Las Vegas Chamber of Commerce

FISCAL ANALYSIS BRIEF

VOLUME 1 | ISSUE 3

An Overview and Comparative Analysis of the Nevada Public Employees' Retirement System

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An Overview and Comparative Analysis of the Nevada Public Employees' Retirement System

Hobbs, Ong & Associates and Applied Analysis were retained by the Las Vegas Chamber of Commerce to review and analyze various state and local fiscal issues. Among the questions specifically presented was how Nevada's state and local public employees' retirement systems compare to similar plans in other states. Note that the following discussion is distinguished from that of health care benefits, which are not administered by Nevada Public Employees' Retirement System (PERS) and will be treated in other fiscal briefs.

Nevada PERS is the sole retirement pension system established under state law mandatorily covering the vast majority of state and local government employees. When PERS was established in 1947 by the Nevada Legislature, state and local government employees were not permitted to participate in the Social Security System, and Nevada was one of only a few states without an employee pension plan.[1] As of June 30, 2007, Nevada PERS had 103,693 active employees for whom public employers paid contributions based on total payroll of $4.8 billion.[2] Nevada PERS is administered by a seven-member board appointed by the Governor. The PERS board is charged only with administering the pensions and investing pension funds; pension benefit levels are set by the State Legislature. The Legislative Interim Retirement and Benefits Committee performs an advisory role but does not administer the system.

This fiscal analysis brief outlines our approach to this analysis and the salient findings of our research.

Findings in Summary

Nevada PERS is a long-established system, funded based on actuarial studies and generally considered to be well managed and prudently administered. The defined benefit system required an annual contribution of $1.17 billion[3] in fiscal year 2007 to provide benefits to 35,687 retired workers and set aside funds for 103,693 active employees.[4] Approximately $258 million of this year's contribution represented payment towards the unfunded accrued liability. The unfunded liability portion is the contribution that makes up for insufficient funding levels historically and represents the annual payment required to retire that shortfall over a 30-year period.[5] The total unfunded liability of the system as of the most recent actuarial valuation is approximately $6.3 billion, which

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[1] See, Nevada PERS website history page, (www.nvpers.org).

[2] See, Public Employees' Retirement System of the State of Nevada, *Actuarial Valuation as of June 30, 2007*, published in Nevada in November 2007, page 3.

[3] Id. at 30 – 31.

[4] Id. at 3 – 4.

[5] Id. at 7, 30, and 31.

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includes $4.6 billion for regular members and $1.7 billion for police and fire members.[6]

Although Nevada has a relatively conservative cap on benefits of 75 percent of a retiring employee's three highest consecutive year's salary,[7] the combination of an aggressive annual retirement benefit factor (one of the highest in the nation), favorable policies regarding when employees can retire (there is no minimum age for retirement with 30 years' service) and the relatively low amount employees are required to directly contribute toward their own retirement, all applied to higher-than-average salaries (as shown in Issues 1 and 2 of this series), makes Nevada PERS one of the most generous public employees' retirement systems in the nation. These factors also result in among the nation's highest annual contribution factors, or the percentage of wages and salaries that must be set aside by the employer each year in order to fund the program. The most-recent data indicate Nevada's employer contribution rate of 20.5 percent for regular employees and 33.5 percent for fire and police employees rank as the nation's 2nd and 3rd highest, respectively, among state retirement plans.[8]

It is important to note that in the majority of cases Nevada's employer contributions to PERS are intended to include an equal payment made on behalf of employees in exchange for those employees' salaries being reduced or in lieu of wage increases. Approximately 82 percent of regular employees and 85 percent of police and fire personnel have contributions paid on their behalf by the employer.[9] Although this burden sharing was the clear legislative intent when the employer-pay plan was established in the 1970s, the reality that Nevada's public employees earn higher-than-average salaries (exclusive of any actual or theoretical reduction) and payment escalations have often exceeded the rate of inflation suggest that the line between salaries and benefits is not always clear, particularly for many local government employees and those public employees covered by collective bargaining agreements.

Nevada's plan does not include Social Security participation by and for the state's public employees – one of only seven states that does not. Nevada's public employees, therefore, do not pay into the Social Security fund, nor do they receive Social Security benefits upon retirement. When Social Security contributions are included in the analysis for states in which Social Security is in effect, Nevada's total retirement contributions by both employers and employees falls among the lowest nationally.

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[6] Id. at 6.

[7] Id. at 40. Note the cap on benefits is 90 percent of three highest consecutive year's salary for employees hired prior to July 1, 1985.

[8] Calculations are from data provided by National Association of State Retirement Systems, Public Fund Survey (http://www.publicfundsurvey.org).

[9] See, Public Employees' Retirement System of the State of Nevada, *Actuarial Valuation as of June 30, 2007,* published in Nevada in November 2007, page 13.

Like most public employee retirement systems nationwide, Nevada PERS is not fully funded. Reporting in at only 77 percent funded as of June 30, 2007, Nevada PERS ranks in the bottom third in the nation in terms of funding level.[10] This means that if new state or local employees are not added to the system, there are currently assets adequate to pay 77 percent of existing obligations. The remaining obligation is being amortized over 30 years and is intended to be met with future contributions to the system and/or favorable earnings on investments. Through time, such events as higher-than-expected investment returns or changes in workforce demographics may offer opportunities for reductions in contribution rates. Historically, however, rates have risen.

In 1978, there were 7.0 actively working employees for each pensioner. By 2007, that ratio had fallen to 2.9.[11] As more workers begin to reach the age of retirement, the system's ability to keep pace may be tested, particularly if the state's pace of growth slows. With the cost of funding increasing overall in Nevada and nationwide, the strategy going forward for future Nevada PERS participants is an area worthy of close attention. Importantly, the transition from a defined benefit to a defined contribution system, even for only newly hired employees, would not be without its challenges. That said, it is difficult to conceive a scenario in which the state would be placed in a worse financial position prospectively as a result of such a transition.

The analysis below explores how Nevada PERS currently works, how it compares with similar plans nationwide, and highlights a few of the immediate concerns facing the system.

[10] Nevada PERS' funded ratio of 77 percent ranks near the 69th percentile, or in the bottom third among 125 state and local public retirement plans representing the vast majority of public retirement plans in the nation (these 125 are included in the Public Fund Survey). See, National Association of State Retirement Administrators, Public Fund Survey (http://www.publicfundsurvey.org).

[11] See, Nevada Legislature, *Report to Interim Retirement Committee of the Legislature, Data as of June 30, 2006, Item III-2,* pages 39-46.

Nevada PERS: Key Characteristics and a Comparison to Other States

In this analysis, six fundamental characteristics of public employee retirement systems are reviewed and compared to other states. These include the type of program offered, program eligibility (i.e., vesting criteria), when an employee is eligible to retire and begin collecting benefits, how the retirement benefit is calculated, employee-employer contribution shares, and the amount of benefit paid relative to salary. Our salient findings with regard to each of these elements are summarized below.

Please note in reviewing this information that Nevada's public employee retirement program for "general" or "regular" service employees differs somewhat from that provided to police and firefighters. Where differences exist, they have been noted.

Type of Program Offered

Generally speaking, there are two types of retirement programs (or plans) offered nationally: 1) a defined benefit program and 2) a defined contribution program. A defined benefit plan is one in which an employee receives a monthly amount upon retirement, guaranteed for life or the joint lives of the member and his or her spouse. Defined benefit programs commonly include a cost-of-living increase each year during retirement. Generally speaking, the monthly benefit amount is based upon the participant's wages and length of service. By contrast, a defined contribution system is a retirement savings program under which an employer makes contributions to a participant's retirement account during his or her employment. Benefits inuring to the retiree are based exclusively on the contributions to, and investment earnings of the plan. Benefits in a defined contribution plan cease when the account balance is depleted, regardless of the retiree's age or circumstances. These plans are commonly used in the private sector and include 401(k) and some Individual Retirement Account (IRA) plans.

Nevada PERS is a defined benefit plan, with pension benefits set in state law by the Nevada State Legislature. Depending on years of service and other factors, an eligible survivor (spouse, partner or dependent parent) of a Nevada PERS member may collect benefits until death, or until age 23 if he or she is a surviving child beneficiary attending college.[12] Post-retirement benefit increases, or cost-of-living increases, occur annually three years after retirement, ranging from 2 percent per year from 3 to 6 years after retirement,

[12] See, Public Employees' Retirement System of the State of Nevada, *Actuarial Valuation as of June 30, 2007,* published in Nevada in November 2007, pages 41 - 43.

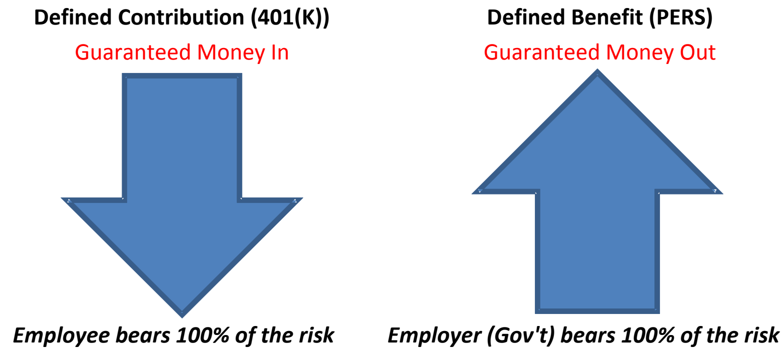
to 5 percent per year compounded following the fourteenth anniversary of retirement.[13] The payroll contribution percentages paid into the retirement system are subject to fluctuation based on actuarial studies performed every two years. These studies are designed to ensure sufficient contributions are made given expected life span of employees, return on invested funds, and other key assumptions.[14] Total contributions to the system were $905 million for general employees and $268 million for police and fire personnel in FY 2007.[15]

Only three states nationwide do not have defined benefit plans as their primary retirement system: Nebraska, Michigan, and Alaska (these states offer defined contribution plans as their primary retirement systems, Nebraska since 1964 and Michigan and Alaska making the switch in 1997 and 2006, respectively, for new employees).[16] There has been little indication that the trend will move in the direction of defined contribution plans for government retirement systems, though several states have begun experimenting with hybrid plans, which are a mix of defined benefit and defined contribution plans.[17] Significant to the decision to convert is the need to either fully fund the defined benefit plan at the time of conversion, or continue to amortize the unfunded liability. Also contributing to the lack of movement toward defined contribution plans in the public sector is the one-time cost of conversion, in addition to political considerations.[18]

[13] Id. at 44.
[14] Id. at 1 - 8.
[15] Id. at 30 - 31.
[16] See, Pew Charitable Trusts, Center on the States Report, *Promises with a Price: Public Sector Retirement Benefits*, (http://www.pewtrusts.org/) , page 33.
[17] Five states in the U.S. now offer some form of a hybrid plan. For example, in Ohio and Washington, employees may choose a combined plan in which employer contributions fund a lower (compared to contributions under only one plan), but guaranteed retirement benefit, while employee contributions are invested separately in a defined contribution plan (source, Pew Charitable Trusts, Center on the States Report, *Promises with a Price: Public Sector Retirement Benefits*, (http://www.pewtrusts.org/), pages 33 - 34).
[18] Id.

Below is a simplified depiction of the difference between the two major retirement plan types.

Defined Contribution vs. Defined Benefit Retirement Plans



Program Eligibility

Commonly referred to as vesting, retirement plan eligibility differs relative to the length of service required for an employee to receive benefits upon retirement. Most retirement plans require employees to satisfy a minimum service requirement, whether in the public or private sector.

Nevada PERS generally requires five years of service for an employee to become eligible for normal retirement benefits. Nevada is fairly typical compared with the average for similar plans nationwide, which is 5.8 years.[19] However, the trend nationwide in public employee pension plan vesting is towards vesting periods of five years or less.[20] Please refer to Exhibit I: *Proportion of Plans with Specified Vesting Periods (Years)*.

Retirement Eligibility

The third fundamental comparison of public employee retirement plans is when an employee is eligible to retire and receive benefits. This is generally determined by some combination of an employee's age and the number of years worked. Early retirement, usually at a minimum age of around 55 and

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[19] Average calculated based on data provided in 2006 Wisconsin Legislative Council Report, see following footnote.

[20] See, Wisconsin Legislative Council, *2006 Comparative Study of Major Public Employee Retirement Systems*, prepared by William Ford, Senior Staff Attorney, published in December 2007 (http://www.legis.state.wi.us/lc), page 16.

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with some degree of reduction in benefits, is typically available to participants in any public employees' retirement plan.

Nevada PERS allows normal retirement (as opposed to early retirement) at any age with 30 years of service for regular employees, and 25 years for police and fire personnel.[21] Regular employees may take normal retirement at age 60 with only 10 years of service, and at age 65 with only 5 years of service. Police and fire personnel may take normal retirement at age 50 with only 20 years of service, age 55 with only 10 years of service, and at age 65 with 5 years of service.[22] For 2007, the average retirement age in Nevada PERS was 60 years for regular employees, and 55 years for police/fire employees.[23]

Across the spectrum of public employee retirement plans nationwide, normal retirement ranges from any age with 20 years of service (as in Massachusetts SERS) to a minimum age of 65 years with varying years of service, which includes such programs as Wisconsin, Arizona, Kansas, and North Dakota. Nevada's normal retirement eligibility requirements are not out of the ordinary but are notable in that there is no minimum age. For example, a police officer in Nevada, beginning his career at age 21, could retire with full pension benefits at age 46. For further detail, refer to Exhibit II: *Earliest Possible Age for Normal Retirement Eligibility (where the plans fall across the spectrum)*.

Nevada PERS notes that participants are eligible for early retirement at any time (with a potential reduction in benefits) for both general employees and police and fire personnel, though the five year vesting period would still apply. All other plans that submitted information to the National Association of State Retirement Administrators (NASRA) require either a minimum age or minimum number of years of service, or both, in order to be eligible for early retirement. A few systems do not allow early retirement under any circumstance.[24]

How Employee Retirement Benefits are Calculated

The fourth comparative element is the amount of the calculated benefit. This is commonly some percentage of wages earned by the employee over some predetermined number of years.

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[21] Nevada PERS allows normal retirement at any age with 30 years of service for general employees; however, due to the increase in the formula multiplier (discussed in subsection *How Employee Retirement Benefits are Calculated*) the number of years of service required for employees hired and/or working after July 1, 2001 to reach full retirement eligibility is as little as 28 years, if over the age of 60.

[22] See, Public Employees' Retirement System of the State of Nevada, *Actuarial Valuation as of June 30, 2007*, published in Nevada in November 2007, page 40.

[23] See, Public Employees' Retirement System of the State of Nevada, *Popular Annual Financial Report Fiscal Year Ended June 30, 2007*, page 15.

[24] See, National Association of State Retirement Administrators, Public Fund Survey (http://www.publicfundsurvey.org).

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Upon meeting normal retirement eligibility requirements, Nevada PERS members may receive a maximum pension of between 75 and 90 percent of their average salary during the three consecutive years during which their earnings were highest. Maximum benefits are 90 percent of final average salary for individuals who became members before July 1, 1985 and 75 percent of final average salary for individuals who became members after June 30, 1985.[25] Retirement benefits are reduced four percent for each year before "service retirement age" in the case of early retirement. If the member has 30 years of service, he may retire at any age; if 10 years of service, his service retirement minimum age is 60; if 5 years of service, his service retirement minimum age is 65. In general, employees are eligible for early retirement (with applicable reductions) at any age as long as they have five years of service.[26] Note, however, that if an employee only has five years of service and is taking early retirement, he would need to be at least 40 years of age in order that his benefits would not be phased out entirely due to the four-percent reduction for each year under service retirement age.

In 2001, the law was changed to increase the "service credit", which is also called the "formula multiplier", from 2.50 percent to 2.67 percent per year of service after 2001, so that the full 75 percent pension level can be reached in about 28 years for those hired after July 1, 2001.[27] In fact, if an individual hired after July 1, 2001 works for longer than 28 years, he would theoretically have earned a pension equal to 80 percent of his final average salary; however, the law currently limits the amount of benefits to 75 percent of final average salary for an individual hired after June 30, 1985. If age 60 or over, an individual may retire once he has reached the 75 percent benefit level, with no reductions, with less than 30 years of service. If under age 60, the individual must keep working until he reaches 30 years of service to avoid a reduction in benefits, even if he has reached the 75 percent benefit level. To his advantage, he will most likely increase his final average salary by working those additional years.

Effectively, this increase in the service credit (or "formula multiplier") served to increase benefits (and decrease service time) for those near retirement who were eligible to reach 90 percent of final average salary, and decrease service time required for those who would reach their maximum at 75 percent at age 60 or older. This change also had the effect of increasing benefits by generally increasing the amount of time a person is eligible to collect a pension. Either way, an increase in the service credit, or formula multiplier, increases the overall cost of the pension program. Please refer to the table below for a depiction of how this concept acts to reduce required years of service from 30

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[25] See, Public Employees' Retirement System of the State of Nevada, *Actuarial Valuation as of June 30, 2007*, published in Nevada in November 2007, page 40. See also *Statues of Nevada 1985 Regular Session,* Chapter 560, e Nevada Legislature, page 1718.

[26] Id.

[27] See, Nevada Revised Statutes 286.551.

to 28 to reach a 75 percent benefit. Note, police and firefighters are eligible to retire at any age with only 25 years service.

1 Final Average Salary (3 highest years)	2 Years of Service	3 Service Credit/Formula Multiplier	1 x 2 x 3 = 4 Calculated Retirement Annuity	4 / 1 = 5 Benefits Paid as Percent of Final Average Salary (assuming no maximum limit)
$50,000/yr	28	2.67%	$37,380	75%[28]

In Nevada, for purposes of calculating the pension, salary earned for work called "overtime" is excluded. This exclusion limits manipulation of the lifetime pension as retirement approaches. However, other forms of extra compensation related to working conditions, scheduling, and length of service such as callback, standby, holiday, shift differential, extra duty, hazard, and longevity pay are included in the base compensation to which the formula multiplier is applied.[29] Such compensation is most prominent in jobs requiring 24-hour coverage such as those in public safety.

Nevada PERS (both general employees and police and fire) applies one of the highest formula multipliers in the nation to its defined benefit annuity calculation. It is interesting to note that the formula multiplier, a concept which is seldom a topic of everyday discussion, is so essential to the overall value of retirement benefits that a fraction of a percent vastly increases or decreases the total retirement payouts for a single individual. An example of this is provided in the *Overall Value of Retirement Benefits* sections below.

Employee-Employer Contribution Shares

In most public employee retirement plans, both the employee and the employer are required to make some contribution toward funding the employee's retirement each year. The simple combination of employee and employer contributions, plus the investment income earned on such contributions, is generally the only source of cash influx into a pension plan.

[28] As mentioned in the paragraphs preceding the table, the 75 percent level would be achievable in 28 years using a 2.67 percent benefit level, but for regular employees, only those age 60 or older may retire in 28 years without a reduction in benefits (those younger than 60 must work the full 30 years to avoid a reduction).

[29] See, Public Employees' Retirement System of the State of Nevada, *Official Policies*, Nevada, January 2002, page 11.

In Nevada, PERS employees do not participate in the Federal Social Security program. As such, no Social Security contributions are made either by the public employer or the employee. Instead, payroll-based contributions are made to a trust fund established by the Nevada Constitution exclusively for PERS. A public employer can elect to pay both the employer and employee shares of the contribution. However, if the employer also pays the employee's share, the employee's salary must be reduced accordingly.[30] This salary reduction is treated in greater detail later in this brief. About 82 percent of all public employees in the system have their entire contributions paid by the employer.[31]

Money in the PERS trust fund is invested under a prudent person standard set forth in statute. Investment in equities and real property is permitted, and the actuarial return on investments for fiscal year 2007 was 9.6 percent,[32] which is higher than the 8.0 percent assumption typically used in the actuarial studies. Although performance of investments has generally been favorable, some question has arisen nationally over whether such assumptions will be realized into the foreseeable future given new market realities.[33]

As mentioned, approximately 82 percent of non-police and fire personnel in Nevada participate in the employer-pay plan, wherein the employer contribution rate is currently 20.5 percent, and the employee contribution rate is 0 percent (in the employer-pay plan, the employer pays the employee contribution on behalf of the employee in exchange for a reduction or offset in salary). The remaining 18 percent participate in an employee/employer pay plan, wherein the employer contributes 10.5 percent, and the employee contributes 10.5 percent. Contribution percentage rates are based on (and applied to) salaries and wages, adjusted for certain overtime and other factors. Note that for the employee/employer plan, total contributions add up to more than 20.5 percent due to the additional guaranteed cost for the refund provisions, which are due to employees participating in the shared plan in the case of early termination.

Of participating Nevada police and fire personnel, approximately 85 percent are enrolled in the employer-pay plan, wherein the employer contribution rate is 33.5 percent, and the employee contribution rate is 0 percent (again, in the employer-pay plan, the employer pays the employee contribution in exchange for a reduction or offset in salary). The remaining 15 percent participate in the

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[30] Nevada Revised Statutes 286.421 states that payment of the employees' portion of the contributions (by the employer) must be made in lieu of equivalent basic salary increases or cost-of-living increases, or both, or, counterbalanced by equivalent reductions in employees' salaries.

[31] See, Public Employees' Retirement System of the State of Nevada, *Actuarial Valuation as of June 30, 2007*, published in Nevada in November 2007, page 13.

[32] Id. at 8.

[33] See, Pew Charitable Trusts, Center on the States Report, *Promises with a Price: Public Sector Retirement Benefits*, (http://www.pewtrusts.org/), pages 3 - 12.

employee/employer pay plan, wherein both the employer and employee contribute 17.25 percent.

According to data collected by NASRA,[34] among similar defined benefit public employees' retirement systems nationwide, Nevada PERS reported the 2nd highest employer contribution rate in the nation for the employer-pay plan for fiscal year 2007 for "regular employees", which generally includes all state and local government employees except police and fire personnel. Among retirement plans nationwide for police and fire personnel, Nevada PERS reported the 3rd highest employer contribution rate in the nation for the employer-pay plan for police and fire employees.[35] Please refer to Exhibits III and IV for further detail regarding employer contribution rates nationwide.

Higher contribution rates to state pension systems are typical of plans that do not include Social Security coverage in addition to a pension, such as Nevada PERS. However, among plans that do not include Social Security coverage, Nevada PERS ranks 1st for regular employees and 2nd for police and fire in terms of employer contribution rate for the employer-pay plan.[36]

Based on data reported by the U.S. Census Bureau, Nevada PERS shows one of the highest ratios in the nation in terms of contribution payments to PERS relative to total salaries and wages for state and local government for the fiscal year ended June 30, 2006, the latest period for which U.S. Census data is available at this time. Taken by itself, this indicator is by no means a complete representation of actual funding; however, it is interesting to note that Nevada ranked 6th highest in the nation in terms of employer contribution receipts (actual dollar payments into the system reported by the U.S. Census Bureau) as a percentage of total salaries and wages, with a calculated percentage of 13.9 percent based on available Census Bureau data. Conversely, Nevada ranked 39th in the nation in terms of employee contribution receipts, also as a percentage of total salaries and wages. Please refer to Exhibits V and VI for further detail on U.S. Census Bureau data regarding employer and employee contribution receipts.

It is also notable that while employees participating in the employer-paid plan directly contribute 0 percent (obviously the lowest reported employee contribution rate in the nation), at 10.5 percent and 17.25 percent for general employees and police and fire, respectively, Nevada PERS reported the highest employee contribution rate in the nation for the smaller percentage of both regular employees and police and fire personnel participating in the employer/employee pay plan. The average employee contribution rate

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[34] See, National Association of State Retirement Systems, Public Fund Survey (http://www.publicfundsurvey.org).

[35] Calculations are from data provided by National Association of State Retirement Systems, Public Fund Survey (http://www.publicfundsurvey.org).

[36] Id.

nationwide is 4.8 percent for general employees, and 7.0 percent for police and fire personnel.[37] As previously noted, the benefit to the employee participating in such a plan is that since the employee has paid his contribution in the form of a payroll deduction as opposed to accepting a lower salary and having the employer pay it on his behalf, that employee is entitled to a refund of his or her after-tax contributions made upon termination of employment.

After layering in Social Security contributions, the majority of employees in other states contribute as much as 6.2 percent of their salary towards their own retirement.[38] Employers who include Social Security coverage also make substantial contributions to the Social Security system. Refer to Exhibit VII: *Constitution of Total Contributions Towards Retirement (PERS and Social Security) for Regular Employees* for a depiction of total contributions towards both public employee retirement systems and Social Security from both employers and employees. Note however that contributions to public employees' retirement systems do not necessarily correlate with the returns from the system; similarly, a contribution to Social Security does not necessarily have the same return as a similar contribution to a public employees' retirement system.

The Overall Value of Retirement Benefits

The sixth and final comparative element is the relative value of the retirement benefit earned. There are two common measures for this, one is the benefit as a percentage of wage and salary payments and the second is the formula multiplier, which determines the amount of the employee's retirement annuity as a percentage of wage and salary payment as well as the amount of service required to reach that percentage.

First, the benefit as a percentage of wage and salary involves two components, the percentage, and the salary. The percentage of salary that a retiree will collect is often determined by the length of service and any caps or limits placed on such percentage by the retirement plan. The speed at which an employee can reach a particular percentage is determined by the benefit factor. The salary itself is just as significant to the final benefit amount collected as the percentage of the salary that one will collect. Contribution rates, which are also represented as a percentage of salary, do not, in and of themselves, provide much insight into the amount of retirement benefits a participant will receive. It is interesting to note that over the last 10 years, the Nevada PERS employer contribution rate for general employees has risen from 18.75 percent to 20.5

[37] Calculations based on data from National Association of State Retirement Administrators, Public Fund Survey, (http://www.publicfundsurvey.org).
[38] See, Federal Social Security Administration website (www.ssa.gov).

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percent, which is an increase of 9.33 percent.[39] However, the larger but less transparent issue is the impact of collective bargaining on total pension cost and resulting benefits. Collectively bargained salaries become the base for calculated pensions. This topic is discussed in greater detail later in this brief, within the section titled *Additional Long-Term Issues to Consider Regarding Nevada PERS.*

Secondly, the benefit factor (also called formula multiplier) is central to the overall value of retirement benefits earned. The formula multiplier is used to determine a participant's actual retirement annuity, or the annual amount they will receive upon retirement, as well as the speed with which an employee can reach a particular percentage of their salary. The larger the formula multiplier, the larger the benefit will be for the retiree (taking into account any caps or limits set by the plan). For the latest available reporting period, Nevada PERS used a formula multiplier of 2.67 percent, which ranked 2nd highest among plans for general employees, and 3rd highest among plans for police and fire personnel.[40] Refer to Exhibit VIII: *Benefit Factors – General State and Local Employees*, for a view of the range of benefit factors currently in use for general employees.

The retirement plans that do not include Social Security frequently have a higher formula multiplier to compensate for the lack of Social Security coverage.[41] An argument may be forwarded that suggests the high employer contributions reported by Nevada PERS are partly due to the fact that Nevada does not include Social Security coverage for public employees. This point has merit as higher pension benefits would be required to compensate for employees not receiving Social Security. Approximately 15 percent of public employee retirement plans do not include Social Security coverage, according to calculations based on NASRA and Wisconsin Legislative Council data. Notably, Nevada PERS reported the highest formula multiplier among plans that do not include Social Security coverage, for both general employees and police and fire personnel. Refer to Exhibit VIII for detail regarding benefit factors in use by plans not including Social Security coverage.

Generally, defined benefit plans calculate a participant's retirement annuity by the following formula, which we saw earlier in this brief when considering the effect of years of service:

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[39] See, Nevada PERS *Comprehensive Annual Financial Report* for the fiscal year ended June 30, 2007.

[40] See, National Association of State Retirement Administrators, Public Fund Survey, (http://www.publicfundsurvey.org).

[41] See, Wisconsin Legislative Council, *2006 Comparative Study of Major Public Employee Retirement Systems*, prepared by William Ford, Senior Staff Attorney, published in December 2007 (http://www.legis.state.wi.us/lc), pages 21 - 22.

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Years of Service x Formula Multiplier x Final Average Salary = Retirement Annuity

To demonstrate the significance of the formula multiplier, the following table (which works similarly to the table appearing earlier in this analysis), shows what an individual would receive from a state or local government employer after 30 years of service if the employee's average salary was $50,000 annually, based on varying formula multipliers (assuming no maximum limits or caps on benefits). Note that this table illustrates higher pensions than those now paid because it is based on a current $50,000 annual salary as opposed to the earlier, lower salaries at which today's PERS recipients retired.

Illustrative effect of the "formula multiplier" on retirement benefits:

	Years of Service	Formula Multiplier	Final Average Salary (3 highest years)	Retirement Annuity (Annual Payout)	Retirement as % of Final Average Salary
NV PERS current multiplier	30	2.67%	$50,000	$40,050	**80%**
NV PERS current multiplier with percent of salary limit for those hired post 6/30/1985; the limit is reached with 28 years of service (as long as age 60+)	28	2.67%	$50,000	$37,380	**75%**
Average multiplier for systems not including SS coverage[42]	30	2.37%	$50,000	$35,550	**71%**
Average multiplier for systems including SS coverage[43]	30	1.86%	$50,000	$27,900	**56%**

As discussed earlier, Nevada PERS currently limits retirement benefits to 75 percent of final average salary for those hired on or after July 1, 1985, thus the 80 percent shown above has no relevance for those participants. Rather, in the table above, years of service would be reduced to compensate for the cap on benefit percentage, leading to a longer payout time (and earlier retirement). In this way, the newer Nevada PERS member would still benefit from the high

[42] Calculation based on data from Public Fund Survey (http://www.publicfundsurvey.org).

[43] Id.

formula multiplier, as long as he is over age 60 when he reaches the cap of 75 percent.

At this point, it is helpful to illustrate the combined effect of salary, benefit factor, and benefit limits on the overall value of retirement. Utilizing average salaries by state for FY 2006 (note that these salaries are significantly higher than the salaries would have been for retirees currently collecting benefits),[44] current benefit factor rules in use by each state (assumed to be the same in the future), and current caps or limits on benefits in place for each state, we may produce an illustration of how these measures combine to affect retirement annuities. Refer to Exhibit IX: *Illustrative Estimation of Annual PERS Retirement Benefit*. Please note, this exhibit is illustrative in nature and is in no way a picture of pension amounts currently being paid to retirees across the nation which are significantly less, mainly due to the fact that current pensions are based on salaries of the last several decades, which were lower than the average salary reported in FY 2006. It should also be noted that for ease of comparability, Exhibit IX is based on 30 years of service at age 60 without early retirement reductions. Actual retirement decisions by individuals may vary significantly as indicated by the fact that for 2007, the average retirement age in Nevada PERS was 60 years for regular employees with an average of 19 years of service, and 55 years for police/fire employees with an average of 22.5 years of service.[45]

Similarly, Exhibit X: *Illustrative Estimation of Annual PERS Retirement Benefit Plus Social Security* layers in the effect of Social Security payments for retirees in states that include Social Security coverage. Importantly, this analysis is provided for illustrative purposes, as it does not reflect possible reductions in either the public employee retirement benefit or Social Security payment that sometimes occur when an individual is due to receive both a pension and Social Security. Therefore, the estimated total retirement benefit may be overstated for states including Social Security coverage for retirement plan participants. Estimated Social Security payments were calculated based on current average salary for each state that includes Social Security, and is based on payment amounts in current dollars, with collection beginning at age 62.[46] Full Social Security benefits are generally not available until age 66 or 67 for the current workforce.[47] Again, the exhibit is illustrative in nature and is not a representative picture of pension amounts currently being paid to retirees, nor

[44] See, Las Vegas Chamber of Commerce, Fiscal Analysis Brief, *State-to-State Comparison of Public Employee Compensation Levels*, Volume I Issue 2. June 2008.

[45] See, Public Employees' Retirement System of the State of Nevada, *Popular Annual Financial Report Fiscal Year Ended June 30, 2007*, page 15.

[46] See, Quick Calculator, Federal Social Security Administration website (www.ssa.gov); using current average salary, hypothetical birth date in 1949, retirement in 2009, and benefits beginning at age 62.

[47] See, Social Security Administration website (www.ssa.gov).

does it reflect the amount that employees themselves paid into these systems. The illustration is intended to provide meaningful insight into the combined effect of salary, current benefit factors, current caps, and current Social Security payment rates on the overall retirement picture on a state-by-state basis. The statement regarding retirement age presented above for Exhibit IX also applies to Exhibit X.

For a comparison of current retirement payments across plans nationwide, refer to Exhibits XI and XII, which depict average monthly retirement benefit payments in fiscal year 2006 for both regular employees and police and fire and include retirees, disability, beneficiaries, and survivors.

Worth restating is that under a defined benefit plan in a public sector context, considerable risk falls on the tax-funded employer to provide for its participants' retirement. The employee participating in a defined benefit plan needs to worry significantly less about how his or her portfolio is holding up under unstable conditions in the financial markets. To the extent the employer is required to contribute to defined benefits, the employer assumes the risk for the guaranteed pension amount for its employees.

This is a heavy responsibility to bear on the part of the state, not to mention the potential risk to taxpayers and other state and local programs. Large underfunded long-term liabilities put future budgets at risk, potentially affecting state funding for education and health care.[48] The option to move to a hybrid defined benefit/defined contribution plan; the role and level of employee contributions versus employer contributions; whether to include (and pay for) Social Security coverage, keeping in mind both employers and employees would be required to contribute; retirement age and required years of service; the benefit factor utilized; and the base salary used all clearly play out as significant points on which any analysis of the system going forward should focus attention. Additionally, when taken together, these elements also make Nevada PERS among the nation's most favorable public employee retirement systems.

Additional Long-term Issues to Consider Regarding Nevada PERS

As discussed above, as of June 30, 2007 PERS had 103,693 active employees for whom public employers paid contributions based on total payroll of $4.8 billion. At the same time, PERS was paying pension benefits to 35,687 retirees. In 1978, there were 7.0 actively working employees for each

[48] See, Pew Charitable Trusts, Center on the States Report, *Promises with a Price: Public Sector Retirement Benefits*, (http://www.pewtrusts.org), page 19.

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pensioner. In 2007, that ratio fell to 2.9 to 1.[49] On a percentage basis, the workforce is growing much slower than the number of retirees. The net assets of the system have a market value of $22.7 billion.[50] The unfunded liability of the system is $4.6 billion for regular members and $1.7 billion for police and fire members.[51] The "funded ratio" or estimated percentage of earned future benefits that could be paid with existing assets is 77 percent.[52] This means that if new state or local employees are not added to the system, there are currently assets adequate to pay 77 percent of existing obligations. The funded ratio for Nevada PERS has fluctuated from as low as 66 percent in 1990 to as high as almost 85 percent in 2000.[53]

The total actuarial accrued liability represents the amount that would have been accumulated as of the valuation date if contributions sufficient to meet the normal costs of the retirement system had been made each year in the past.[54] For the year ended June 30, 2007, over a fifth of the 20.5 percent of salary contribution for general employees represented payment towards the unfunded actuarial accrued liability.[55] More precisely, an amount equal to 4.5 percent of each employee's salary was contributed towards the amortization of the unfunded accrued liability. For police and fire personnel, 7.4 percent of each employee's salary was contributed towards the amortization of the unfunded accrued liability.[56] This 7.4 percent also represented over a fifth of the total contribution percentage for police and fire personnel of 33.5 percent. Total contributions to the system were $905 million for general employees and $268 million for police and fire personnel in fiscal year 2007, for a total of $1.17 billion.[57] Therefore, approximately $199 million of the general employee contribution and approximately $59 million of the police and fire contribution represented payment towards the unfunded actuarial accrued liability, for a total of $258 million for fiscal year 2007.

In order to avoid radical changes in contribution rates from year to year due to fluctuations in investment returns, PERS amortizes each year's change in unfunded accrued actuarial liability over 30 years so that, for example the 2006, 2005, and 2004 changes have 29, 28, and 27 years left on their

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[49] See, Nevada Legislature, *Report to Interim Retirement Committee of the Legislature, Data as of June 30, 2006, Item III-2,* pages 39-46.

[50] See, Public Employees' Retirement System of the State of Nevada, *Actuarial Valuation as of June 30, 2007*, published in Nevada in November 2007, page 4.

[51] Id. at 6.

[52] Id. at 35.

[53] See, Public Employees' Retirement System of the State of Nevada, *Popular Annual Financial Report Fiscal Year Ended June 30, 2007,* page 11.

[54] See, Public Employees' Retirement System of the State of Nevada, *Actuarial Valuation as of June 30, 2007*, published in Nevada in November 2007, page 5.

[55] Id. at 7.

[56] Id.

[57] Id. at 30 – 31.

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respective amortization schedules. In this fashion, the liability is "managed", and under this method, the average length of payment for the total unfunded liability is about 27.5 years for both regular and police/fire employees.[58]

The financial stability of pension systems is always an issue worthy of close attention. Nevada PERS is a long-established system funded based on regular actuarial studies and monitored for funded ratio and unfunded liability. The contribution levels are higher than the combined employer and employee shares for Social Security because the benefits are higher. The system is generally considered well managed and prudently administered. Nonetheless, there are features of the system that may warrant examination. These include, but are not limited to, the following:

- *Defined benefit structure* – The fact that the benefits are fixed in law and the contribution rates must be actuarially aligned with the benefits on an ongoing basis effectively eliminate all financial exposure for employees and retirees and places risk on the tax-supported public employer. Since fiscal year 1997-98, rates for regular employer-paid members have increased from 18.75 percent to 20.5 percent and for police and fire employer-paid members from 28.5 percent to 33.5 percent.[59] Benefits have not been reduced. Rather automatic postretirement pension increases were enacted in 1997, and the service credit (or benefit multiplier) per year of employment was increased from 2.5 percent to 2.67 percent in 2001.[60] Such benefit increases typically occur when actuarial studies indicate the possibility of contribution rate reductions due to higher-than-anticipated investment returns or other favorable change in actuarial data. At such times the policy choices include reducing the contribution rate, reducing unfunded liability, or increasing benefits. Post-retirement increases, which are changed in law from time to time and currently allow an increase in the benefit paid to a retiree after he has been retired for three full years, and service credit change are examples of the latter. In this fashion, costs have gone up to maintain and enhance benefit levels for existing and new employees.

  Nevada's circumstance is not unique. Only three states do not have defined benefit plans as their primary pension system, and in the past decade there has been very little movement by states toward defined contribution plans.[61]

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[58] Id. at 6.

[59] See, Nevada Legislature. *Legislative Appropriations Reports, Sections on Public Employees Retirement System*. Nevada, 1993 – 2007 and Nevada PERS *Comprehensive Annual Financial Report* for the year ended June 30, 2007.

[60] See, Nevada Legislative Counsel Bureau Fiscal Division, Legislative Appropriations Report. Nevada, 1997, page 272, and Nevada Revised Statutes 286.551.

[61] See, United States Governmental Accountability Office. *State and Local Government Retiree Benefits,* Washington, DC, September 2007, page 9.

Partial or total conversion of the current defined benefit structure with a defined contribution approach is favored by some as a means of shifting risk to the employee as opposed to assigning more risk to the tax-supported employer as is now the case in Nevada. Any transition, however, would not be without its challenges. That said, it is difficult to conceive a scenario in which the state would be placed in a worse financial position prospectively as a result of such a change.

- *Payment of full, unreduced pension at any age* – The current "thirty and out" provision under which an employee can retire and immediately begin drawing a pension of 75 percent of the base compensation enables some to retire under those conditions before age 50. Therefore, the number of years during which the pension is paid can be twelve or more years greater than for Social Security. While funding of the system is considered actuarially sound, the fact that PERS pensions are paid over a longer period in higher amounts (the current average payment is now over $2,200 a month[62]) than Social Security (the national average is about $1,000 a month for retired workers[63]) generates higher payroll costs. This circumstance, combined with the defined benefit structure under which the benefit is fixed and the contribution percentage has floated upward over time and the fact the number of retirees is growing faster than the workforce, has been, and remains, cause for concern.

- *Treatment of the "employee" contribution in a collective bargaining context* – Nevada PERS accounts for all contributions to the system in a manner reflecting compliance with NRS 286.410, requiring matching contributions from the employer and employee. As mentioned previously, Nevada law also provides that if the public employer pays the employee's contribution on the employee's behalf, such payment must be made in lieu of salary increases or counterbalanced by equivalent reductions in salary.[64] If a PERS rate adjustment or conversion of an employee from shared plan to employer-paid takes place at a time when no salary increase is being awarded, the required transaction is a salary reduction for the employee in the amount needed for the employer to pay the employee contribution on his behalf. Since the salary reduction does not exceed the amount the employee was contributing on his own behalf and since his reduced salary reduces his income tax burden, the employee typically receives a slight benefit in take-home pay and the employer's cost does not increase since the employee conceded the amount needed to allow the employer to pay

[62] See, Public Employees' Retirement System of the State of Nevada, History (http://www.nvpers.org/public/aboutus/history.jsp).
[63] See, Social Security Administration website, (http://www.ssa.gov/policy/docs/quickfacts/stat_snapshot/)
[64] Nevada Revised Statutes 286.421

the employee contribution. Nevada's state employees do not collectively bargain. The state maintains two separate salary schedules – one for its employer-pay personnel and one for those under the employer/employee payment plan, the former being 10.25 percent less at each pay grade than the latter, reflecting the salary reduction enabling the state to pay the employee's contribution on his behalf. For state employees, the employer/employee cost sharing is clear because state employees on the employer-pay plan have lower salaries than those on the shared contribution plan.

However, in the collectively bargained environment in which local governments are required to function, the relationship is not always as clear, especially if a PERS rate adjustment or conversion of an employee from shared plan to employer-pay takes place at the same time a salary increase is being awarded. Once an employer has adopted the employer-pay plan, future adjustments to the PERS contribution rate, generally upward, are small enough that they can lose their identity in collective bargaining.

For example, if the cost of living rises three percent and the retirement contribution rate rises one percent, an employer might logically agree to a three-percent cost–of-living adjustment (COLA) and must pay half the increase in the retirement rate or ½ percent with the employee paying the remaining ½ percent. The employee's raise net of the retirement contribution would therefore be 2½ percent. In collective bargaining negotiations the employer will reportedly be pressed to "keep whole" the employees' COLA by conceding an additional ½ percent, effectively shifting the entire cost of the rate increase to the employer. Such salary adjustments can act to further shift risk for change in investment returns to the employer despite the fact the statute appears to contemplate shared risk. Evidence of such practice is notably anecdotal, but nonetheless worthy of additional exploration given that salary adjustments have frequently exceeded traditional measures of inflation.

Although some might expect that Nevada's statutory requirement for cost sharing by employees by salary reduction or offset against salary increases would result in Nevada's public employee salaries falling near mid-range or lower among those reported for all states, such is not the case. Nevada's state employee salaries were 2.4 percent higher than those in other states in 2006, and Nevada's local government salaries were 15.6 percent higher than local government salaries nationwide (31 percent higher when teachers' salaries are removed).[65] Nevada law requires collective bargaining

[65] U.S. Census Bureau, Census of Governments, Annual Public Employment Survey (2007). Analysis reports 2006 payroll figures.

for local governments but does not permit bargaining for the state employees. Since 77.4 percent of Nevada public employees worked in local government in 2006, it could be inferred that the required collective bargaining process has over time allowed local government salaries to increase to the extent that the required employee cost sharing for PERS is more than offset by salary levels above national norms. There are few boundaries on the settlements possible in collective bargaining under NRS 288, and there is no requirement for detailed public disclosure of the components of such settlements or the rationale therefore.

Methodology

This analysis is based on data obtained from several sources. Employer and employee contribution data, retirement eligibility provisions, and Social Security eligibility data was obtained from the Public Fund Survey, an online compendium of key characteristics of public retirement systems representing 85 percent of the nation's retirement system community. The Public Fund Survey is sponsored by the National Association of State Retirement Administrators and the National Council on Teacher Retirement and is maintained on a fiscal year basis, based on the latest available data.[66]

Vesting data, formula multiplier data, and additional Social Security eligibility data was obtained from the Wisconsin Legislative Council's biennial report on public employee retirement systems, the most recent being the "2006 Comparative Study of Major Public Employee Retirement Systems", which was prepared by William Ford, Senior Staff Attorney with the Wisconsin Legislative Council, and published in December 2007.[67]

Total salaries and wages data was obtained from the U.S. Census Bureau, Census of Governments, Annual Public Employment Survey.[68] The annual survey, which began in 1957, is designed to provide current estimates of state and local government employment and payrolls.[69] The data reported and analyzed in this fiscal briefing are as of 2006 and were published by the U.S. Census Bureau in 2007. They are the most current data available at the time this analysis was undertaken.

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[66] See, National Association of State Retirement Systems, Public Fund Survey (http://www.publicfundsurvey.org).

[67] Wisconsin Legislative Council, *2006 Comparative Study of Major Public Employee Retirement Systems*, prepared by William Ford, Senior Staff Attorney, published in December 2007 (http://www.legis.state.wi.us/lc).

[68] *See,* U.S. Census Bureau, Census of Governments (http://www.census.gov/govs/www/).

[69] The United States Code, Title 13, authorizes the survey and provides for voluntary responses.

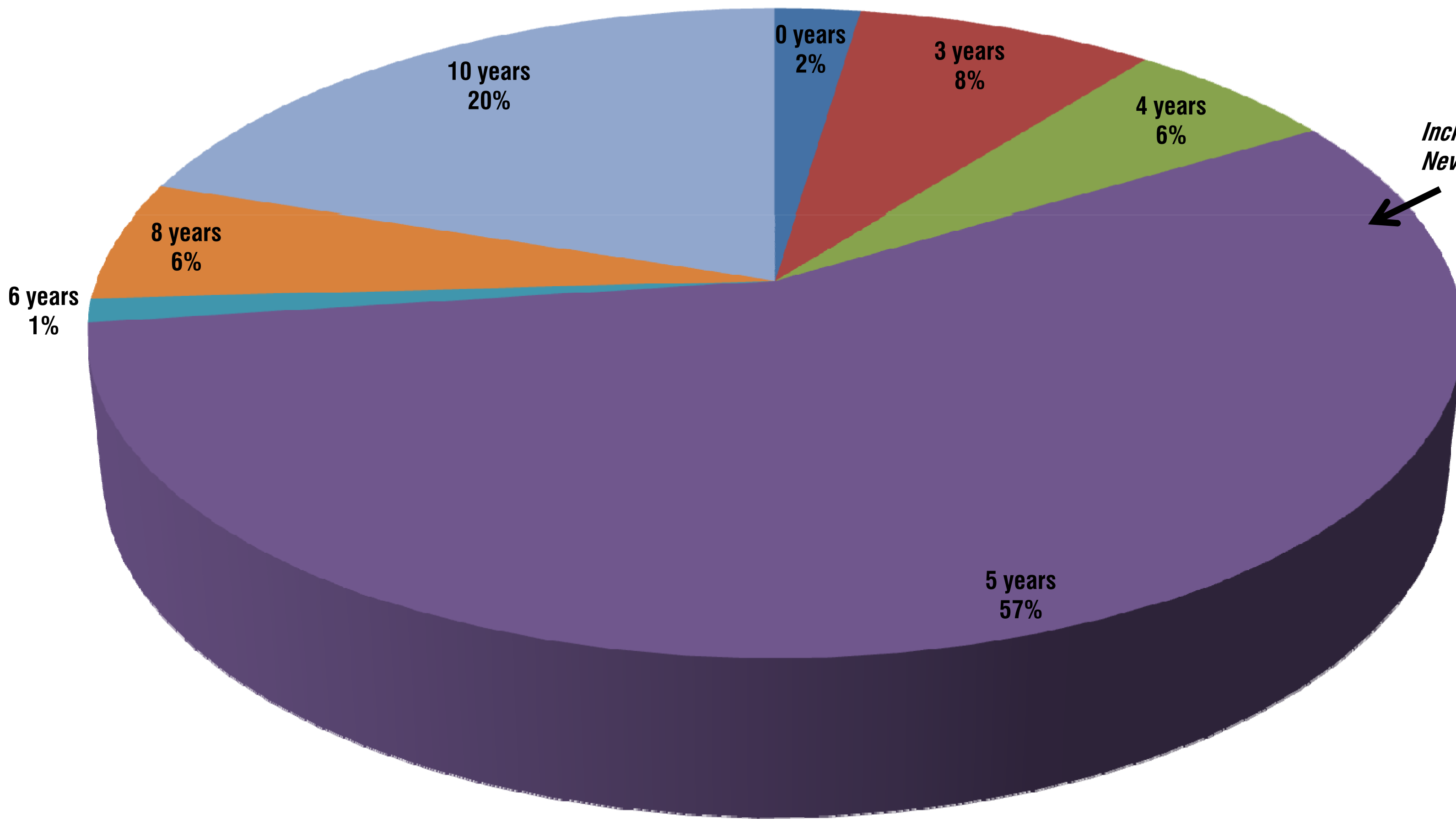
Analysis Limitations

As with any analysis, there are important limitations that must be considered when drawing conclusion from the data utilized. Primary among these are comparability and completeness issues. In making comparisons nationwide, in particular, it is essential to note that no two retirement plans are completely alike in terms of assumptions, participants, provisions, benefits, funded status, and other characteristics. Therefore, this analysis simply compares a few of the plan measurements that may be quantified.

Additionally, reported data are not always complete. The Public Fund Survey boasts coverage of 85 percent of the nation's public retirement systems, which includes the vast majority of major plans, but it is not a census. The U.S. Census Bureau applies appropriate statistical methods to impute for missing data; however, these limitations warrant additional caution particularly when undertaking segmented analyses.

It is also important to note that this is a single analysis addressing a single issue. It is not intended to be comprehensive nor are the underlying data appropriate for all purposes.

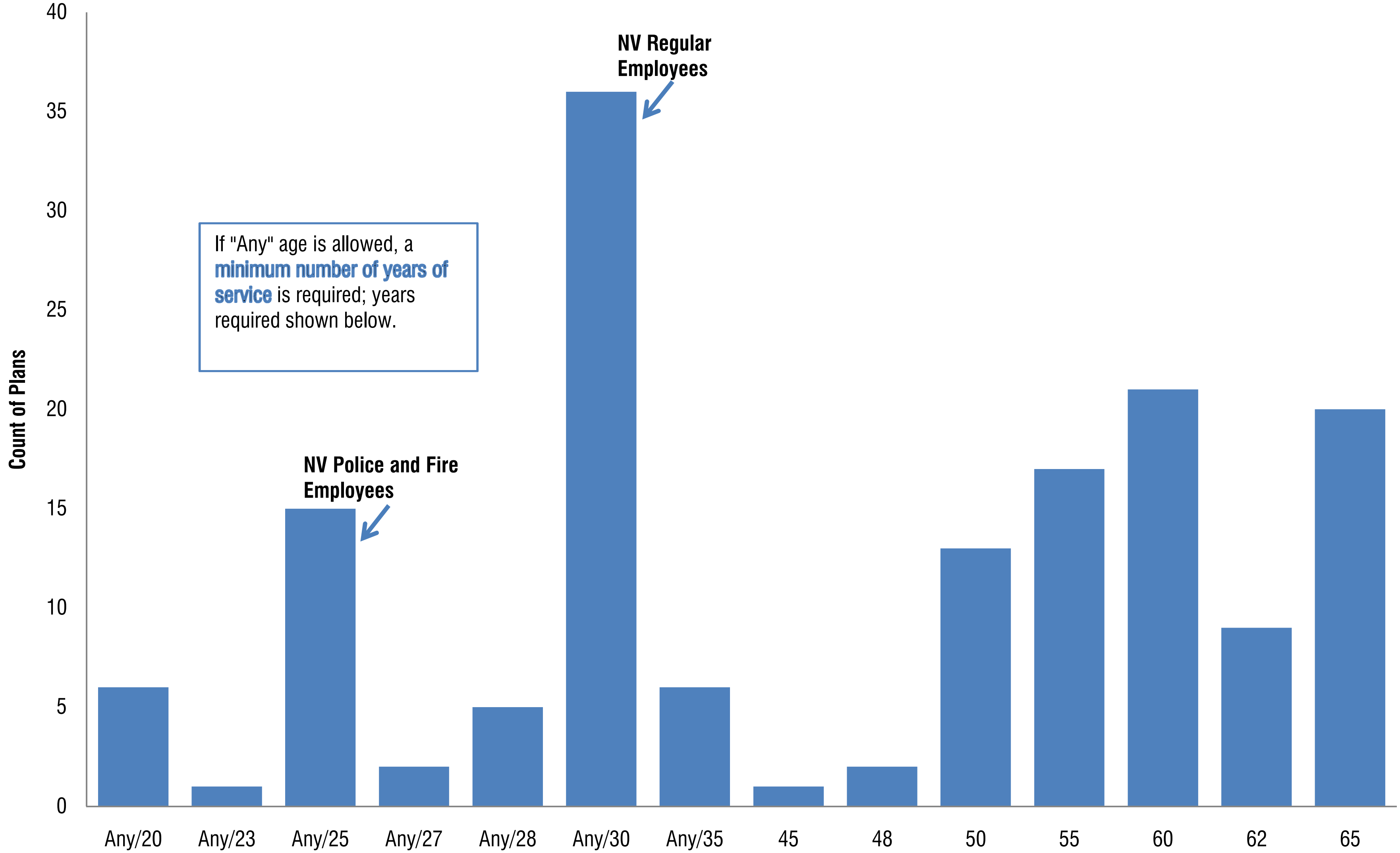
Exhibit I: Proportion of Plans with Specified Vesting Periods (Years)



Source: Based on 85 Plans (General and Police/Fire) analyzed in 2006 Wisconsin Legislative Council Report, published 12/2007, www.legis.state.wi.us/lc.

**Prepared by:
Applied Analysis and
Hobbs, Ong Associates**

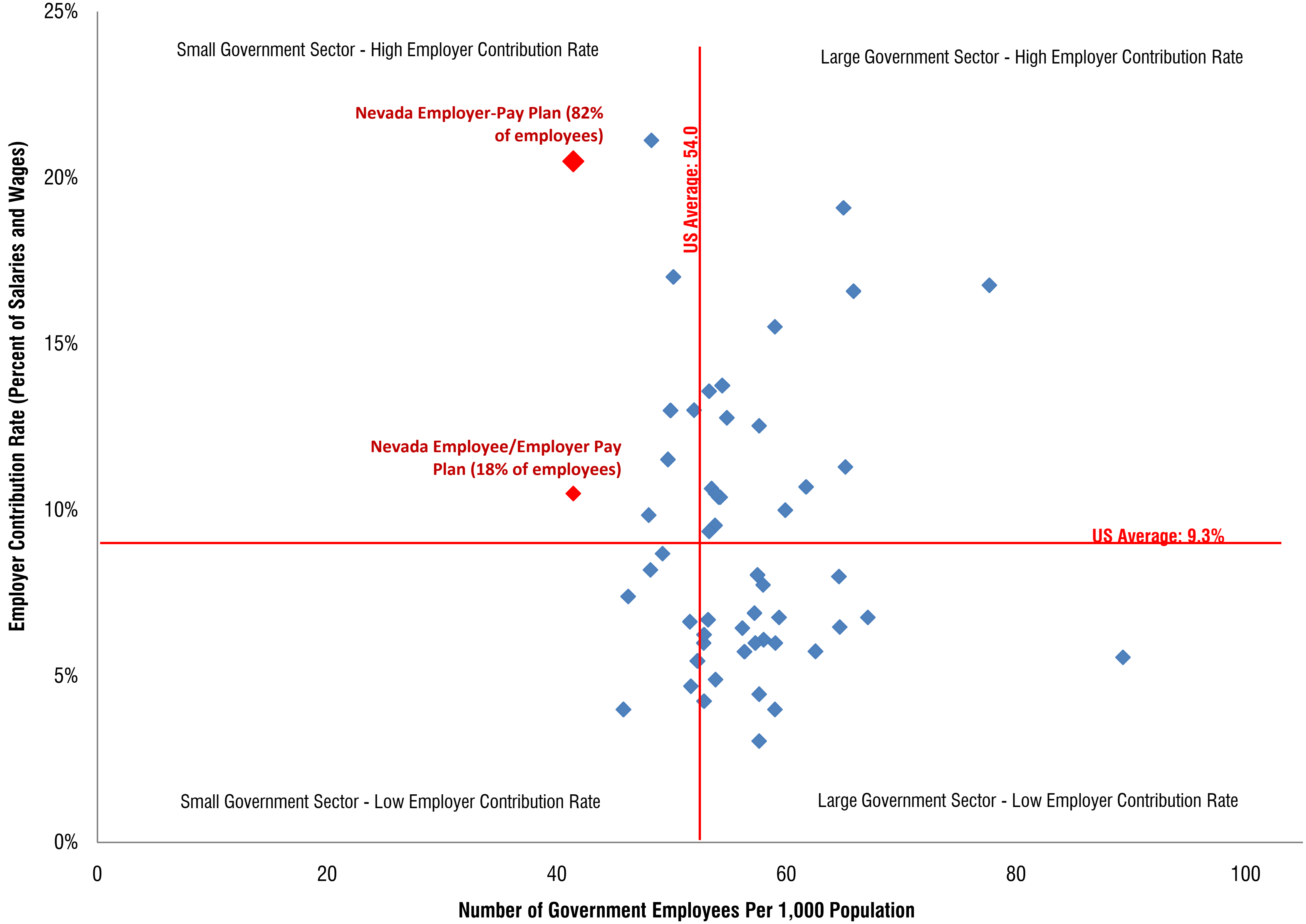
Exhibit II: Earliest Possible Age for Normal Retirement
(where the plans fall across the spectrum)



Source: Based on data from NASRA's Public Fund Survey (data as of 6/30/2007); data includes all public retirement plans for which data was submitted to NASRA.

Prepared by:
Applied Analysis and
Hobbs, Ong Associates

Exhibit III: Employer (Government) Contribution Rate - General State and Local Employees



Source: Based on data from NASRA's Public Fund Survey (data as of 6/30/2007)

Prepared by:
Applied Analysis and
Hobbs, Ong Associates

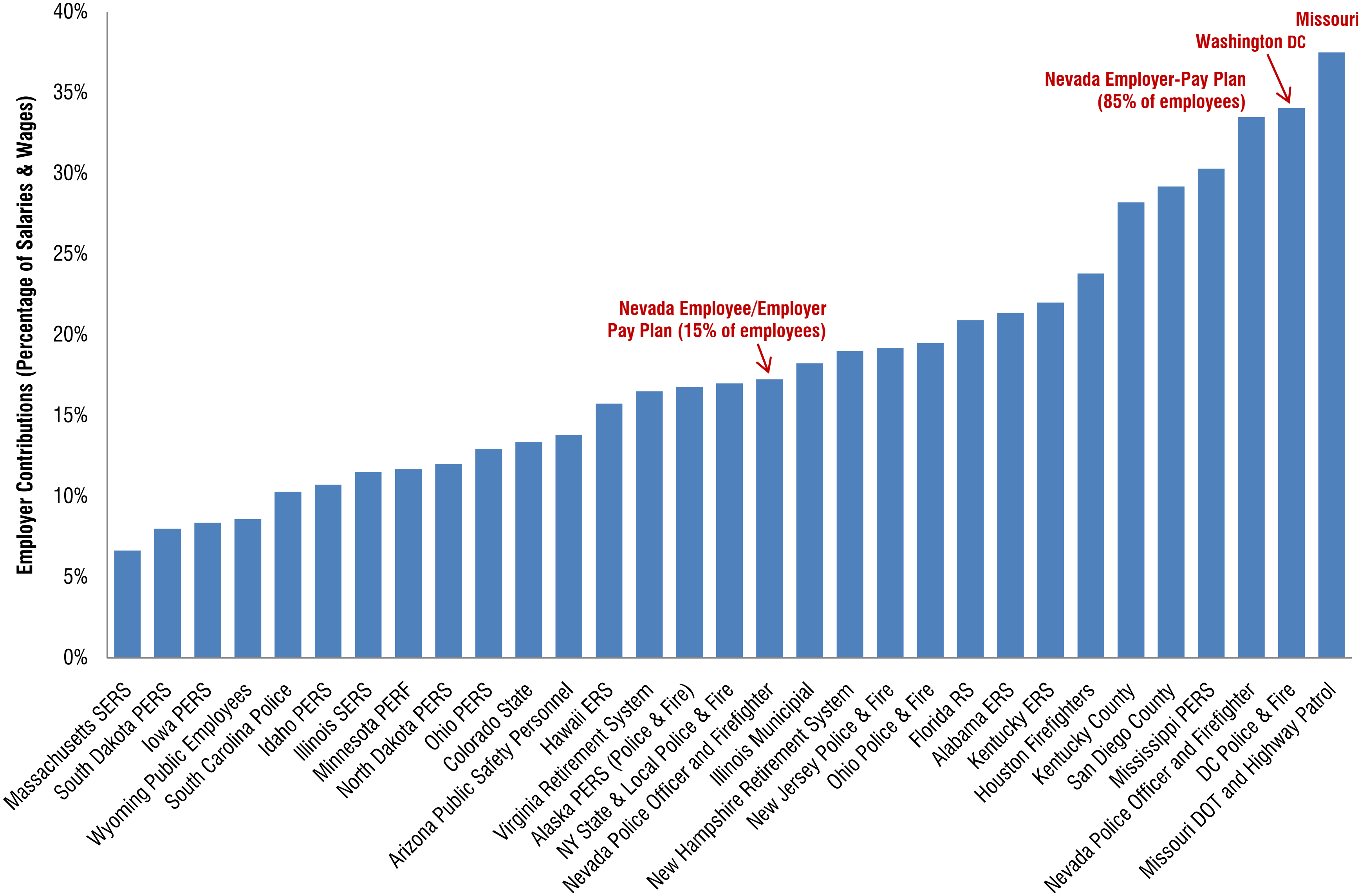
Exhibit IIIA: Comparative Analysis of Public Employee Retirement Plans For Regular Employees as of June 30, 2007

Plan Name	State	Employer Contribution Rate	RANK: Employer Contributions	Employee Contribution Rate	RANK: Employee Contributions	Social Security Eligible?	Overall Plan Type	Benefit Factor/Formula Multiplier
Alaska PERS	AK	16.8%	5	6.8%	14	Yes	DB	2% for first 10 years, 2.25% for years 11-20; 2.5% for years thereafter.
Alabama ERS	AL	6.8%	35	5.0%	29	Yes	DB	2%
Arkansas PERS	AR	12.5%	14	5.0%	29	Yes	DB	1.72% for non-contributor members, who are those hired before 7/1/05; 2.0% for contributory members, who were hired after 6/30/05
Arizona SRS	AZ	7.4%	33	7.4%	11	Yes	DB	2.1% for first 20 years, 2.15% for 20 to 25 years, 2.2% for 25 to 30 years, and 2.3% for 30 or more years
California PERF	CA	17.0%	4	5.0%	29	Yes	DB	2.0% at 60/5, rising to 2.418% at 63/5; employers may select from a range of benefit structures, including 3.0% at 50 and 55 for law enforcement personnel
Colorado State	CO	10.7%	19	8.0%	6	No	DB	2.5%
Connecticut SERS	CT	4.9%	52	0.0%	49	Yes	DB	1.33% plus 0.5% for salary above Social Security breakpoint (approx. $36,400 in 2003); 2.5% for public safety personnel
Delaware State Employees	DE	6.1%	42	3.0%	44	Yes	DB	1.85%
Florida RS	FL	9.9%	25	0.0%	49	Yes	DB	1.60% for most general employees and teachers
Georgia ERS	GA	10.4%	22	1.3%	48	Yes	DB	2%
Hawaii ERS	HI	13.8%	8	0.0%	49	Yes	DB	2%
Hawaii ERS	HI	13.8%	8	6.0%	20	Yes	Hybrid	2%
Iowa PERS	IA	5.8%	46	3.7%	42	Yes	DB	2%
Idaho PERS	ID	10.4%	22	6.2%	18	Yes	DB	2%
Illinois SERS	IL	11.5%	15	4.0%	40	Yes	DB	1.67%
Illinois SERS	IL	11.5%	15	8.0%	6	No	DB	2.2% for those not covered by Social Security
Indiana PERF	IN	6.0%	43	3.0%	44	Yes	Hybrid	1.1% plus a DC component
Kansas PERS	KS	6.8%	35	4.0%	40	Yes	DB	1.75%
Kentucky ERS	KY	7.8%	32	5.0%	29	Yes	DB	Non-hazardous:1.97% to 2.2%
Louisiana SERS	LA	19.1%	3	7.5%	9	No	DB	2.5%
Massachusetts SERS	MA	6.6%	38	9.0%	3	No	DB	2.5%; benefit may not exceed 80% of FAS
Maryland PERS	MD	13.0%	11	2.0%	47	Yes	DB	Larger of: 1) 1.2% of FAS for service prior to 6/30/98; 2) 0.8% FAS up to SSIL* plus 1.5% FAS above that level for service prior to 6/30/98; 3) 1.4% FAS after 6/30/98.
Maine State and Teacher	ME	15.5%	7	7.7%	8	No	DB	2%
Maine Local	ME	4.0%	56	5.0%	29	Yes	DB	2%
Michigan SERS	MI	8.2%	29	0.0%	49	Yes	DB	1.5%
Minnesota PERF	MN	6.3%	41	5.8%	26	Yes	DB	1.7%
Minnesota State Employees	MN	4.3%	55	4.3%	39	Yes	DB	1.7%
Missouri State Employees	MO	12.8%	13	0.0%	49	Yes	DB	1.7% for MSEP 2000; 1.6% for MSEP
Mississippi PERS	MS	11.3%	17	7.3%	12	Yes	DB	2.0% for the first 25 years and 2.5% for each year thereafter
Montana PERS	MT	6.9%	34	6.9%	13	Yes	DB	1.785%; 2.0% for members with 25 years of service
North Carolina Local Government	NC	4.5%	54	6.0%	20	Yes	DB	1.85%
North Carolina Teachers and State Employees	NC	3.1%	58	6.0%	20	Yes	DB	1.82%
North Dakota PERS	ND	8.0%	31	0.0%	49	Yes	DB	2%
New Hampshire Retirement System	NH	6.7%	37	6.3%	16	Yes	DB	1.67% for general employees and teachers prior to age 65, 1.5% after attaining age 65
New Jersey PERS	NJ	6.0%	43	5.0%	29	Yes	DB	1/55 for each year of service (1.818%)
New Mexico PERF	NM	16.6%	6	7.4%	10	Yes	DB	3.0% for service after 12/96
Nevada Regular Employees	NV	20.5%	2	0.0%	49	No	DB	2.5% for svc earned before 7/1/01 and 2.67% for svc earned thereafter
Nevada Regular Employees	NV	10.5%	20	10.5%	1	No	DB	2.5% for svc earned before 7/1/01 and 2.67% for svc earned thereafter
NY State & Local ERS	NY	10.7%	18	3.0%	44	Yes	DB	1.67% if service is less than 20 years, 2.0% if service is 20 or more years, and 1.5% for each year above 30

Plan Name	State	Employer Contribution Rate	RANK: Employer Contributions	Employee Contribution Rate	RANK: Employee Contributions	Social Security Eligible?	Overall Plan Type	Benefit Factor/Formula Multiplier
Ohio PERS	OH	9.5%	26	9.0%	3	No	DB	2.2% up to 30 years and 2.5% thereafter
Oklahoma PERS	OK	10.0%	24	6.0%	19	Yes	DB	2%
Oregon PERS	OR	8.7%	28	0.0%	49	Yes	DB	1.67%; 2.0% for public safety personnel
Pennsylvania State ERS	PA	4.0%	56	6.3%	17	Yes	DB	2.5%
Rhode Island ERS	RI	21.1%	1	8.8%	5	Yes	DB	1.6% for first 10 yrs, 1.8% for yrs 11-20, 2.0% for yrs 21-25, 2.25% for yrs 26-30, 2.5% for years 31-37, 2.25% for yr 38; slightly lower multipliers were established for non-vested and new workers as of 7/1/05
South Carolina RS	SC	8.1%	30	6.5%	15	Yes	DB	1.82%
South Dakota PERS	SD	6.0%	43	6.0%	20	Yes	DB	Higher of Enhanced Benefit, which is 1.625% for svc before 7/1/02 plus Base Benefit: 1.55% for svc after 7/1/02 ; or Alternate Benefit--see SDRS website for details
TN State and Teachers	TN	13.6%	10	0.0%	49	Yes	DB	1.5% plus .25% of FAS over SSIL
TN Political Subdivisions	TN	9.4%	27	5.0%	29	Yes	DB	1.5% plus .25% of FAS over SSIL
Texas ERS	TX	6.5%	40	6.0%	20	Yes	DB	2.3%
Utah Noncontributory	UT	13.0%	12	0.0%	49	Yes	DB	2%
Virginia Retirement System	VA	5.7%	47	5.0%	29	Yes	DB	1.7%
Vermont State Employees	VT	6.5%	39	5.1%	28	Yes	DB	1.67%
Washington PERS 1	WA	5.5%	49	6.0%	20	Yes	DB	2%
Washington PERS 2/3	WA	5.5%	49	3.5%	43	Yes	DB	2%
Washington PERS 2/3	WA	5.5%	49	10.0%	2	Yes	DB	2%
Wisconsin Retirement System	WI	4.7%	53	5.0%	29	Yes	DB	1.6%; 1.765% for service before 2000
West Virginia PERS	WV	10.5%	20	4.5%	38	Yes	DB	2%
Wyoming Public Employees	WY	5.6%	48	5.7%	27	Yes	DB	2.125% for first 15 years, 2.25% for each year of service thereafter

Source: National Association of State Retirement Administrators, Public Fund Survey (www.publicfundsurvey.org)

Exhibit IV: Employer (Government) Contribution Rates - Police & Fire



Source: Based on data from NASRA's Public Fund Survey (data as of 6/30/2007)

Prepared by:
Applied Analysis and
Hobbs, Ong Associates

Exhibit IVA: Comparative Analysis of Public Employee Retirement Plans For Police and Fire Employees as of June 30, 2007

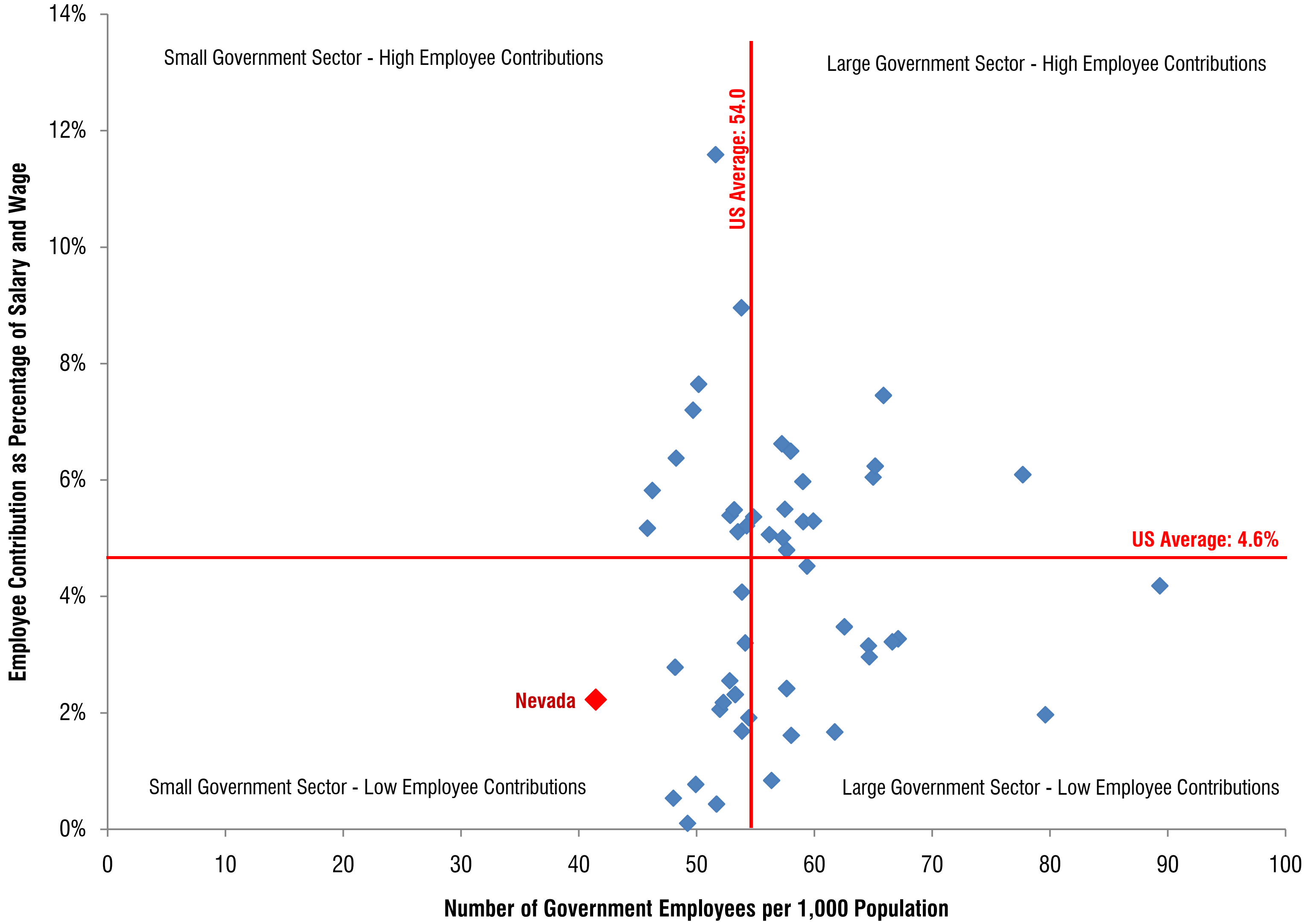
Plan Name	State	Employer Contribution Rate	RANK: Employer Contributions	Employee Contribution Rate	RANK: Employee Contributions	Social Security Eligible?	Overall Plan Type	Benefit Factor/Formula Multiplier
Alaska PERS (Police & Fire)	AK	16.8%	17	7.5%	21	Yes	DB	Public safety ee's receive 2% for the first 10 years and 2.5% thereafter
Alabama ERS	AL	21.4%	9	10.0%	6	Yes	DB	2.01%
Arizona Public Safety Personnel	AZ	13.8%	20	7.7%	19	Yes	DB	for 20 to 25 years of service, 50% of FAS plus 2% for each year above 20; for more than 25 years, 2.5% for each year above 20
San Diego County	CA	29.2%	5	11.3%	3	Yes	DB	3%
Colorado State	CO	13.4%	21	10.0%	6	No	DB	2.5%
DC Police & Fire	DC	34.1%	2	8.0%	14	No	DB	2.5%
Florida RS	FL	20.9%	10	0.0%	25	Yes	DB	3.0% for most public safety personnel
Hawaii ERS	HI	15.8%	19	0.0%	25	Yes	DB	2%
Iowa PERS	IA	8.4%	29	8.4%	13	Yes	DB	2%
Idaho PERS	ID	10.7%	26	7.7%	19	Yes	DB	2.3% for public safety personnel
Illinois Municipial	IL	18.3%	14	7.5%	21	Yes	DB	2.5% for first 20 years for law enforcement personnel, plus 2.0% for years 20 to 30, and 1.0% for each year above 30
Illinois SERS	IL	11.5%	25	10.5%	4	Yes	DB	1.67%
Kentucky ERS	KY	22.0%	8	8.0%	14	Yes	DB	Hazardous: 2.49%
Kentucky County	KY	28.2%	6	8.0%	14	Yes	DB	Hazardous: 2.5%
Massachusetts SERS	MA	6.6%	31	12.0%	2	No	DB	2.5%; benefit may not exceed 80% of FAS
Minnesota PERF	MN	11.7%	24	7.8%	18	Yes	DB	1.7%
Missouri DOT and Highway Patrol	MO	37.5%	1	0.0%	25	Yes	DB	1.7%
Mississippi PERS	MS	30.3%	4	6.5%	23	Yes	DB	2.0% for the first 25 years and 2.5% for each year thereafter
North Dakota PERS	ND	12.0%	23	0.0%	25	Yes	DB	2%
New Hampshire Retirement System	NH	19.0%	13	9.4%	9	Yes	DB	2.5% for police and fire
New Jersey Police & Fire	NJ	19.2%	12	8.5%	12	Yes	DB	2%
Nevada Police Officer and Firefighter	NV	33.5%	3	0.0%	25	No	DB	2.5%; 2.67% for svc earned after 7/1/01
Nevada Police Officer and Firefighter	NV	17.3%	15	17.3%	1	No	DB	2.5%; 2.67% for svc earned after 7/1/01
NY State & Local Police & Fire	NY	17.0%	16	0.0%	25	Yes	DB	1.67% if service is less than 20 years, 2.0% if service is 20 or more years, and 1.5% for each year above 30
Ohio Police & Fire	OH	19.5%	11	10.0%	6	No	DB	2.5% for first 20 years, 2.0% for next 5, 1.5% for each year thereafter
Ohio PERS	OH	12.9%	22	10.1%	5	No	DB	For law enforcement officers, 2.5% up to 25 years and 2.1% thereafter
South Carolina Police	SC	10.3%	27	6.5%	23	Yes	DB	2.14%
South Dakota PERS	SD	8.0%	30	8.0%	14	Yes	DB	Higher of Enhanced Benefit, which is 1.625% for svc before 7/1/02 plus Base Benefit: 1.55% for svc after 7/1/02 ; or Alternate Benefit--see SDRS website for details
Houston Firefighters	TX	23.8%	7	9.0%	10	No	DB	2.5% for first 20 years and 3% for additional years up to 30; 1.7% for those retiring with less than 20 years of service
Virginia Retirement System	VA	16.5%	18	0.0%	25	Yes	DB	1.7%
Wyoming Public Employees	WY	8.6%	28	8.6%	11	Yes	DB	2.125% for first 15 years, 2.25% for each year of service thereafter

Source: National Association of State Retirement Administrators, Public Fund Survey (www.publicfundsurvey.org)

Exhibit V: Employer Contributions Receipts to Retirement Systems as a Percent of Salaries and Wages

Source: Based on data from U.S. Census Bureau - State & Local Government Employee Retirement Systems (FYE 6/30/3006)

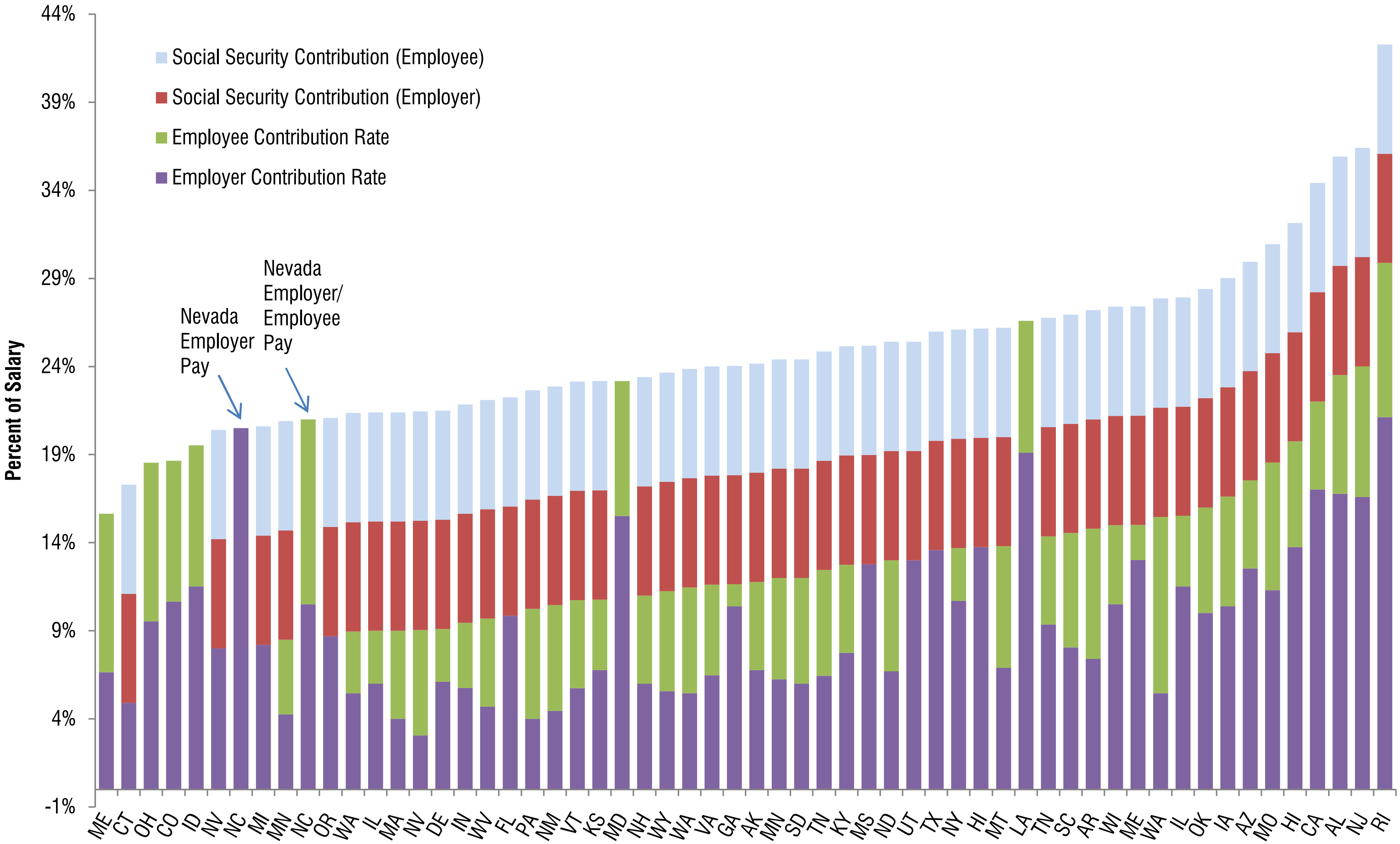
Exhibit VI: Employee Contribution Receipts to Retirement Systems as a Percent of Salaries and Wages



Source: Based on data from U.S. Census Bureau - State & Local Government Employee Retirement Systems (FYE 6/30/3006)

Prepared by:
Applied Analysis and
Hobbs, Ong Associates

Exhibit VII: Illustrative Constitution of Total Contributions Towards Retirement (PERS and Social Security) for Regular Employees



Source: Based on data from NASRA's Public Fund Survey (data as of 6/30/2007); note Social Security contributions are only illustrative as Social Security contributions may be capped as a percent of total salary depending on salary level.

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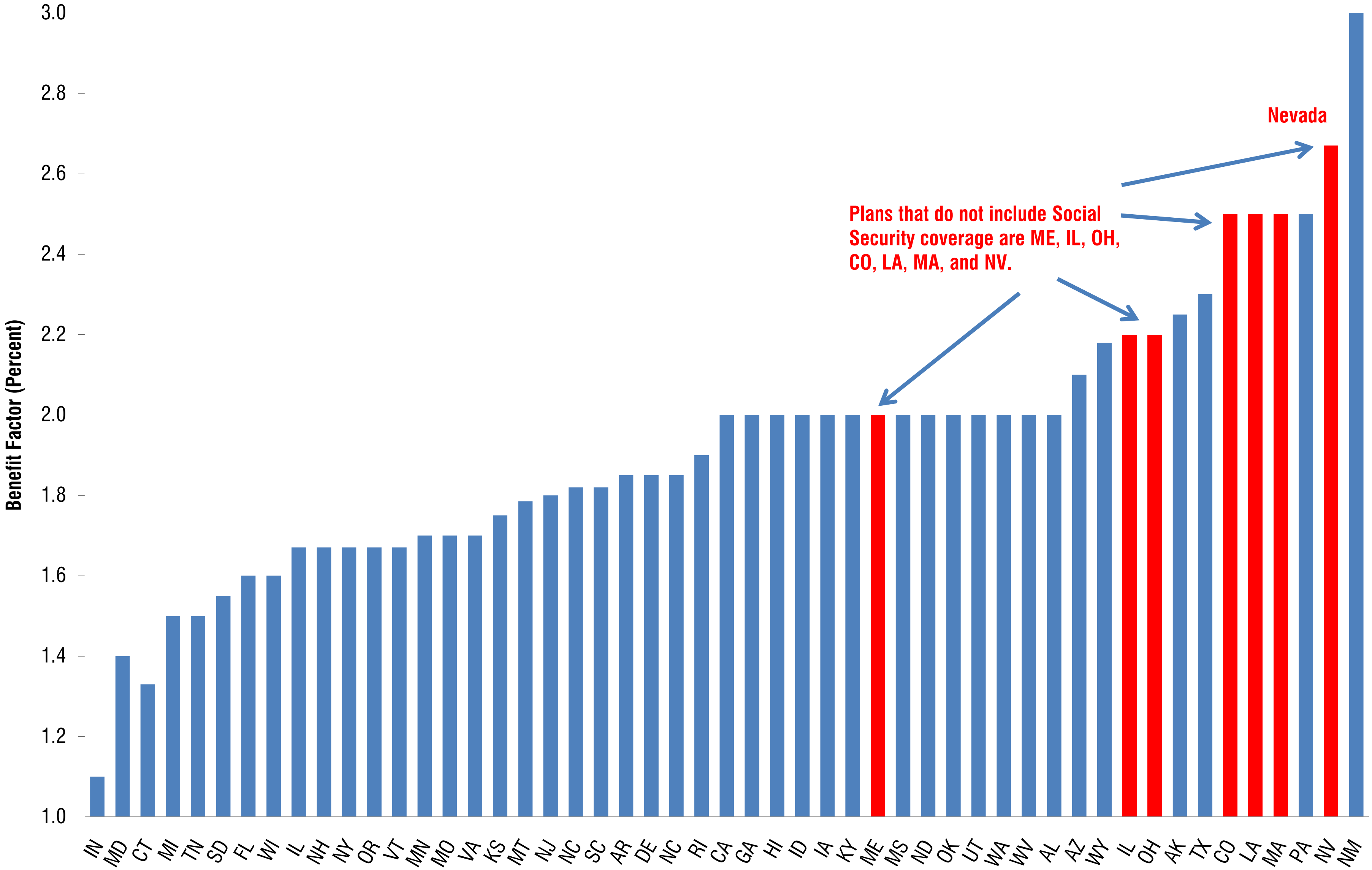
Applied Analysis and
Hobbs, Ong Associates

Exhibit VIII: Comparison of Benefit Factors
General State and Local Employees

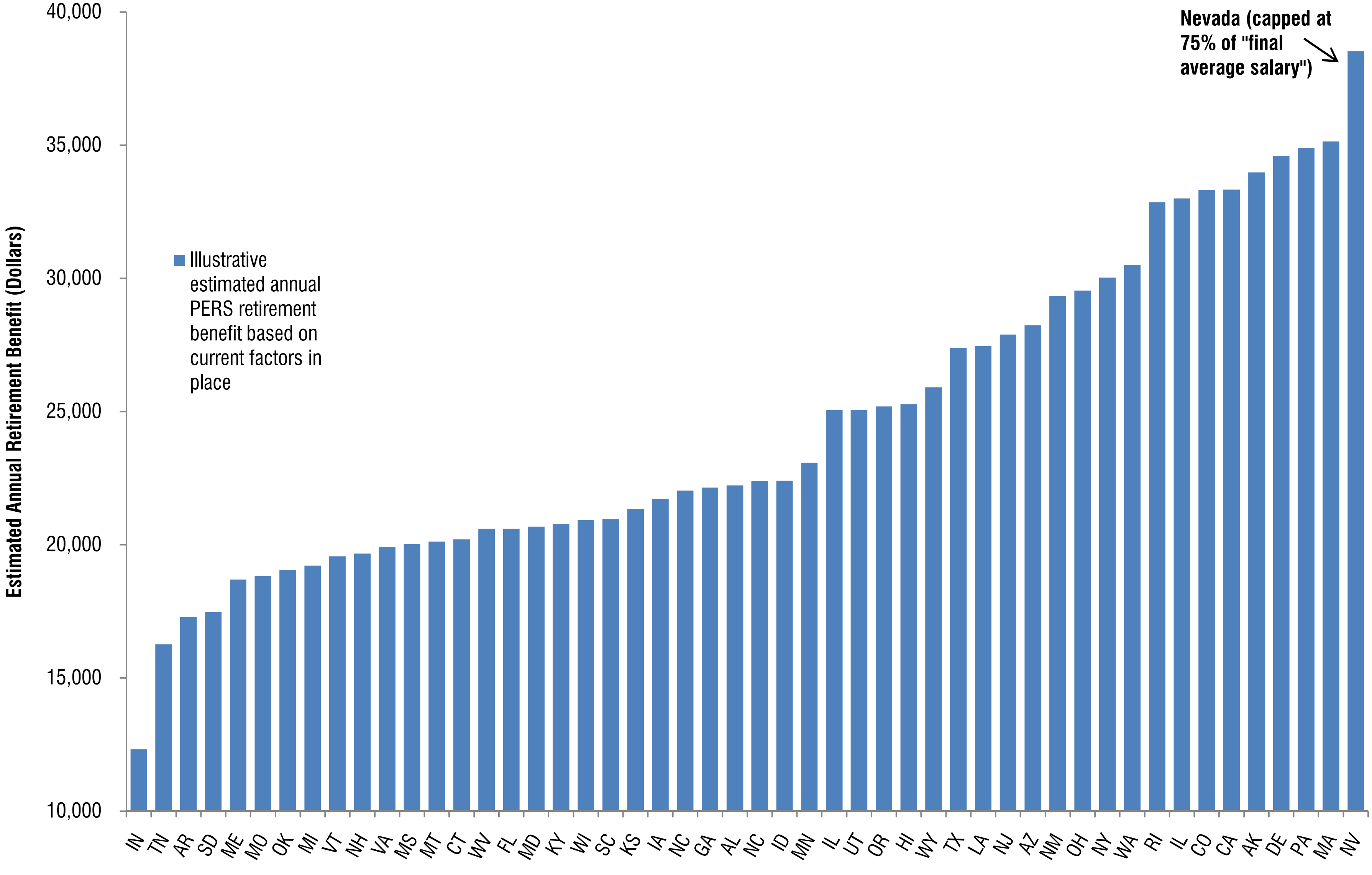


Source: Based on data from NASRA's Public Fund Survey (data as of 6/30/2007)

Prepared by:
Applied Analysis and
Hobbs, Ong Associates

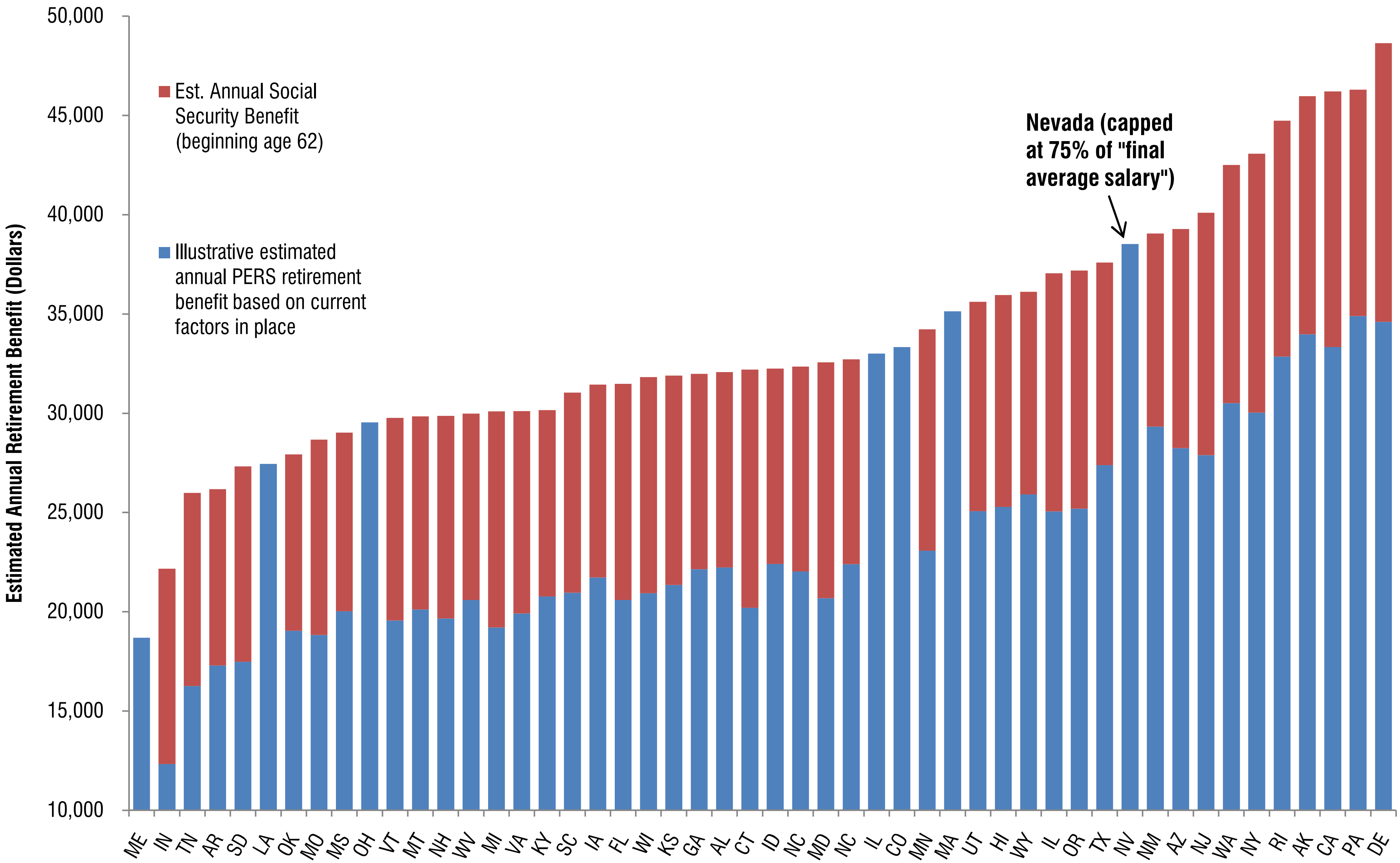
Exhibit IX: Illustrative Estimation of Annual PERS Retirement Benefit Based on Current Average Salaries, Current Benefit Factor Rules, and Current Caps - General Employees

30 Years of Service, Age 60, With Caps, No Early Retirement Deductions



Prepared by:
Applied Analysis and
Hobbs, Ong Associates

Exhibit X: Illustrative Estimation of Annual Retirement Benefit Plus Social Security
Current Average Salaries, Current Benefit Factor Rules, and Current Caps - General Employees
30 Years of Service, Age 60, With Caps, No Early Retirement Deductions



Note: This illustration does not reflect any reductions in benefits that sometimes occur when an individual receives both a pension and Social Security.

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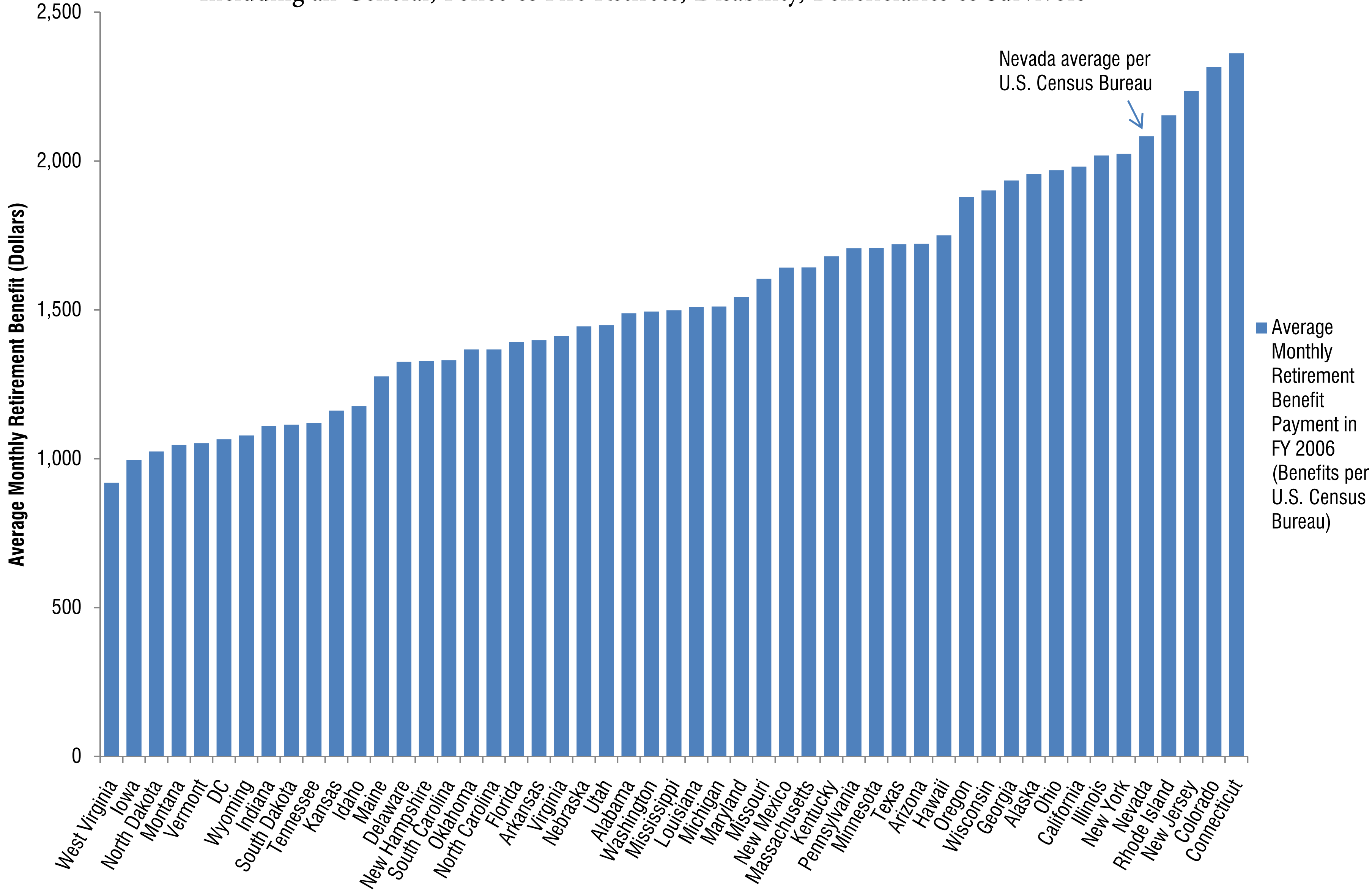
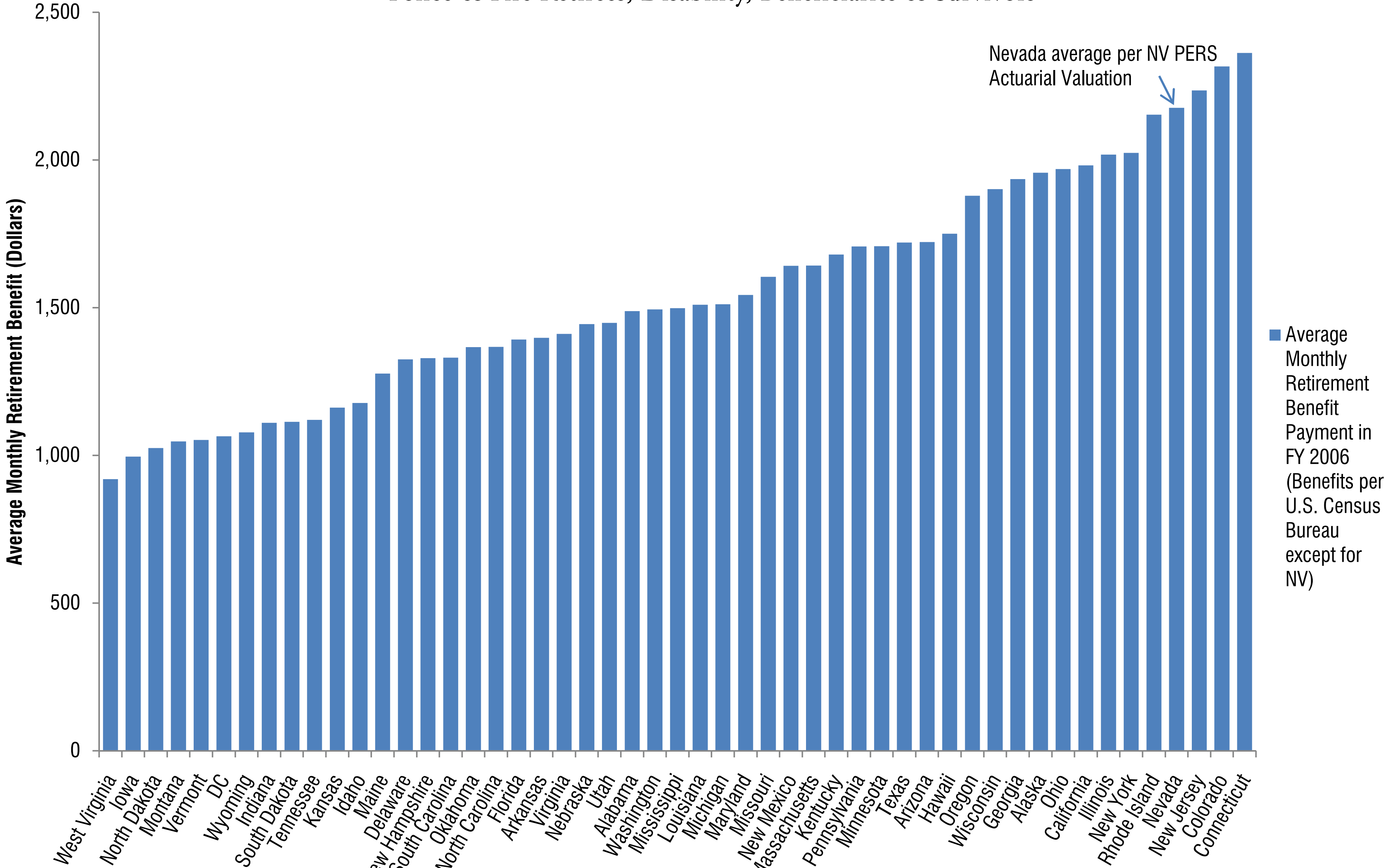
Exhibit XI: Average Monthly Retirement Benefit Payment in FY 2006 -
Including all General, Police & Fire Retirees, Disability, Beneficiaries & Survivors



Source: Based on data from U.S. Census Bureau - State & Local Government Employee Retirement Systems (FYE 6/30/3006)

Exhibit XII: Average Monthly Retirement Benefit Payment in FY 2006 - Including all General, Police & Fire Retirees, Disability, Beneficiaries & Survivors



Source: Based on data from U.S. Census Bureau - State & Local Government Employee Retirement Systems (FYE 6/30/3006) and for NV, the Nevada PERS Actuarial Valuation as of June 30, 2007.

Prepared by:
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Hobbs, Ong Associates