

5. Contractor shall provide a review of the CalPERS PE investment policy, portfolio mix/asset allocation, and investment strategy relative to changes in the capital markets.

External Manager Review

1. Review and provide an opinion on the process used to identify and source external managers, as requested by the Board.
2. Provide advice to the Board on questions or issues that arise in the course of administering the external manager programs on strategic issues related to structure, policy, and benchmarks.
3. Review and opine on investment management fees and related expenses, as requested by the Board.

Backup to the General Board Consulting Pension Services

If directed by the Board the contractor shall provide consulting services in connection with the above-noted contract and engagement as follows:

1. Maintain general availability to meet the needs of the CalPERS Board of Administration Investment Committee (Committee) and staff, including but not limited to, attending regular Committee meetings, and meetings with the Committee chair and/or vice-chair to discuss and prepare for Committee meetings.
2. Provide written second opinions to those issued by the general pension consultant as requested by the Committee.
3. Provide Independent analyses and recommendations on asset allocation strategies, Investment policies, Investment Office programs. Industry trends and views, general Investment portfolio management, asset and sector performance and attribution assignments, and Investment risk assessment, or other analyses, as requested by the Committee.
4. Provide other consulting services which may include recommendations, opinions and/or advice on an Issue relevant to the prudent management of the System, as requested by the Board.
5. Prepare for attend and participate in Committee workshops as requested by the Committee for the Asset Allocation and Liability Workshop, assist in the development of assumptions, review and comment on materials, and participate in all pre-meetings.

Private Assets Scope of Services – Real Assets (RA)

General Services

1. Common Duties
 - a) Maintain a total fund perspective when performing the services of this contract.
 - b) Provide input on the PE asset class component of the CalPERS investment portfolio as requested by the Committee.
 - c) Attend the meetings of the Investment Committee, other board committees, sub-committees as requested by the board.
 - d) Research and make recommendations for use of potential and innovative investment strategies and securities.
2. Research and Analysis
 - a) Prepare comprehensive analysis and provide advice on specific Investment issues as requested by the Committee.
 - b) Prepare and present analysis on current issues as they may pertain the CalPERS' investment portfolio.
3. Investment Training
 - a) Provide training to the Committee on investment topics covered under this Agreement.
 - b) Conduct workshops on specific issues designated by the Committee.
4. Additional Duties or Activities
Other duties or activities as may be required consistent with and contemplated by the foregoing.

Asset Allocation

1. Participate in the periodic Asset Liability Management (ALM) review by providing the following services:
 - a. Support the General Pension consultant's work to define the market opportunity set and asset classes relevant to CalPERS, provide perspective regarding the benchmark used for PE, and provide perspective on capital market assumptions used in the ALM modeling process.

Risk Management

1. Review and provide opinions to the Board on the risk characteristics and the risk profile of the RA program, including analysis relative to the Peers.

Performance

1. Review and provide written opinions of custom RA benchmarks, as requested by the Board.
2. Report on the investment performance of the RA program and provide an analysis of CalPERS investment performance compared to CalPERS Peer Universe. The analysis should include recommendations and justifications for recommendations, on any issues

in the analysis that would hinder the Board's ability to meet CalPERS long-term investment objectives.

3. Analyze for reasonableness, the benchmarks, measurements and appropriateness of all factors within RA program Staff performance plans, compared to industry peers.
4. Validate year-end, quantitative measurements on RA program Staff performance plans.
5. Assist the Committee in establishing appropriate performance benchmarks for RA in the context of the total CalPERS fund.
6. Using the Performance reports produced by the CalPERS Master Custodian, prepare and present a semi-annual evaluation report on the performance of CalPERS' RA program including a comparison with the performance of other peer organizations.
7. Provide CalPERS with semi-annual performance analysis on how the attribution of the RA program versus the Total Fund.
8. Provide CalPERS with semi-annual performance reports of theoretical portfolios, i.e., market indices, benchmarks, and composite total fund portfolio.
9. Present report identified above semi-annually to the Investment Committee of the Board.
10. Advise the CalPERS Compensation Committee investment incentive measures and objectives for the RA team members.

Investment Policy Review

1. Monitor and review how Staff is adhering to the RA program Policy.
2. Review, analyze, and provide an independent recommendation on RA Program Investment Policies, Investment Policy and Procedures Guidelines (IPPG), as proposed by Staff, outside advisors, or specialty consultants. The review and recommendation should ensure that the Policies:
 - a. Meet industry standards,
 - b. Are consistent with other Policies,
 - c. Use best practices,
 - d. Align with CalPERS Investment Beliefs,
 - e. Reflect the Board's accepted risk tolerance, and
 - f. Assist the Board in meeting the long-term investment objectives of CalPERS.
3. Provide written recommendations for amendments and/or modifications to any Policy, Including IPPGs related to the policy, and provide detailed justification for recommendations.

4. Prepare and present reports and recommendations for reviewing and updating Policy criteria and objectives which include strategies for public and private asset classes/programs.
5. Contractor shall provide a review of the CalPERS RA investment policy, portfolio mix/asset allocation, and investment strategy relative to changes in the capital markets.

External Manager Review

1. Review and provide an opinion on the process used to identify and source external managers, as requested by the Board.
2. Provide advice to the Board on questions or issues that arise in the course of administering the external manager programs on strategic issues related to structure, policy, and benchmarks.
3. Review and opine on investment management fees and related expenses, as requested by the Board.

Backup to the General Board Consulting Pension Services

If directed by the Board the contractor shall provide consulting services in connection with the above-noted contract and engagement as follows:

1. Maintain general availability to meet the needs of the CalPERS Board of Administration Investment Committee (Committee) and staff, including but not limited to, attending regular Committee meetings, and meetings with the Committee chair and/or vice-chair to discuss and prepare for Committee meetings
2. Provide written second opinions to those issued by the general pension consultant as requested by the Committee.
3. Provide Independent analyses and recommendations on asset allocation strategies, Investment policies, Investment Office programs. Industry trends and views, general Investment portfolio management, asset and sector performance and attribution assignments, and Investment risk assessment, or other analyses, as requested by the Committee.
4. Provide other consulting services which may include recommendations, opinions and/or advice on an Issue relevant to the prudent management of the System, as requested by the Board.
5. Prepare for attend and participate in Committee workshops as requested by the Committee for the Asset Allocation and Liability Workshop, assist in the development of assumptions, review and comment on materials, and participate in all pre-meetings.

Private Assets Scope of Services – Infrastructure Program

General Services

1. Common Duties
 - a) Maintain a total fund perspective when performing the services of this contract.
 - b) Provide input on the PE asset class component of the CalPERS investment portfolio as requested by the Committee.
 - c) Attend the meetings of the Investment Committee, other board committees, sub-committees as requested by the board.
 - d) Research and make recommendations for use of potential and innovative investment strategies and securities.
2. Research and Analysis
 - a) Prepare comprehensive analysis and provide advice on specific Investment issues as requested by the Committee.
 - b) Prepare and present analysis on current issues as they may pertain the CalPERS' investment portfolio.
3. Investment Training
 - a) Provide training to the Committee on investment topics covered under this Agreement.
 - b) Conduct workshops on specific issues designated by the Committee.
4. Additional Duties or Activities
Other duties or activities as may be required consistent with and contemplated by the Foregoing.

Asset Allocation

1. Participate in the periodic Asset Liability Management (ALM) review by providing the following services:
 - a. Support the General Pension Consultant's work to define the market opportunity set and asset classes relevant to CalPERS, provide perspective regarding the benchmark used for PE, and provide perspective on capital market assumptions used in the ALM modeling process

Risk Management

1. Review and provide opinions to the Board on the risk characteristics and the risk profile of the Infrastructure program, including analysis relative to the Peers.

Performance

1. Review and provide written opinions of custom Infrastructure benchmarks, as requested by the Board.
2. Report on the investment performance of the Infrastructure program and provide an analysis of CalPERS investment performance compared to CalPERS Peer Universe. The analysis should include recommendations and justifications for recommendations,

on any issues in the analysis that would hinder the Board's ability to meet CalPERS long-term investment objectives.

3. Analyze for reasonableness, the benchmarks, measurements and appropriateness of all factors within Infrastructure program Staff performance plans, compared to industry peers.
4. Validate year-end, quantitative measurements on Infrastructure program Staff performance plans.
5. Assist the Committee in establishing appropriate performance benchmarks for Infrastructure in the context of the total CalPERS fund.
6. Using the Performance reports produced by the CalPERS Master Custodian, prepare and present a semi-annual evaluation report on the performance of CalPERS' Infrastructure program including a comparison with the performance of other peer organizations.
7. Provide CalPERS with semi-annual performance analysis on how the attribution of the Infrastructure program versus the Total Fund.
8. Provide CalPERS with semi-annual performance reports of theoretical portfolios, i.e., market indices, benchmarks, and composite total fund portfolio.
9. Present report identified above semi-annually to the Investment Committee of the Board.
10. Advise the CalPERS Compensation Committee investment incentive measures and objectives for the Infrastructure team members.

Investment Policy Review

1. Monitor and review how Staff is adhering to the Infrastructure Program Policy.
2. Review, analyze, and provide an independent recommendation on Infrastructure Program Investment Policies, Investment Policy and Procedures Guidelines (IPPG's), as proposed by Staff, outside advisors, or specialty consultants. The review and recommendation should ensure that the Policies:
 - a. Meet industry standards,
 - b. Are consistent with other Policies,
 - c. Use best practices,
 - d. Align with CalPERS Investment Beliefs,
 - e. Reflect the Board's accepted risk tolerance, and
 - f. Assist the Board in meeting the long-term investment objectives of CalPERS.

3. Provide written recommendations for amendments and/or modifications to any Policy, Including IPPGs related to the policy, and provide detailed justification for recommendations.
4. Prepare and present reports and recommendations for reviewing and updating Policy criteria and objectives which include strategies for public and private asset classes/programs.
5. Contractor shall provide a review of the CalPERS Infrastructure investment policy, portfolio mix/asset allocation, and investment strategy relative to changes in the capital markets.

External Manager Review

1. Review and provide an opinion on the process used to identify and source external managers, as requested by the Board.
2. Provide advice to the Board on questions or issues that arise in the course of administering the external manager programs on strategic issues related to structure, policy, and benchmarks.
3. Review and opine on investment management fees and related expenses, as requested by the Board.

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4. Provide other consulting services which may include recommendations, opinions and/or advice on an Issue relevant to the prudent management of the System, as requested by the Board.
5. Prepare for attend and participate in Committee workshops as requested by the Committee for the Asset Allocation and Liability Workshop, assist in the development of assumptions, review and comment on materials, and participate in all pre-meetings.