OFFICE OF THE COLORADO STATE AUDITOR

Annual Compensation Survey
Performance Evaluation
Department of Personnel & Administration

May 2009

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Members of the Legislative Audit Committee:

This report contains the results of an evaluation of the State of Colorado's Department of Personnel & Administration's Annual Compensation Survey. The evaluation was conducted pursuant to Section 24-50-104(4)(b)(I), Colorado Revised Statutes, which requires the State Auditor to contract with a private firm every four years to evaluate the Department's procedures and application of data when conducting the Annual Compensation Survey. The Colorado Office of the State Auditor contracted with Fox Lawson & Associates, LLC for this evaluation. This report presents our findings, conclusions, and recommendations, and the responses of the Department of Personnel & Administration.

Sincerely,

James C. Fox
Chairman and CEO

Overview of Colorado's Total Compensation Philosophy and Annual Survey

Section 24-50-104, Colorado Revised Statutes (C.R.S.) establishes Colorado's total compensation philosophy, which is to provide "prevailing total compensation to officers and employees in the state personnel system to ensure the recruitment, motivation, and retention of a qualified and competent work force." According to statute, "total compensation" includes, but is not limited to salary, group benefit plans, retirement benefits, performance awards, incentives, premium pay practices, and leave.

The Department of Personnel & Administration (Department) is required by statute [Section 24-50-104(1)(a)(II), C.R.S.] to annually review the results of appropriate surveys conducted by other organizations or conduct its own surveys to assess prevailing total compensation practices, levels, and costs. The purpose of this survey process is to determine if the State's salaries, employer contributions to benefit plans, and performance awards are comparable with other public and private sector employers. To make this determination, the Department uses data from market surveys that contain information on salaries and benefits to match, or benchmark, jobs within the state system with similar jobs outside of the state system. The Department uses the survey and benchmarking processes to determine how much market salary structures, or pay ranges, have moved, either upward or downward, from the prior year. Using the results of this analysis, the Department recommends adjustments to the salary structure for each of the State's six occupational groups that are in line with movements in market structures. The salary structure adjustment and the assignment of positions to a salary range is designed to ensure that if an employee is fully competent and performing well, the salary structure will allow him/her to be compensated at a level consistent with the market.

In most organizations, the decision to adjust the salary structure does not necessarily result in a change to employee base pay. Adjustments to the salary structure and changes in employees' base pay are generally separate decisions. The decision to actually move an employee through the salary structure by increasing base pay is governed by policies that are the result of the State's compensation philosophy. Typically in a pay-for-performance system, best practice is to move employees through the structure based on performance, assuming the increases are funded. In Colorado, however, the State has historically recommended changes to base pay consistent with the recommended structure adjustments.

In addition to salary comparisons, the Department uses surveys to compare the State's benefit practices and expenses with those in the market. Specifically, the Department compares the State's contribution to health insurance and other premium amounts to the contributions made by employers in the market and determines what adjustments are needed for the State to remain competitive as an employer.

Statutes [Sections 24-50-104(4)(b) and (c), C.R.S.] require the Department to report its survey findings annually to the Governor and the Joint Budget Committee of the General Assembly. The purpose of the report is to reflect all adjustments necessary to: (1) maintain a competitive salary structure, (2) maintain state contributions for group benefit plans, and (3) fund performance awards for the upcoming fiscal year. The State Personnel Director is also required to submit recommendations and the estimated costs associated with those recommendations for state employee compensation for the upcoming fiscal year. According to statute, the recommendations shall consider the results of the annual compensation survey, fiscal constraints, the ability to recruit and retain state employees, and appropriate adjustments with respect to state employee compensation. In Fiscal Year 2009 the State paid about $1.7 billion to its approximately 33,200 classified employees. The Department's Fiscal Year 2009 annual compensation survey process determined that an increase of approximately $98 million in salary and group benefit contributions was needed in Fiscal Year 2010 to bring these 33,200 employees to prevailing total compensation levels. This included an increase of about $66 million for salary structure adjustments and achievement pay and an increase of about $32 million for group benefit contributions. Due to fiscal constraints, the Department recommended the General Assembly fund only a minimum increase of about $16 million for group benefit contributions for Fiscal Year 2010. With the passage of Senate Bill 09-259, the General Assembly funded the $16 million increase for group benefit contributions. However, in an effort to ensure the Fiscal Year 2010 budget will remain balanced in the event there are future reductions in revenue projections, the Governor's Office of State Planning and Budgeting has approved a reversion of approximately $3 million of the $16 million.

Evaluation Scope

The State Auditor is required by statute [Section 24-50-104(4)(b), C.R.S.] to contract with a private firm every four years to conduct an evaluation of the Department's procedures and application of data with respect to the annual compensation survey process. The Office of the State Auditor contracted with Fox Lawson & Associates, LLC. to complete this evaluation, which included the following topics:

- **Data Collection –** Addressed questions related to the definition of the State's relevant labor market, data sources, and the general data collection processes employed by the Department.

- **Analysis –** Addressed questions related to the development and maintenance of the labor market database, trend calculations, and general findings of the survey report.

- **Conclusions –** Addressed general questions regarding the definition of the State's prevailing market and examined the accuracy of conclusions that the Department has made.

This report contains the results of our evaluation. We identified issues related to the Department's survey procedures and recommendations for salary adjustments, but did not identify any issues with the Department's survey practices related to benefits. A summary of our findings and a detailed discussion of each finding, along with our recommendations, follow in the remainder of this report.

Summary of Findings

The primary objective of the State's total compensation philosophy is to ensure that the State remains competitive with the prevailing market. To accomplish this objective, statutes direct the Department to conduct an annual compensation survey that identifies the State's competitive labor market, measures current compensation practices, and makes recommendations for adjustments to the State's compensation package. The purpose of this evaluation is to ensure that the Department's procedures and practices for conducting the survey are consistent with professional standards, and that the conclusions and recommendations made by the Department support the State's objective.

Overall, we found that the Department does not compare the State's actual compensation with the market and as a result, the State lacks assurance that its employees are paid salaries comparable to the market, as intended by the State's total compensation philosophy and by the statute. Although the Department has recently begun to incorporate some actual pay comparisons into its analysis of specific positions, the Department does not compare actual state employee pay with actual pay for similar jobs in the market to determine if the State's pay is competitive. Additionally, the Department does not compare the midpoint of the State's salary structures with the midpoints of salary structures for similar jobs in the market to determine if the State's salary structure is competitive with market structures. In compensation practice, the midpoint represents the amount an employee should be paid if fully competent and performing adequately in his or her job. If an employee is not fully competent, one would expect his or her salary to be below the midpoint. Salaries for employees consistently exceeding expectations for their positions would likely be above midpoint. Instead of comparing midpoints, the Department measures how much market salary structures have moved upward or downward since the prior year and makes recommendations that state salary structures move a similar amount. This process, however, assumes that the State's salary structures are set appropriately in the first place, and that actual employee salaries are set appropriately within those structures, which is not the case. In fact, when we compared actual state employee salaries with actual market salaries for all benchmark jobs, we found that in the aggregate, state salaries exceeded market salaries by more than 6 percent. If this 6 percent were extrapolated for all employees on the State's payroll, this would represent up to $103 million of total current payroll for a one-year period. However, a more detailed analysis would be required to break down the 6 percent and determine the types of positions where the variances are occurring and the reason for these variances. In addition, to adjust state salaries to market, a comprehensive market comparison, along with a more detailed cost analysis on an individual class- and employee-specific basis would be necessary. As part of this analysis, the Department would also need to consider how the State compares with the market with respect to benefits. The results of this benefits analysis should be combined with the results of the salary analysis to determine how the State's total compensation package compares with the market, as required by statute.

Actual Pay and Market Comparisons

To assess prevailing total compensation practices as required by statute, the Department conducts an extensive compensation survey each year. The Department analyzes survey data with a primary focus on determining how salary structures in the market have changed from the prior year and thus, how much the State's salary structures should be adjusted. As part of this process, the Department defines the salary range midpoint as the competitive level of pay for each job in the State and sets state midpoints in line with market salary range midpoints. To set salary range midpoints, the Department analyzes survey data on the salary ranges used by other organizations and calculates the percentage difference between the prior year's midpoint rate and the current year's midpoint rate for every job surveyed. The Department then adjusts the state salary ranges, including midpoints, within each occupational group to match the movement in salary range data obtained from the market.

We reviewed the Department's survey procedures and found that the Department does not compare the State's actual compensation system with the actual market system. Although the Department spends considerable time and resources analyzing survey data to assess movement in market salary structures, we found the Department does not compare state actual salaries with market actual salaries or the State's midpoints with market midpoints when determining recommended salary increases. To assess whether state salaries are consistent with prevailing salaries in the market, the Department must look at how state actual salaries compare with what the market is actually paying for a particular position and whether state midpoints are in line with market midpoints. We made this comparison using state salary data provided by the Department for all benchmark jobs and market salary data from the surveys used by the Department. Applying benchmark weighting techniques, as discussed in Recommendation No. 3, we compared state actual salaries and salary range midpoints with market data and found:

- **Actual Salaries.** We found that in the aggregate, state actual salaries are about 6 percent above market actual salaries for all benchmark jobs, with actual rates varying from 1 percent below market to 16 percent above market, depending upon the occupational group. The variances between state and market salaries are primarily found in three of the State's six occupational groups. As the table below shows, actual salaries for positions within the 'Professional and Financial Services,' 'Physical Sciences and Engineering,' and 'Enforcement and Protective Services' occupational groups---which tend to include positions with higher salaries---ranged from 8 percent to 16 percent above comparable market actual salaries. At 1 percent below market, the variance in salaries for the 'Administrative Support and Related,' 'Labor, Trades, and Crafts,' and 'Health Care Services' occupational groups are nominal and would be considered prevailing under industry standards.

- **Salary Range Midpoints.** We found that the State's midpoints are, on average, almost 7 percent above market midpoints, with rates varying from 0.2 percent to 13.1 percent above the market, depending on the job. This means that for many jobs, the State has set its competitive level of pay higher than the market. As the table shows, variances between state and market midpoints are also primarily found in the 'Professional and Financial Services,' 'Physical Sciences and Engineering,' and 'Enforcement and Protective Services' occupational groups, as well as the 'Health Care Services' occupational group, all of which have midpoints between 6 and 13 percent above market midpoints. The variance in midpoints for the 'Administrative Support and Related' and 'Labor, Trades, and Crafts' occupational groups would be considered nominal under industry standards.

Comparison of State and Market Actual Salaries and Salary Range Midpoints		
Occupational Group	**State Actual Salaries Over/(Under) Market Actual Salaries**	**State Salary Range Midpoints Compared with Market Salary Range Midpoints**
Administrative Support and Related	(1.0)%	0.2%
Labor, Trades, and Crafts	(1.0)%	0.2%
Health Care Services	(1.0)%	6.4%
Professional and Financial Services	8.0%	7.6%
Physical Sciences and Engineering	14.2%	13.1%
Enforcement and Protective Services[1]	16.0%	10.7%
Average	**6.1%**	**6.8%**

Source: Fox Lawson & Associates' analysis of the salary survey data files utilized by the Department during the conduct of the Fiscal Year 2009-2010 Annual Compensation Report.
[1] The Enforcement and Protective Services occupational group includes the state trooper subgroup.

On the basis of its survey findings and conclusions, the Department determined that the State's Fiscal Year 2010 salaries should be adjusted $66 million to bring the State up to market levels. We question whether the full amount of this adjustment was necessary since, on average, state actual salaries are already at or above prevailing rates for all occupational groups.

The Department's practice of using changes in market salary ranges and midpoints rather than actual salaries to set compensation levels causes state salaries to deviate from the market over time. The Department starts out its survey process by assuming that the State's salary structure was placed correctly and only needs to be adjusted to reflect changes in the market structure. However, relying solely on movements in market salary range data to set compensation levels assumes that organizations are actually paying their employees in accordance with the market ranges and established midpoints, which is not an accurate assumption in the State's case. In our experience, we have found that comparisons of salary range midpoints do not typically reflect current market conditions because these comparisons do not measure the actual salaries of employees in the market; they only measure the salary guidelines in use by the market. As a result, annual changes in midpoints are only a reflection of how those guidelines have changed on a year-to-year basis, and do not indicate if the State is or is not competitive with prevailing market salaries.

Instead of continuing to focus its survey process on measuring movement in market salary structures, the Department should redirect its resources to assess how state actual salaries compare with market actual salaries. Market structure movement can easily be measured in a day or two by purchasing published salary budget trend reports, at a cost of approximately $125 per report. We reviewed the recommended salary structure changes included in these trend reports over the past three years and found the recommendations were very similar to the changes recommended by the Department after completing its detailed analysis. The Department should discontinue using its resources to measure readily available trends and instead, focus its resources on conducting meaningful comparisons of state actual salaries against the market. Further, the Department should base its analysis for the Annual Compensation Survey Report and all subsequent recommendations on the actual salaries paid in the market. To the extent that the Department continues to define the salary range midpoint as the competitive level of pay for each job in the State, the Department should also compare state actual midpoints with market actual midpoints, not just the market change in midpoints from year-to-year. Similar recommendations have been made in prior audit reports but have not been implemented.

Recommendation No. 1:

The Department of Personnel & Administration should ensure that state salaries are competitive with the market by discontinuing the practice of using changes in market salary ranges and midpoints to set salary levels and instead, basing its annual compensation survey analysis and all subsequent recommendations for salary increases on comparisons of the state system with the prevailing market, which should include a comparison of state actual salaries and midpoints with market actual salaries and midpoints.

Department of Personnel & Administration Response:

Agree. Implementation Date: August 1, 2009. The Department agrees that state actual salaries and midpoints should be compared with market actual salaries and midpoints to determine if state salaries are competitive with the market. Over the past several years, the Department has implemented several improvements to incorporate additional data into the survey process. For example, the use of published salary budget planning surveys provides the figure needed for the overall salary increase budget. Also, actual salary comparison is used in the outlier analysis resulting in outlier class survey adjustments as well as system maintenance studies. While these are somewhat separate processes, it does represent a comparison of state actual salaries to determine alignment with market salaries. The Department will incorporate a comparison of actual salaries in the current survey process.

Given that salaries only represent a portion of total compensation, we agree that the funding levels for group benefit plans must be incorporated into the analysis to determine if state employees are compensated at an appropriate level. Currently group benefit plans are funded significantly below market levels. Therefore, while state employee salaries may be slightly above market actual salaries, a comprehensive market comparison analysis is needed to determine how total compensation for state employees compares to total compensation within the market before making any conclusions.

Salary Survey Procedures

For the Department to be able to implement Recommendation No. 1 and incorporate a comparison of state actual salaries and midpoints with market actual salaries and midpoints into its annual compensation survey process, the Department will need to make changes to its survey procedures. To determine if the State's actual salaries are comparable with other public and private sector employers, the Department must use data from market surveys. There are certain industry standards that a survey must meet to be considered reliable and valid, and the Department has incorporated these standards into its survey process. These standards include:

- The survey was conducted by a reputable salary survey firm on a continual basis (i.e., the survey is not a one-time event).
- The survey data are not self-reported by individual employees.
- The survey reports its data sources, the effective date of the data, and that the data were tested to ensure accurate matches and data.

We have identified five issues related to the data used by the Department to complete its survey and the Department's analysis of the data. These issues do not appear to have had a significant impact on the overall results of the Department's salary structure analysis. This is because, once data are aggregated, the effect of the problems on specific aspects of the analysis are minimized. However, it is important for the Department to address these issues, which will become more pronounced when conducting actual market comparisons on individual benchmark jobs. To ensure the reliability and validity of the conclusions drawn from the analysis and the recommendations made to the Governor and the General Assembly, the Department will need to make changes to address (1) the volatility of survey data, (2) the benchmarking process, (3) the use of market definitions, (4) the analysis of variable pay, and (5) survey compliance with the Sherman Anti-Trust Act, as discussed below.

Volatility

Each year during the annual compensation survey process the Department compiles over 8,000 pieces of data from market surveys for about 250 state jobs across all occupational groups. 'Volatility' refers to the relative stability of the market data that are collected from year-to-year. According to industry standards, data points that either decreased by more than 1 percent from the previous year or increased by more than 5 percent are considered to be 'extremely volatile' and not reliable. Typically one would expect to find that less than 1 percent of the data points in a survey have changed to such a degree from the previous year to be considered extremely volatile. There are essentially two ways that organizations can control, or reduce, the volatility of the data they use. First, organizations can purchase surveys that have a consistent number of participants reporting data for a consistent number of jobs on a year-to-year basis. Second, organizations can focus on those 'bellwether' jobs for which market data are readily available from year-to-year.

We reviewed the data in the surveys that are used by the Department and found that about 34 percent of the data points from these surveys would be considered extremely volatile by industry standards. That is, about 7 percent of the data points decreased more than 1 percent from the prior year, while about 27 percent increased more than 5 percent. It is not typical for market salaries to show such drastic year-over-year changes. Although the Department filters the data for outliers, when there is a high degree of volatility in a large percentage of survey data, it raises concerns about the overall validity of the data and whether the data actually reflect market conditions. For example, one data point used from the Colorado Municipal League survey for the Accountant II classification showed a year-over-year increase of 13.75 percent. Had this been the only data point used for that classification, the survey results would suggest that a 13.75 percent increase would be necessary for that classification for the State to remain competitive with the market. This increase, however, would be significantly out of alignment with other classifications within the 'Professional and Financial Services' occupational group and therefore, should not be considered an accurate reflection of market conditions.

The Department currently uses smaller, regional surveys from public and professional associations that provide a specific focus on Colorado and other Rocky Mountain area employers. These surveys have, on average, 50 to 150 participants and the number of employers participating fluctuates from year-to-year. When the number of participating organizations fluctuates, this can have a significant impact on the data reported in the survey. For example, if there were 14 organizations reporting matches for an Accountant II position in a 2007 survey, but only 5 organizations reporting a match for that same position in the 2008 survey, one might find that the 2007 survey included 10 relatively higher paying cities and counties and 4 average paying cities, while the 2008 survey only included 4 average paying cities. Comparing data from the two years would likely show a significant decrease in the market salary for that classification in 2008 solely because of the number and type of organizations reporting data.

Data volatility is rarely an issue for larger, nationally published surveys that collect data from hundreds or even thousands of organizations. When dealing with smaller regional surveys like those used by the Department, however, data volatility is a common problem. Therefore, the Department should purchase additional salary surveys from reputable national firms that have a larger number of participating organizations than the surveys currently used. In addition, about a quarter of the 250 state jobs for which the Department collects data are unique to the State. For example, the State has positions such as 'Tax Examiner' and 'Lottery Sales Representative' and uses multiple levels in a job class (e.g., Accountant I, II, III, IV, and V) that are often not found in the market. As a result, these jobs are more difficult to match with comparable jobs in the market. This means that in any given year there may be a significant change in the number and type of organizations reporting data for these jobs. As discussed above, these changes can have a significant impact on the volatility of the data reported in the surveys. The Department could also reduce the volatility of its data if it were to collect data for only those jobs that are more common in the market and for which data are consistently available from year-to-year.

Recommendation No. 2:

The Department of Personnel & Administration should ensure the reliability of the data used for the annual compensation survey by:

a. Purchasing additional salary surveys, to the extent possible, from reputable national firms that have a larger number of participating organizations than the surveys currently used by the Department.

b. Collecting data for only those jobs that are more common in the market and for which data are consistently available on a year-to-year basis.

Department of Personnel & Administration Response:

Agree. Implementation Date: August 1, 2009.

a. The Department has already purchased some salary surveys from a reputable national firm for the next survey, which will be reflected in the report published on August 1, 2009 for Fiscal Year 2010-11. The Department continues to examine additional surveys from national firms that meet the criteria for survey selection and that are necessary to maintain a professionally and technically sound survey. The Department will incorporate the additional survey sources, as appropriate, to the extent permitted by available budgeted operating funds. Current appropriations may preclude the purchase of the additional surveys recommended. The Department will seek additional operating funding, as necessary, to implement this recommendation fully.

b. The Department believes the majority of its matched jobs are already common and consistent in the market. Past audits of the survey have recommended matching more state jobs, including the 2005 audit recommendation to match up to 75 percent of state jobs. Thus, the Department has attempted to match as many jobs as possible. While some specific matches may appear to be volatile, filters are applied to the data during the analysis to control for volatility and we have found no significant differences in the results. In addition, the Department believes that a few that may be questioned do not invalidate the entire survey, especially with the amount of data used in the state survey. However, we agree to reexamine our matches to ensure consistency with industry standards.

Benchmarking

Once an organization has obtained reliable, non-volatile data, the organization must also ensure that all classifications, or jobs, within an occupational group that will be matched with the market are represented evenly in the market data. Benchmark representation is the distribution of market data, or data points, among the classifications, or jobs, used as benchmarks. When benchmarking jobs during the salary survey process, one would expect to see a relatively even distribution of data points among the benchmark jobs. For example, if 50 jobs were selected as benchmarks within the 'Professional and Financial Services' occupational group, one would expect to see an equal number of market salary data points for each job (e.g., five data points per benchmark job). An even distribution of data helps to ensure that each benchmark job has approximately the same amount of influence on the market comparison for the occupational group. However, since it is not always possible to have the same number of data points for each benchmark job, professional compensation practice would recommend the use of a benchmark weighting methodology in which each benchmark job is given equal weighting when calculating actual market salaries.

We reviewed the Department's benchmarking process and found that there is no consistency in the number of data points used for individual benchmark jobs. Specifically, we found that the representation of market data for benchmark jobs within an occupational group varies significantly, with some benchmark jobs representing as little as 0.041 percent of total matches for a group, while others represent as much as 20.26 percent. For example, in the 'Professional and Financial Services' occupational group, there were a total of 52 data points used for the IT Technician II classification, yet only 3 data points for the IT Technician I classification. The lack of consistency in the number of data points available for benchmark jobs within an occupational group skews the results of the market structure trends currently calculated by the Department for each group. This is because each data point is given the same weighting in the Department's calculation of the salary structure trends. In this example, the IT Technician II classification exerts an influence on the trend calculation that is roughly 17 times greater than that of the IT Technician I classification. In 2009 the average market midpoint trend for the IT Technician II classification showed an increase of 2.02 percent, while the average trend for the IT Technician I showed an increase of 4.0 percent. This means that the 2.02 percent increase for the IT Technician II was essentially being counted 17 more times towards the overall trend calculation than the 4.0 percent increase for the IT Technician I. This same skewing of the data will also occur if the Department changes its approach to the survey process and begins to analyze actual salary data rather than trends in structure movement, as discussed in Recommendation No. 1. Inconsistencies in the number of data points matched for each job are of even greater concern when combined with the data volatility issues discussed in Recommendation No. 2.

There are two primary reasons for the lack of consistency in the Department's benchmark data. First, the uniqueness of many of the state jobs that the Department benchmarks makes it difficult to match these jobs in the market. This means that often there are only one or two data points available to match for these jobs. By attempting to collect data for the rarer and more difficult-to-price jobs, the Department is forced to accept a more limited number of data points for certain benchmarks. Additionally, including these hard-to-match jobs in the benchmarking process often results in problems with the matches that are made. For example, we reviewed 48 of the Department's benchmark jobs and found one job was matched at an inappropriate level and about a third of the job matches had minor inconsistencies. Although these inconsistencies did not have a measurable impact on the overall results of the Annual Compensation Survey Report, they could have an impact on any detailed compensation reviews that the Department conducts for specific jobs. The Department's implementation of Recommendation No. 2 to collect data for only those 'bellwether' jobs that are more common in the market and for which a minimum number of data points are consistently available would also help the Department achieve a more even distribution of data among benchmark jobs within an occupational group.

A second reason for the lack of consistency in the Department's benchmark data is that the Department does not appropriately weight the data when there are an uneven number of data points available for benchmark jobs within an occupational group. Even when an organization only collects data for 'bellwether' jobs, the number of data points available for each individual benchmark job within an occupational group will still vary. Therefore, the Department should use a benchmark weighting methodology to ensure that all benchmark jobs within an occupational group are given an appropriate weighting in any salary analysis completed during the survey process, regardless of the number of data points available in the market.

Recommendation No. 3:

The Department of Personnel & Administration should ensure that market data are applied consistently during the annual compensation survey process by:

a. Collecting data for only those 'bellwether' benchmark jobs that are common in the market and have a minimum number of data points readily available on a year-to-year basis.

b. Using a benchmark weighting methodology to ensure that all benchmark jobs are given an appropriate weighting in any salary analysis completed during the survey process.

Department of Personnel & Administration Response:

Agree. Implementation Date: August 1, 2009.

a. As stated in the response to Recommendation 2b, the Department believes the majority of its matched jobs are already common and consistent in the market. However, for jobs specific or unique to state government, the Department began including data last year from the Central States Compensation Association survey. We generally apply the industry standard in terms of the minimum number of data points for a match; however, as previously noted, there was an attempt to match as many state jobs or classes, as possible to comply with a previous audit recommendation. Thus, a few matches may not have met the standard for number of data points due to the uniqueness of the job. The Department agrees to apply industry standards related to the number of data points as part of reexamining our survey matches.

b. The Department agrees that an appropriate weighting mechanism is needed. We have applied a mechanism based on the number of employees that the State is budgeting for; however, this mechanism can be improved. The Department will redefine its weighting mechanism for the next survey to be reported on August 1, 2009.

Market Definitions

When conducting salary surveys, organizations must define their labor market(s) to ensure they identify salary data from comparable employers consistent with their compensation philosophy. For public sector employers, the applicable labor market may be defined in statute or law. Absent specific direction, it is up to an organization to define its own labor markets. Market definitions provide guidance regarding the data sources that are to be used for specific jobs, occupational families, or the entire organization, and the weighting that should be given to each source. For example, organizations may define two markets and apply one market definition to lower-level jobs (e.g., unskilled laborers) and a second market definition to higher-level jobs (e.g., skilled professionals). In this example, under the first market definition, the organization may collect salary data for unskilled laborers from employers within a limited geographical area, such as within a 50-mile radius of the organization. Under the second market definition, salary data for skilled professionals may be collected from all employers within the state, or perhaps multiple states. In addition, organizations that incorporate both public and private sector data into their market definitions must decide what weight to assign to each data source to prevent one sector from having an inappropriate level of influence on survey results than the other. Once again, for public sector employers, the weight to assign each data source may be defined in statute or law. Generally, when there is no specific statutory direction as to the weight to be given to public versus private sector data, organizations will use a 50/50 weighting for the two data sources.

We reviewed the Department's application of market definitions when conducting its annual compensation survey and found that the Department has defined its primary and secondary markets in accordance with statute [Sections 24-50-104(1)(a)(II) and (III) and 24-50-104(4)(c), C.R.S.]. In most instances the Department's primary market is defined as including both public and private sector employers within the State, while the secondary market includes employers outside of Colorado that are similar to the State in terms of size, structure, and industry. We found, however, that Colorado statutes are silent on how the Department should weight public and private sector data when conducting the survey and the Department has not established its own guidelines for determining when and how to apply its market definitions or how to weight public and private sector data.

When organizations do not properly identify and define comparable labor markets and weight public and private sector data appropriately, inconsistent market representations for individual benchmarks within an occupational group may result. For example, the market salary for an Accountant I classification could be based entirely on 'secondary' market data from the public sector, while the Accountant II classification is based entirely on 'primary' market data from the private sector. As a result, the market salaries for each of these classifications, while part of the same career progression within the state system, could be derived from entirely different labor markets. This can result in highly volatile survey results that are not consistent within an occupational group and are not reflective of the Department's defined labor market. The problems resulting from the Department not differentiating between its labor market definitions and not establishing guidelines for weighting public and private sector data are illustrated in the State's 'Applications Programmer' classifications within the 'Professional and Financial Services' occupational group. When we examined the market data the Department uses for these classifications the data showed an annual salary of $58,752 for a Programmer I, $55,032 for a Programmer II, and $85,308 for a Programmer III. Although state salaries for the 'Applications Programmer' classifications do not reflect these inconsistencies, it is clear that these data do not represent a valid or reliable picture of the labor market for these positions. Inconsistencies in the data, however, will not always be this pronounced and may go undetected by the Department. Therefore, the Department should develop and implement guidelines for the application of primary and secondary market data and the weighting of public and private sector data for specific job levels and/or occupational groups.

Once the Department has established guidelines for applying primary and secondary market data and weighting public and private sector data, the Department should evaluate the salary surveys its uses to ensure that these surveys sufficiently break out the data in a manner that is consistent with the Department's guidelines. We found that some of the surveys currently used by the Department do not break out salary data in such a way to determine if the data are from employers in the Department's primary or secondary market, or in the public or private sector. When possible, the Department should use surveys that sufficiently break out salary data consistent with the Department's primary and secondary market definitions and by public and private sectors.

Recommendation No. 4:

The Department of Personnel & Administration should ensure that market data are applied consistently when conducting the annual compensation survey by:

a. Developing and implementing formal guidelines for the application of primary and secondary market data and the relative weighting of public and private sector data for specific job levels and/or occupational groups.

b. Using surveys, when possible, that sufficiently break out salary data consistent with the Department's primary and secondary market definitions and by public and private sectors.

Department of Personnel & Administration Response:

Agree. Implementation Date: August 1, 2010.

a. The Department agrees formal guidelines for the application and weighting of data are needed. Within the statutory definition of the market, the process of refining the guidelines for application of data has begun. The Department will develop and implement appropriate guidelines and a mechanism for weighting data from market sectors to the various occupational groups and classes.

b. The Department agrees to ensure surveys report data consistent with the State's market definitions and public or private sector, to the extent possible.

Variable Compensation

Variable, or incentive, compensation is additional compensation, often referred to as a 'bonus,' that is paid to employees separately from their base salary. Variable compensation payments are generally given as one-time, lump sum payments, in response to the achievement of predefined levels of performance, project completion, or other defined milestones. We have found that variable compensation is a prominent component of organizations' total compensation in both public and private sector markets. For organizations that provide both base and variable compensation, base salaries typically represent approximately 95 percent of an individual's total cash compensation, while variable compensation represents the remaining 5 percent. However, depending on whether the organization is in the public or private sector and the 'level' of the position (e.g. unskilled laborers vs. skilled professionals and managers), variable compensation may represent as little as 1 percent of an individual's pay, or as much as 15 percent or more. Therefore, it is important that organizations include variable compensation when analyzing salary data so that they obtain complete information on what other organizations are paying for comparable positions.

The last performance audit of the annual compensation survey in 2005 found that the Department did not include variable compensation when evaluating the competitiveness of state cash compensation. The audit recommended that the Department purchase salary surveys that provide data on total cash compensation, which includes both base salaries and variable compensation. In our current evaluation, we found that the Department has started to purchase and use some surveys that include data on variable compensation. However, the variable compensation data in these surveys are not reported consistently and the data are not broken down by occupational groups or types of jobs. Further, the Department does not include variable compensation in the detailed salary analysis that it conducts each year. Instead, the Department takes the total compensation figures reported in the surveys and subtracts out the percentage that the Department determines is attributable to base salaries based on the results of its own detailed analysis. The Department then attributes the difference between these two amounts to variable compensation. Although this approach provides a general idea of the amount of variable compensation paid by the market, the results cannot be broken down for specific jobs, or even for occupational groups. Therefore, the Department applies the results evenly across all occupational groups and jobs. However, as mentioned above, variable compensation in the private sector generally accounts for a larger percentage of total compensation for higher-level, skilled positions, than it does for lower-level, unskilled positions. In the public sector, variable compensation tends to be applied more uniformly across all types of positions. These differences are not accounted for in the Department's current survey procedures.

The Department has improved its survey procedures since the last audit by including variable compensation in its assessment of cash compensation. However, the Department needs to make further improvements by including variable compensation in its detailed comparison of state actual salaries with market actual salaries, as discussed in Recommendation No. 1. The Department must also ensure that surveys used to conduct the annual compensation survey include sufficient variable compensation data that can be broken out by occupational groups and specific types of jobs.

Recommendation No. 5:

The Department of Personnel & Administration should include variable compensation data in its comparison of state actual salaries with market actual salaries as discussed in Recommendation No. 1. The Department should also ensure that, to the extent possible, salary surveys used to conduct the annual compensation survey include sufficient variable compensation data and that the data are broken out by occupational groups and specific types of jobs.

Department of Personnel & Administration Response:

Agree. Implementation Date: August 1, 2009. The Department will include variable compensation data to the greatest extent possible. It should be noted that some surveys, especially for the public sector, do not report variable pay or it is more uniform across occupational groups and jobs. However, these surveys are still a valuable source of data, including providing trends in overall planned salary increase budgets. As stated above, the survey process for the next cycle incorporates the use of actual salary data so reporting on this variable compensation can begin in August 2009. It should be noted that while variable compensation is a sound compensation policy and will be included in the survey, its success in any organization is dependent upon its unique culture, the process of distribution, and adequate funding.

Sherman Anti-Trust Act

Recent legal developments have targeted the administration of salary surveys as potential violations of the Sherman Anti-Trust Act (Act). The Act was designed to combat monopolies and other endeavors that suppress competition. As a result, the United States Departments of Justice and Labor have developed specific guidelines, standards, and recommendations regarding the administration of salary surveys to help prevent potential violations of the Act. These guidelines include:

- Survey data cannot reflect the identity or any factor that may allow someone to identify a participating organization.
- Data shown in the survey must be aggregated results only (i.e., data from specific organizations cannot be shown alone).
- At least five organizations must report a match for each job included in the survey.
- No organization can represent more than 25 percent of the data for any individual benchmark job.
- Survey data should be collected and analyzed by a third party.

We reviewed the surveys used by the Department to conduct the annual compensation survey process and found that some of the surveys do not comply with the guidelines established by the federal government. Specifically, we found:

- Two surveys (Colorado Municipal League and the Central States Compensation Association) provide identifying information for participating organizations and publish the results for each participant.

- One survey (Mountain States Employers Council) includes data from less than five organizations for certain jobs. For example, we identified six jobs where only four organizations reported salary data.

In addition, we found that current statutory requirements related to the Department's survey process for state troopers conflict with federal guidelines. Statute [Section 24-50-104(1)(a)(III)(A), C.R.S.] requires the Department to review salary data for the top three law enforcement agencies in the State that have both more than 100 commissioned officers and the highest actual average salary. The Department is then required to set trooper salaries for at least 99 percent of the actual average salary provided by these three organizations. Due to these requirements, the Department's survey process for troopers is not in compliance with many of the federal guidelines. For example, the Department is required to use data from three organizations, not the five required by the guidelines, and each organization represents at least 33 percent of the data instead of the 25 percent required by the guidelines.

It is important that the surveys the Department uses to conduct its annual compensation survey comply with the guidelines established by the federal government and the Act. Although the Act was originally established to address salary survey issues in the private sector, it is not clear whether the Act applies to the public sector. Neither the United States Departments of Justice nor Labor have stated that the Act does not apply to state governments and there is no case law in this area. However, there has been litigation in the private sector related to salary surveys that violate the Act and the State could potentially be exposed to litigation as well. The Department should ensure that any surveys it uses during the annual compensation survey process comply with federal guidelines and the Sherman Anti-Trust Act. In addition, the Department should evaluate current statutory requirements related to the survey process for state troopers and determine if changes are needed to ensure the State's compliance with federal guidelines and the Act.

Recommendation No. 6:

The Department of Personnel & Administration should ensure that the annual compensation survey process complies with federal guidelines and the Sherman Anti-Trust Act by:

a. Ensuring that the surveys and data used during the process are consistent with federal guidelines and the Act.

b. Evaluating statutory requirements related to the survey process for state troopers to determine if changes are needed to ensure the State's compliance with federal guidelines and the Act, pursuing statutory changes as necessary.

Department of Personnel & Administration Response:

a. Agree. Implementation Date: August 1, 2009. The Department applies industry standards to the annual survey process. It should be noted that while some public sector surveys provide identifying information, the Department maintains and applies the data in aggregate and maintains confidentiality of data in order to comply with the standards. The exception is the State Trooper class series, which has a statutorily defined special market. As part of the survey process for the next cycle, the standards were reviewed to ensure federal anti-wage fixing guidelines are included.

b. Agree. Implementation Date: July 1, 2010. The Department agrees to examine the statutory definition of the special market for State Troopers in conjunction with the Association of Colorado State Patrol Professionals (ACSPP). The Department will work with the General Assembly as necessary to pursue legislation for the 2010 Session in order to comply with federal anti-wage fixing guidelines.

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