

**Office of the Colorado State Auditor
Performance Audit of the Colorado Department of Personnel's
Annual Total Compensation Survey**

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I. Summary

The purpose of this performance audit is to review and examine, for accuracy and/or for identification of best practices, the Colorado Department of Personnel's (DOP) 2001 Total Compensation Survey. Section 24-50-104(4)(b), C.R.S., requires the Colorado Office of the State Auditor to contract with a private firm to conduct a performance audit of the Department of Personnel's annual total compensation survey. It further requires that the state personnel director establish technically and professionally sound survey methodologies to determine prevailing total compensation practices, levels, and costs. It is Buck Consultants' expert opinion that the DOP is applying technically sound compensation and mathematical principles in the annual survey process. The broad issues discussed in this section suggest that while the intent of the statutes governing the State's compensation and benefits policies are met, we believe that opportunities exist: to improve the survey process, and to increase the extent to which the statute's intents are realized.

A review of findings and recommendations and DOP responses to these recommendations is presented in Section IV of this audit report. Although we support the fundamental approach that the State has taken toward total compensation, we believe it is important to reiterate the conceptual issues that are vital to the success of a market-based total compensation program and ensure the State fulfills the intent and intent of the statutes by which it abides.

Conceptual Issues

Over the past three audit years, our purpose has been to review the application and use of survey findings by the DOP. In the context of applying best practices to compensation and benefits practice, our intent is to ask whether, on a broad level, the current process meets the intent of the statute governing state compensation and benefit policies. In other words, "Are the DOP's approaches and processes accomplishing what they were originally intended to do?" In our audit of the DOP's 2001 Total Compensation Survey we believe there are still three broad, fundamental principles that affect both our thinking and recommendations. Our role as compensation and benefits experts is to encourage the DOP and the State to continue to probe these principles further. Delivering an appropriate and competitive total compensation package and upholding the intent of the statute's intent is the focus of our report. We believe these principles are fundamental to total compensation analysis and have briefly outlined each below. These principles provide a backdrop for the more detailed analysis that follows.

Total Compensation

“Total compensation” as currently defined in the 2001 Compensation Survey is “base and premium pay, employer contributions toward benefit plans, non-monetary benefits, and job evaluation system studies that may have a fiscal impact.” The 2001 Total Compensation Report reflects separate salary and benefits recommendations which, when added together, become the total compensation recommendations.

This approach tends to be problematic because:

- ❑ **Pay** is examined by looking at the value employees receive in the form of their pay range or opportunity, while a second element,
- ❑ **Benefits** are evaluated not by value the employee receives but rather by the employer's cost for a broadly characterized benefit (e.g., health plan, dental plan, 401(k) plan).

Until the State redefines its approach to total compensation, it will be difficult to meet the market comparability requirements of the statute. As a result we have recommended that “total compensation” be defined as the average actual cost of salaries and benefits for benchmark jobs.

Prevailing Practice

The current understanding of the “prevailing practice” is the second area in which we find some difficulty the State's position. Our difficulty comes in the area of compensation.

The DOP defines “prevailing practice” as the typical pay range in the market. We do not believe this perspective accurately reflects what the statute is trying to capture. The use of salary range minimums and maximums to determine appropriate pay ranges for state employees ignores what employers **actually pay** their employees. Actual wages are affected by many factors including:

- ❑ How much pay opportunity is allowed above and below the middle of the range.
- ❑ The average number of years an employee works in a job and for an agency or the State as a whole.

In addition, the DOP's current interpretation of Colorado statute implies that "prevailing" means Front Range area. Labor markets differ across the State and it is possible that the State pays a higher than "market" rate in some markets than in others. If statewide equality is an identified value, then the current understanding of prevailing may be fine for this purpose. If not, then we believe that the State is not accomplishing its goal of paying wages and benefits that are consistent with the labor markets where it employs its staff. This is evident in that our analysis shows the State to pay, on average, wages at competitive Denver market levels.

Competitive Labor Market

Current market criteria used by DOP are based on statute and have a primary focus on the following areas in order of importance:

1. Front Range
2. Colorado
3. Regional states
4. U.S. National

Many factors influence a labor market and there are multiple ways to acquire valid data about that labor market, ranging from using local and regional surveys to applying geographic and industry indices to national data. To the degree that the State seeks an efficient, accurate, and comprehensive assessment of the competitiveness of its practices, the definition of the market may need to be modified. Later in this audit, as we have in previous audits, we recommend the State broaden its survey sources to include other industry-respected sources commonly utilized by compensation practitioners. Most of these sources provide only national data that would have to be adjusted by a geographic differential to reflect Front Range specific data.

DOP Response: As stated in the 1998 and 1999 survey audit reports, the DOP continues to agree philosophically and conceptually with the consultants that total compensation is base and premium pay, employer contributions toward benefit plans, non-monetary benefits, and system maintenance studies of classes which may have a fiscal impact. While the majority of the "total compensation package" is within

the State's control, a critical portion of the total compensation package, specifically PERA retirement and disability benefits, is not within the State's control. The DOP would need to suggest statutory revisions and work closely with PERA to be able to consolidate all compensation-related components into one integrated package.

The DOP agrees with Buck that there are many factors affecting actual wages. Due to the diversity in pay practices in the labor market, it is difficult to reach conclusions from actual pay rate comparisons. That is why the DOP made a policy decision in 1987 to survey the prevailing pay range instead of actual pay rates. Within the pay ranges, state employees receive actual pay adjustments in accordance with policies and procedures set by the Director. There is a need for the DOP to study pay practices in the labor market and critically examine its current policies on pay adjustments in order to assure that the state is providing a total compensation package that is competitive with the labor market.

Under the current statute, the DOP has to make separate legislative recommendations for salary and benefit funding since there are different statutory requirements to implement salary and benefit recommendations. The DOP does not dispute Buck's definition of a total compensation package as the "average actual cost of salaries and benefits for benchmark jobs"; however, as pointed out by the consultant, without examining pay practices and other actual pay-related factors, a simple total actual cost (including both salaries and benefits) comparison may not be conclusive either. Furthermore, even if the statute were revised to allow for recommendations of a total compensation package, the DOP would have to use pay relationships between benchmark and non-benchmark jobs within the state system in order to establish the total compensation package for non-benchmark jobs.

The DOP is in the process of developing and implementing a total compensation package. It is a process that will require many different activities over the course of several years. During that time, it is possible for the DOP to continue to monitor the actual pay comparison, study labor market pay practices, consider potential budgeting control points and examine pay administration policies in order to assure that the actual compensation package received by state employees is competitive with the labor market.

As stated in last year's audit response, "equal pay for equal work" is a constitutional requirement. Geographical pay is not allowed. Approximately 80 percent of the state workforce is in the Front Range area. This is the main reason why the market areas chosen for the State of Colorado are the Denver metro

and the 20-county Front Range areas. Unless the Constitution is changed, the DOP legally must continue to provide only one pay range for each state class throughout the State of Colorado.

Summary of Findings and Recommendations

Overall, we have found the DOP to be consistent from year to year in its interpretation and application of data and information during the survey process. The DOP does a detailed and thorough job of analyzing the data it collects. As in prior audits, we believe that some of the processes used in the Department's analyses are not delivering the desired results. As with our 1999 audit, we have found the DOP's analyses and reports to be detailed and comprehensive; however, we believe opportunities exist to go beyond just maintaining the integrity of valid salary and benefit findings and recommendations. We believe there are opportunities for the DOP to invest fewer resources in its survey process while still delivering an equally valid result.

The State operates under a "market-based" approach to pay and consequently, many of our recommendations focus on improving the link between the survey effort, the data produced, the labor market's behavior, and the State's compensation programs and plans. Our continued theme, as in prior audits is one of "opportunities for simplification of the process," thereby giving the DOP more opportunity to perform other value-added activities.

□ **Recommendation 1.1 The DOP should continue using its current job matching process.**

Overall, the DOP's matching and market values are very consistent with Buck's independent market pricing effort. Most matching differences between Buck and the DOP resulted from questions as to the level of a particular class or the use of different survey sources. In our opinion, this is an activity in which the DOP demonstrates excellent aptitude and consistency from year to year.

□ **Recommendation 1.2 The DOP should continue to utilize its method of aging market survey data.**

The DOP employs a method of aging market data that utilizes Employment Cost Index data from the previous one-year period. The method used by the DOP uses the following method:

$$[(\text{survey wage rate}) \times (\text{difference between target date and survey date in months}) / 12$$

$$\times (\text{most recent twelve-month cost of labor increase from the Employment Cost Index})].$$

This method accurately tracks market trends and is widely accepted and used by compensation practitioners nationwide.

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- **Recommendation 1.3** **The DOP should purchase and utilize annual pay range movement surveys that are specifically intended to provide the recommendations that the DOP makes each year.**

This is a recommendation we believe presents tremendous opportunity for time and cost savings to the State. The DOP currently conducts its analyses for pay range adjustments through a time-consuming and exhaustive procedure. Although the data the DOP collects and analyzes are relevant, very similar data with as high a degree of precision exist in published sources. The DOP collects surveys of this nature; however, staff use these surveys as only a validation tool against their own findings. Using these sources would significantly reduce the time, effort, and expense associated with gathering and analyzing data. Using these sources would in no way compromise the integrity or validity of the resulting recommendations. Efforts formerly directed at this procedure could be redirected toward more productive and valuable activities. We frequently utilize surveys of this type and find them to be statistically valid; furthermore, these surveys are accepted by compensation practitioners in both public and private organizations across the nation and can be analyzed in significantly less time than the time currently devoted to projecting pay increases for each occupational group.

- **Recommendation 2.1** **The DOP should continue to expand its effort to collect actual pay data on a greater number of positions at the State.**

In a typical market-driven system, we would expect to see market data collected on more than 50 percent of an organization's jobs/positions. The DOP has gathered market data on approximately 36 percent of the 619 classes used by the State. Although this number is an increase from our last audit and is adequate for "benchmarking" purposes, it is not consistent with a "market-driven" approach to managing pay. We believe that the DOP could gather valid data on between 50 percent and 80 percent of state jobs using readily available, published survey sources. We note; however, that this recommendation can not be implemented without the use of national survey data.

- **Recommendation 2.2** **The DOP should conduct a detailed survey of pay practices for approximately one-third of its benchmark jobs each year.**

Our opinion continues to be that the DOP's current effort to collect data on a large number of jobs in order to predict "across-the-board" pay adjustments creates an extensive amount of work for the result needed. There are simpler methods to acquire similar data that are significantly less labor-intensive and produce equally valid results. As with our prior audit efforts, we continue to recommend the DOP conduct a detailed survey of pay practices for approximately

one-third of its benchmark jobs each year. Numerous organizations throughout the State and across the nation with large numbers of jobs review one-third or one-half of their jobs every year so that all jobs will be examined at least every two or three years.

□ **Recommendation 3.1 The DOP should continue to broaden its survey sources.**

The DOP utilized 48 surveys in its most recent analyses; however, these survey sources represent only 11 distinct publishers. We believe the DOP can increase its average number of matches per class code and thereby increase the validity and accuracy of its market trend data if it were to broaden its survey sources. Some outstanding surveys are excluded by the DOP because pay range information is not available. Eliminating this criterion for survey selection would add useful surveys to the DOP inventory.

□ **Recommendation 4.1 The DOP should discontinue its practice of setting market-driven pay range widths by occupational classification.**

The DOP should set pay range widths by level within the organizational hierarchy rather than functional responsibility. This is not a time-intensive activity and is a common practice that uses simple methods and logic to determine pay range widths.

□ **Recommendation 4.2 The DOP should use published market data to determine the appropriate target bonus level for groups of classes.**

We believe the DOP should identify common bonus percentage amounts across all occupational categories. The intent is that the level of job (i.e., non-exempt status) should receive the same percentage opportunity in every occupational class.

□ **Recommendation 5.1 Based on the assessment of surveys and processes used to analyze the State's non-cash survey review we believe the DOP should continue its analysis of non-cash rewards using a "cost-based" model.**

Our findings indicate the DOP has adopted Buck's recommendation from the last audit in 1999. The DOP uses a survey process that considers the "cost" of the prevailing employer contribution level for all applicable benefit plans. This is an enhancement to the survey process in which the previous method was to define "prevailing" as more than 50 percent of companies offering a specific benefit.

Summary of DOP responses to audit recommendations:

In summary, Buck Consultants has provided nine recommendations to the DOP in this performance audit. The DOP agrees with six of the recommendations and partially agrees with the remaining three recommendations. A summary of the DOP's responses is located in the Recommendation Locator found in Section II. The Recommendation Locator summarizes Buck Consultants' recommendations, as well as the DOP's response to each, the target implementation date, and the page number where more specific information on the recommendation and response can be found.

II. Recommendation Locator

Recommendation		BuckConsultants' Recommendation	Department of Personnel's Response	Target Implementation Date
No.	Page			
1.1	14	The DOP should continue using its current job matching process.	Agree	Ongoing
1.2	15	The DOP should continue to utilize its method of aging market survey data.	Agree	Ongoing
1.3	21	The DOP should purchase and utilize annual pay range movement surveys that are specifically intended to provide the recommendations that the DOP makes each year.	Partially Agree	July 2001 and Ongoing
2.1	25	The DOP should continue to expand its effort to collect actual pay data on a greater number of positions at the State.	Agree	Ongoing
2.2	25	The DOP should conduct a detailed survey of pay practices for approximately one-third of its benchmark jobs each year.	Partially Agree	Ongoing
3.1	28	The DOP should continue to broaden its survey sources.	Agree	Ongoing

Recommendation		BuckConsultants' Recommendation	Department of Personnel's Response	Target Implementation Date
No.	Page			
4.1	30	The DOP should discontinue its practice of setting market-driven pay range widths by occupational classification.	Partially Agree	July 2003
4.2	31	The DOP should use published market data to determine the appropriate target bonus level for groups of classes.	Partially Agree	July 2003
5.1	33	Based on the assessment of surveys and processes used to analyze the State's non-cash survey review we believe the DOP should continue its analysis of non-cash rewards using a "cost-based" model.	Agree	Ongoing

III. Description of Audit Focus

Section 24-50-104(4)(b), C.R.S, requires the Colorado Office of the State Auditor to contract with a private firm to conduct a performance audit of the Department of Personnel's (DOP) annual survey of salary and fringe benefits. The State has contracted with Buck Consultants to conduct the Fiscal Year 2001 performance audit. Audit results must be submitted to the General Assembly and the Governor by June 30th on a biennial basis.

The objectives of this performance audit are to audit the Department's procedures and application of data regarding the annual Total Compensation Survey and to:

- Review data to verify the results.
- Review surveys to ensure their appropriate use and application in terms of designing the State's wage structure.
- Examine benchmark data to discern appropriate placement of job classes, as well as adequate representation of all state jobs.
- Review the DOP's methodological assumptions to ensure their appropriate application.

IV. Findings, Recommendations, and Department of Personnel Responses

Topic 1: Market Pricing Analysis

This activity focuses on the selection and use of market data for benchmark positions. To assess the DOP's selection and use of market data in its 2001 Total Compensation Survey, we conducted an independent market pricing effort on selected jobs to:

- ❑ Assess the appropriateness of the matches to survey positions and compare the findings, including market values.
- ❑ Assess the data aging methods.
- ❑ Review the relevance of data elements collected.

Objective #1: *Assess the appropriateness of the matches to survey positions and compare the findings, including market values.*

Activities:

- ❑ We selected approximately 22 percent of DOP benchmark positions, representing a cross-section of occupational groups and levels. These are referred to as Buck Benchmarks.
- ❑ We reviewed the State's class series descriptions.
- ❑ We independently matched all Buck Benchmarks with comparable positions from available survey sources (only those used by the DOP) and collected the same data elements collected by the DOP.
- ❑ We created market composites for each Buck Benchmark by calculating a simple average of all individual matches.
- ❑ On a parallel track, we created a composite for each of these Buck Benchmarks using data collected by the DOP.
- ❑ We compared Buck's composite 50th percentile with that of the DOP to determine matching integrity.

Findings:

- ❑ Overall, the DOP's matching and market values are very consistent with Buck's independent market pricing effort.
- ❑ We found a greater than plus or minus 10 percent difference of market values for 8 percent of the Buck Benchmarks used in this analysis. This level of discrepancy is what we would expect given the fact that Buck did not have detailed discussions with the DOP regarding the State's class series descriptions.
- ❑ Each matching difference we observed resulted from questions as to the level of a particular class or the use of different survey sources.
- ❑ A chart entitled, "Job Matching Audit," with the above findings can be found in Appendix A.

Recommendation 1.1:

- ❑ The DOP should continue using its current job matching process.

DOP Response: Agree.

Objective #2: Assess the data aging methods.

Activities:

- ❑ We analyzed the DOP's description of the process used to develop aging factors.
- ❑ We compared this process with best practices of compensation practitioners.

Findings:

-
- ❑ The DOP employs a method of aging market data that utilizes Employment Cost Index data from the previous one-year period. The method utilized by the DOP uses the following method: [(survey wage rate) X (difference between target date and survey date in months)/12 X (most recent twelve month cost of labor increase from the Employment Cost Index)].
 - ❑ The DOP's method of aging market data is consistent with the current labor markets trends rather than smoothing out fluctuations seen in the market over a longer period of time.
 - ❑ This method is used by most compensation practitioners and is considered statistically valid and proper.

Recommendation 1.2:

- ❑ The DOP should continue to utilize its method of aging market survey data.

DOP Response: Agree.

Objective #3: Review the relevance of data elements collected.

Activities:

- We reviewed all data elements collected by the DOP in its 2001 Total Compensation Survey.
- We compared these data elements with the typical data elements gathered and used by compensation practitioners.
- We assessed the effort required to collect all data elements against the value it provides.

Findings:

- The DOP gathers range midpoint rates to calculate the difference between the prior year rate and the current year rate for every surveyed job.
- The DOP gathers range minimums and range maximums to calculate the market-driven pay range for each occupational group.
- Given the methods currently used by the DOP for calculating pay range width, we believe the data elements collected are appropriate.

FINDINGS, RECOMMENDATIONS, AND DEPARTMENT OF PERSONNEL RESPONSES
TOPIC 1: MARKET PRICING ANALYSIS

SECTION IV

The following chart compares published structure movement data against the DOP’s recommended pay range adjustments for the last four years. It is evident that both processes tend to produce similar aggregate results. This chart was developed using data from one survey which summarizes trends in pay structure movement. It is included merely as an illustration of an alternative method of calculating pay range adjustments. Although this was a limited example utilizing only one published source, this method can still be used in an expedient manner with multiple published sources.

It should be noted that the 2001 comparisons are noticeably different. DOP recommended structure adjustments are consistently higher relative to our data source. Turnover in last year’s survey participants or stronger than normal market adjustments due to recent influx of technology firms in the Front Range area are possible explanations. It is prudent to monitor these data points next year to determine whether a trend is developing or whether the 2001 data are just representative of an anomaly in the marketplace.

Pay Structure Movement								
Occupational Group	2001		2000		1999		1998	
	Published	DOP	Published	DOP	Published	DOP	Published	DOP
Administrative Support and Related	3.2%	4.2%	3.1%	3.9%	3.0%	5.0%	3.0%	2.5%
Enforcement and Protective Services	3.2%	5.7%	3.1%	4.5%	3.1%	2.5%	3.5%	7.5%
Financial Services	3.3%	3.1%	3.3%	5.3%	3.0%	2.5%	3.2%	2.5%
Health Care Services	2.9%	5.2%	2.9%	2.3%	2.8%	2.5%	2.8%	2.5%
Labor, Trades & Crafts	3.1%	4.8%	3.1%	3.7%	3.1%	5.0%	3.1%	2.5%
Management	3.3%	5.0%	3.2%	3.0%	3.1%	2.5%	3.1%	5.0%
Medical*	----	5.2%	----	2.3%	----	2.5%	----	1.2%
Physical Sciences and Engineering	3.3%	5.7%	3.3%	4.6%	3.3%	5.0%	3.5%	5.0%
Professional Services	3.2%	5.0%	3.1%	3.0%	3.3%	2.5%	3.2%	5.0%
Teacher	3.0%	3.6%	2.9%	3.1%	2.4%	2.5%	2.7%	2.5%
Average	3.2%	4.7%	3.1%	3.6%	3.0%	3.3%	3.1%	3.6%

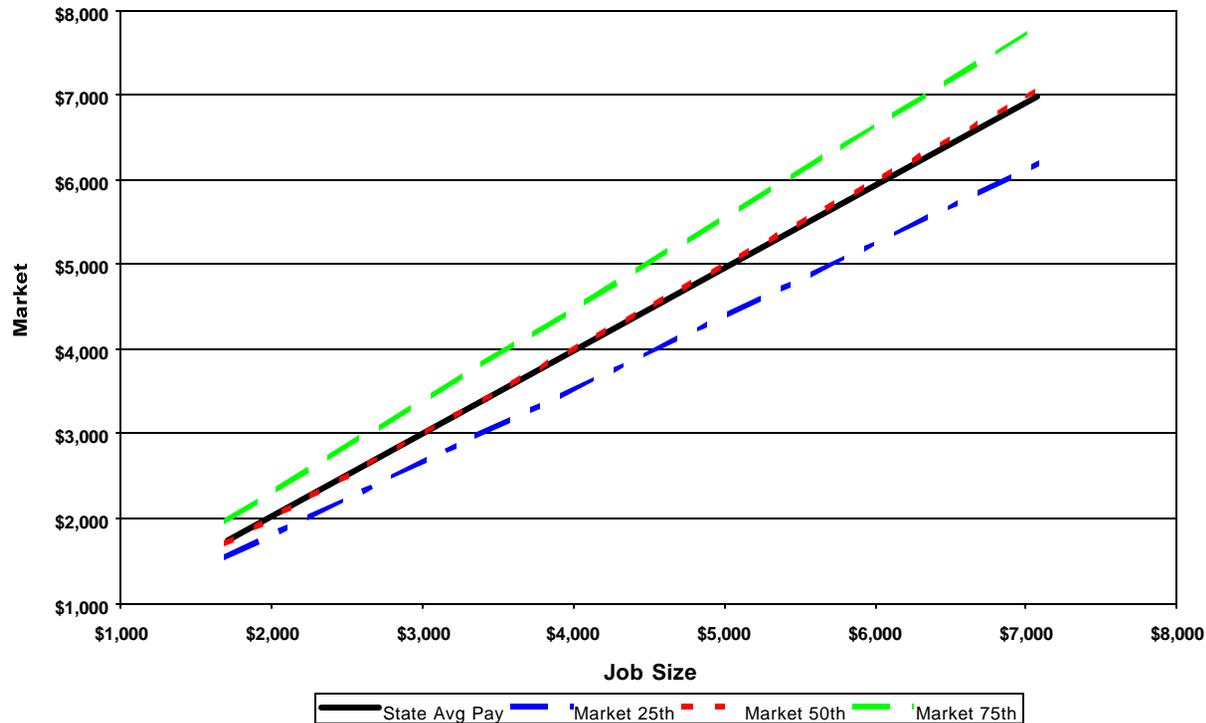
Source: William M. Mercer Comp Planning

DOP 2001 Total Compensation

*Data for this group could not be obtained from our source; we would recommend a special survey for this group.

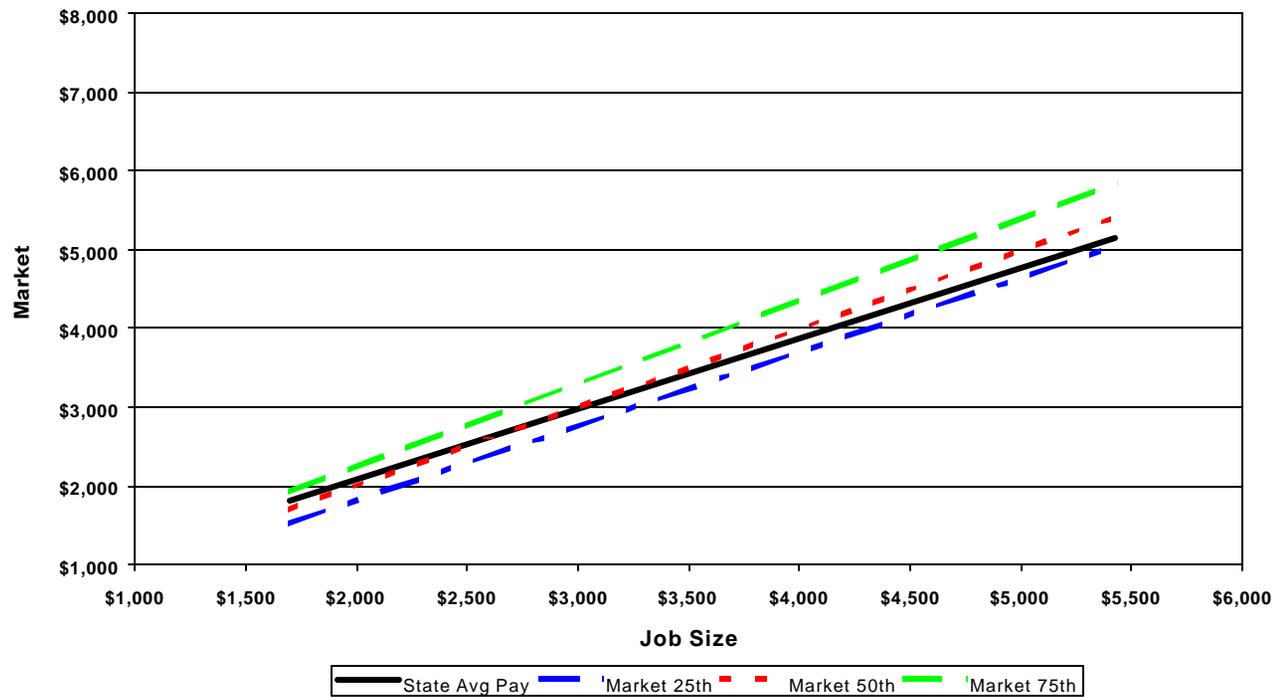
Using regression the following charts illustrate overall market competitiveness by utilizing actual pay for both the State as well as its labor market. The market 25th percentile composite, market 50th percentile composite, and market 75th percentile composite are displayed against the State's 2001 actual pay rates. The market composites represented in these charts are the Buck Benchmarks. An organization with a philosophy to be market-driven and that defines its market as the median (or 50th percentile) should strive to have its actual pay line be identical to the market 50th.

State of Colorado vs. Market



As this chart indicates, on an overall basis (shown as the State of Colorado vs. Market Data), the State’s pay line is generally at the market 50th percentile across all pay levels.

Health Care Services vs. Market



In the other example shown (e.g., the health care services occupational group), there is a greater variance from the market. At the lower end of the pay scale, the State pays slightly above the market 50th percentile. The State's pay decreases below the 50th percentile as job size rises.

Recommendation 1.3:

- We reiterate our recommendation from prior year audits that the DOP purchase and utilize annual pay range movement surveys that are specifically intended to provide information for the recommendations that the DOP makes each year. Although the data the DOP collects and analyzes now are relevant, very similar, equally precise data exist in published surveys. We frequently utilize surveys of this type and find them to be statistically valid; furthermore, these surveys are accepted by compensation practitioners in both public and private organizations across the nation and can be analyzed in significantly less time than the time that is currently devoted to projecting pay increases for each occupational group. If the DOP believes in maintaining its current methodology and using our recommendation only as a supplement, we believe the result will be a significant increase in the time, effort, and expense associated with gathering and analyzing data.

DOP Response: Partially agree. As we stated in the past, there are several missions that the DOP is expected to accomplish through the total compensation survey. A recommendation for ten occupation groups within the system is only one of the missions. The DOP uses the survey sources to evaluate market pay comparison for individual jobs surveyed. As Buck Consultants recommended (2.2), the DOP uses this approach to conduct a detailed pay comparison for all benchmark jobs included in each survey cycle. In addition, as part of its statutory responsibility, the DOP conducts a special total compensation study for state troopers and periodic system maintenance studies in order to assure both internal and external alignments. The detailed pay information provided from the third-party surveys is one primary source for the external alignments. Finally, benefit comparisons also are one major component of the total compensation study.

Staff collects and uses third-party survey data for multiple compensation and job evaluation purposes. Even if the DOP agrees with the recommendation of using surveys reporting only market movement to make overall group recommendations, the DOP is still required to collect detailed information to accomplish other equally important functions. Staff spends approximately three months in conducting the annual total compensation study. About one-third of the time is spent to derive the ten occupational group recommendations. Based on the staff time and the cost in purchasing the third-party surveys, the DOP spent approximately \$9,500 in deriving the recommendations for the ten occupational market adjustments. The other two-thirds of cost is spent on individual job evaluation, trooper total compensation comparison, benefit evaluation, and system maintenance studies.

It is noted that there are different interest groups and employee organizations that require the DOP to justify survey recommendations in great detail. Failure to do so may trigger litigation with potentially substantial cost. For example, there are at least four pending court cases where employees challenge the DOP's pay setting through system maintenance studies. There is a court case involving benefits (e.g., injury leave). It is critical that the DOP maintains a position of being able to verify data and to defend its recommendations instead of relying on an overall estimation from third-party organizations where detailed data verification is not accessible.

Topic 2: Benchmark Analysis

This activity focuses on the benchmarks used by the DOP in assessing competitiveness.

Objective #1: Assess the DOP benchmarks for criteria of strong benchmark representation. These criteria include:

- Market comparability: Selecting positions that are commonly found in other organizations.
- Organizational hierarchy: Selecting positions that represent the full range of size of positions across the State’s job hierarchy.
- Employee representation: Selecting positions that represent large numbers of employees whenever possible.
- Cross-functional representation: Selecting positions that represent all of the functions within the State, from human resources to finance to parks and recreation.

Activities:

- We reviewed the list of state classes for which the DOP was able to collect market data.
- We reviewed the list of classes that the DOP used as benchmarks against the above criteria. DOP benchmarks are classes that were actually utilized to calculate the recommended pay range adjustments.

Findings:

- From DOP-provided employee data, we calculated 619 state classes with employee representation.
- 225 of the 619 classes were utilized in the final analysis for recommending pay range adjustments because the 225 classes satisfied the DOP practice of utilizing a sufficient survey sample of Priority 1 (Front Range) market data.

The following chart displays, by occupational group, the total number of state jobs and the number ultimately used as DOP benchmarks.

Benchmark Analysis			
Occupational Group	Total Jobs*	DOP Benchmarks	% of Total
Administrative	56	28	50%
Enforcement/Protective Services	62	7	11%
Financial	70	23	33%
Health Care	149	49	33%
Labor, Trades, Crafts	76	51	67%
Physical Sciences & Engineering	62	24	39%
Professional Services	140	42	30%
Teachers	4	1	25%
Totals	619	225	36%
Source: DOP data. *Positions with employees			

- Given the criteria for strong benchmark representation, the DOP has done a good job of selecting appropriate benchmarks. In addition, the DOP has demonstrated a significant increase in the number of benchmarks utilized in its analysis since the last audit of survey procedures and is more closely aligned with our prior recommendations of attaining a 50 percent benchmark representation.

Recommendation 2.1:

- We recognize the DOP has made significant improvements in the number of benchmarks it gathers and analyzes in the survey process. We reiterate our recommendation from the last audit and recommend the DOP continue to expand its data collection efforts by gathering market data on a greater number of positions. In this most recent survey effort, the DOP has gathered market data on approximately 36 percent of the 619 classes used by the State. We understand that the State seeks a pay system "driven" by the market. In a typical market-driven system, we would expect to see market data collected on more than 50 percent of an organization's jobs/positions. Collecting data on only 36 percent of the State's jobs is not consistent with a strategy to be "market-driven" and may result in non-competitive wages for jobs that are not part of the benchmark pool. We believe that the DOP could gather valid data on 50 to 80 percent of state classes using readily-available, published survey sources.

DOP Response: *Agree. The DOP will continue to make efforts to review and purchase more third-party surveys in order to collect market data for a greater number of state classes; however, the DOP needs to be judicious about the cost/benefit of purchasing more surveys. The DOP will keep track of the cost incurred and the number of new state classes matched from the new surveys in order to determine the cost/benefit.*

Recommendation 2.2:

- Our opinion continues to be that the DOP's current effort to collect data on large numbers of jobs in order to predict "across-the-board" pay adjustments is an extensive amount of work created for the result needed. There are simpler methods to acquire similar data that are significantly less-labor intensive and produce equally valid results. As with our prior audit efforts, we continue to recommend the DOP conduct a detailed survey of pay practices for approximately one-third of its benchmark jobs each year. Numerous organizations throughout the State and across the nation with large numbers of jobs review one-third or one-half of their jobs every year so that all jobs will be examined at least every two or three years.

DOP Response: Partially agree. The DOP agrees that a detailed study of pay practices for state jobs is important; however, as noted in the response to Recommendation 1.3, in the annual total compensation survey process, the State will collect occupation-specific data to measure pay structural adjustments for each occupational group. In addition, the DOP, in accordance with published survey procedures, continues to collect labor pay rates with each individual matched state class in order to compare pay rates for an individual job basis. This is a very critical issue with state employees. Most employees understand the range adjustment recommendations made for different occupational groups; however, what is more critical to state employees is the statutory requirement of how their pay rates are compared with the market for the jobs they occupy. Detailed surveys for one-third of the state's benchmark jobs each year could mean that some state jobs (if not surveyed in a specific year) may not be identified and adjusted for three years. This could be very disruptive to the state's work force. The DOP chooses to spend the time to do this pay comparison for all jobs found in the third-party surveys in order to provide a competitive (either adjusting upward or downward) pay package for individual state classes. In this way, the DOP can continuously monitor market data to perform trend analyses to ensure the stability of its market comparison.

Topic 3: Salary Survey Data Sources

This activity focuses on the sources of data used by the DOP to maintain the salary program.

Objective #1: *Review the DOP's processes to ensure that the surveys chosen by the DOP were the ones that should have been chosen to identify a comparable compensation package.*

Activities:

- We assessed the sources of data used by the DOP in its 2001 Total Compensation Survey against various criteria including a variety of survey publishers, the stability of databases represented by surveys, and the market and geographic relevance of survey sources.

Findings:

- The 48 surveys utilized by the DOP are reliable, industry-respected surveys. These sources represent 11 distinct publishers. These 48 surveys represented both compensation and benefits data.
- As with our audits in prior years, we believe there is opportunity for the DOP to gather more wage data by utilizing other salary surveys that are reliable, industry-respected sources commonly utilized by compensation practitioners. These include William M. Mercer's Human Resources Management, Information Technology, and Materials & Logistics Survey/Report; Watson Wyatt's Middle Management Report; Dietrich's Support Services Survey; and Towers Perrin Report on Middle Management.
- On average, the DOP used slightly more than two survey sources per class to calculate the recommended pay range adjustments. This finding is a direct result of the statutory Priority 1/Front Range data requirement that states if a sufficient survey sample is obtained according to DOP definitions, there is no need to include additional data from Priorities 2 through 4. Priorities 2 through 4 include statewide, multi-state region, and national.
- We conclude that the average number of survey sources used per class to recommend pay range adjustments is adequate; however, we believe the DOP should strive for an average of three or more survey matches where there is opportunity to expand the number of sources utilized.

- The variety of survey publishers used by the DOP is adequate, but including surveys with national (not Front Range) data and adjusting the data to the Front Range would increase the possible number of benchmarks.

Recommendation 3.1:

- We recommend the DOP broaden its survey sources by including salary surveys such as those listed in the *Findings* of **Topic 3**. By utilizing more surveys in the analysis, we believe the DOP can increase its average number of matches per class code and therefore increase the validity and accuracy of market trends. We understand this recommendation is predicated upon the DOP's use of geographic pay differentials to analyze pay data.

DOP Response: Agree. Please refer to response to Recommendation 2.1.

Topic 4: Analytical Techniques Review

With this effort we have focused on the DOP's application of survey data.

Objective #1: Ensure the DOP is utilizing sound analytical techniques in assessing its surveying processes.

Activities:

- We reviewed the processes the DOP uses to calculate market adjustments and market-driven pay ranges against industry "best practices" and the implied versus actual precision they provide.

Findings:

- Overall, our conclusion is similar to past audits in that the DOP spends a large amount of time analyzing the tremendous amount of data it collects. We believe that this time is not proportional to the value it adds and, in fact, only shifts the focus away from the primary goal, which is determining competitive actual pay.
- In determining the market adjustments for each occupational group, the DOP utilized a prior year recommendation to suspend its practice of rounding the actual percentage increase it calculates to the nearest 2.5 percent increment. This is an improvement to the DOP's analytic techniques because the process of rounding could result in a discrepancy in any direction in any given year resulting in an over- or under-allocation of salary funds.
- Based on a newly designed pay range system, a range will include two control points: minimum and maximum (former traditional maximum). Both minimum and maximum rates will be adjusted by the recommended survey percentage for each occupational group. This new method suspends the DOP's use of a job rate acting as the maximum of the pay range; however, as we noted in our last audit, we believe there is an inherent flaw to this approach. Because of the DOP's practice of averaging range widths for various levels of positions, it is likely that the pay opportunity for higher level positions is being diluted by lower level positions. In determining a market driven pay range, our experience shows that most organizations set their pay range widths to reflect the amount of time needed for an incumbent to become fully proficient in the responsibilities of the position. For example, a typical organization may have 15 pay ranges. Ranges 1 – 5 could have a range spread of 40 percent, ranges 6 – 10 could have a range of 50 percent and ranges 11 – 15 could have a range spread of 60

percent. In this example the organization recognizes the fact that at lower grade levels the range of pay opportunity and learning curve is smaller and both increase as an employee moves up through the pay structure. This example is representative of typical market-driven industry practice.

- Most market-driven organizations distinguish target bonus levels by job size and contribution level rather than the DOP's current practice of using base pay range widths. For example, in the same typical organization as mentioned earlier with 15 pay grades, it would not be uncommon to see the bonus opportunity at 5 percent of base salary for the lower pay grades and increase to 10 percent of base salary at the higher pay grades. This reflects the idea that the contribution level and the span of control at the lower pay grades is smaller than at the higher pay grades.

Recommendation 4.1:

- The DOP should discontinue the practice of setting market-driven pay range widths by occupational classification. The DOP should set pay range widths by level within the organizational hierarchy rather than functional responsibility. It is not a time-intensive activity and is a common practice that uses simple methods and logic to determine pay range widths.

DOP Response: *Partially agree. The DOP recognizes that pay range width may vary for various levels of jobs as well as jobs with different functional responsibilities; however, as the State is entering into a new pay for performance system where a maximum rate (old traditional maximum rate) is used to cap the base pay for employees, a change of pay range width by level within the organizational hierarchy may be inconsistent with the uniform requirements for the State's performance pay system. The DOP will continue to examine this issue and to explore how to incorporate this recommendation with the requirements and implementation of a new performance pay system.*

Recommendation 4.2:

- We recommend the DOP use published market data to determine the appropriate target bonus level for groups of classes. This can be accomplished by utilizing broad, lump-sum incentive pay data (such as compensation planning surveys conducted by third-party administrators) grouped by the three job categories of non-exempt, exempt, and management personnel. As was pointed out in our last audit, we believe the DOP should identify common bonus percentage amounts across all occupational categories. The intent is that the level of job (i.e., non-exempt status) should receive the same percentage opportunity in every occupational class. This process is widely accepted and utilized by compensation practitioners when approximating target bonus percentages. The following example is a common and simple model used in today’s marketplace:

Example

<u>Job Level</u>	<u>Incentive Target</u>
Non-exempt	0 – 5%
Exempt	0 – 8%
Management	0 – 10%

DOP Response: Partially agree. As stated in Recommendation 4.1, the State is entering into a new performance pay system where a uniform bonus percentage level is the maximum percentage allowed for awarding any top performers. This uniform bonus percentage is a policy decision that the state made when the new performance pay system was designed and submitted to the Joint Budget Committee. The DOP will continue to monitor the utilization of this bonus value when the new performance pay system is fully implemented.

Topic 5: Non-Cash Survey Review

This effort focused on the evaluation of the DOP's survey of non-cash compensation elements including typical benefits and paid time off.

Objective: #1 *Assess surveys, findings, and recommendations by the DOP with regard to non-cash benefits.*

Activities:

- Buck Consultants reviewed the surveys used to analyze state benefits.
- Buck Consultants also reviewed the findings and recommendations in each benefit area.
- Buck compared the survey findings with broad benefit practices reported in national surveys of benefit practices.

Findings:

Our findings indicate the DOP has adopted Buck's recommendation from the last audit in 1999. The DOP uses a survey process that considers the "cost" of the prevailing employer contribution level for all applicable benefit plans. This is an enhancement to the survey process in which the previous method was to define "prevailing" as more than 50 percent of companies offering a specific benefit. It appears that the State now considers the "value" an employee receives in determining whether non-cash benefits are competitive.

- The DOP measures practices and applies a weighted average approach (using number of firms as the weighting factor) to measure competitive employer contribution levels for all applicable benefit plans.
- The DOP has expanded its benefit data sources. Historically, the primary data source for market comparison was the Mountain States Employers Council. To improve the survey process, the DOP now includes data from the Colorado Municipal League in its benefit comparison.
- The surveys used provide comprehensive and credible information regarding current benefit expenses and practices in the Colorado marketplace.

-
- ❑ If the State's desire is to pay the same cost of health care premium as is most common in the marketplace, then the DOP's recommendations are generally consistent with this goal.
 - ❑ If the State's goal is to provide a competitive (i.e., median or middle of the market) benefit package in total (viewed as a cost to the employer), then current survey analysis techniques support the achievement of this goal.
 - ❑ The DOP's current process used to analyze non-cash compensation gives the State the flexibility to manage benefits as a total package and adjust as needed to remain competitive.

Recommendation 5.1:

- ❑ Based on the assessment of surveys and processes used to analyze the State's non-cash survey review we believe the DOP should continue its analysis of non-cash rewards using a "cost-based" model.

DOP Response: Agree.

Topic 6: Prior Year Recommendations

This effort focused on the recommendations previously presented to the DOP in our last audit (1999) and an analysis of the extent to which they were implemented. Overall, our 1999 audit made 11 recommendations. Of the eleven recommendations, we have concluded that four were fully implemented, two were not implemented, four were partially implemented, and one in no longer applicable due to changes in the State's compensation program.

Recommendation 1.1:

- The DOP should continue using its current job matching process.

Consultant's Analysis:

- **Implemented.**

Recommendation 1.2:

- The DOP should continue to utilize its new method of aging market survey data.

Consultant's Analysis:

- **Implemented.**

Recommendation 1.3:

- The DOP purchase and utilize annual pay range movement surveys that are specifically intended to summarize the exact recommendations that the DOP makes each year. Although the data the DOP collects and analyzes now is relevant, very similar data with as high a degree of precision exists in published surveys. Using these surveys would significantly reduce the time, effort, and expense associated with gathering and analyzing data. Using these surveys would in no way compromise the integrity or validity of the resulting recommendations. Efforts formerly directed at this effort could be redirected toward more productive and valuable activities. We frequently utilize surveys of this type and find them to be statistically valid; furthermore, these surveys are accepted by compensation practitioners in both public and private organizations across the nation and can be

analyzed in significantly less time than is currently devoted to projecting pay increases for each occupational group.

Consultant's Analysis:

- **Partially implemented.** The DOP has utilized the recommended surveys in an effort to check and validate its own analyses. In our opinion, the intent of our recommendation has not been fully implemented and as a result, the DOP still expends considerable time and effort to generate results that are readily available in published surveys.

Recommendation 2.1:

- We reiterate our thoughts from 1998 and recommend the DOP expand its data collection efforts by gathering market data on a greater number of positions. In this most recent survey effort, the DOP has gathered market data on approximately 26 percent of the 722 classes used by the State. This number is adequate for a compensation system that relies on both market data and internal equity, but it is Buck's understanding that the State seeks a pay system "driven" by the market. In a typical market-driven system, we would expect to see market data collected on an excess of 50 percent of an organizations jobs/positions. Collecting data on only 26 percent of the State's jobs is not consistent with a strategy to be "market-driven" and may result in non-competitive wages for jobs that are not part of the benchmark pool. We believe that the DOP could gather valid data on up to 80 percent of State classes using readily available, published survey sources.

Consultant's Analysis:

- **Partially implemented.** The DOP did increase its survey sample and the number of actual classes matched. In the 2001 survey the DOP collected data on approximately 36 percent of the 619 classes used by the State. Buck still believes it is possible for the DOP to increase this percentage in future surveys.

Recommendation 2.2:

- Assuming the DOP agrees with Recommendation 1.3, we recommend the DOP conduct a detailed survey of pay practices for approximately one-third of its benchmark jobs each year. Many organizations with large numbers of jobs review one-third of their jobs every year so that all jobs will be examined at least every three years. The current comprehensive efforts to collect data on large numbers of jobs in order to predict “across-the-board” wage adjustments are overly involved for the result needed. There are simpler methods to acquire similar data that are significantly less labor intensive and will produce equally valid results. In addition, reducing the frequency of the broad effort would complement the decision to conduct the survey on a biennial basis.

Consultant’s Analysis:

- **Not implemented.** This recommendation was contingent upon the DOP utilizing published range movement data to determine occupational group movement. Since the DOP has not adopted our range movement recommendation, we would not have expected them to adopt Recommendation 2.2.

Recommendation 3.1:

- We again recommend the DOP broaden its survey sources by including salary surveys such as those listed in the *Findings* of **Topic 3**. We understand this recommendation is predicated upon the DOP’s acceptance of our proposed analytic technique found in **Topic 4**.

Consultant’s Analysis:

- **Partially implemented.** Although the DOP did increase the number of surveys gathered this year, it continues its policy of excluding survey sources that do not provide range information. We believe this policy prevents the DOP from gathering substantial and pertinent data.

Recommendation 4.1:

- Regardless of whether the DOP adopts Buck’s Recommendation 1.3 (using annual pay range movement surveys to determine market adjustments), we recommend the DOP discontinue its practice of “rounding” to the nearest 2.5 percent increment in determining market adjustments. Rather, the DOP should recommend to the State a percentage that is rounded to within 0.25 percent of the exact percentage of market adjustment determined from its analysis.

Consultant’s Analysis:

- **Implemented.**

Recommendation 4.2:

- The DOP should discontinue the practice of setting market-driven pay range widths by occupational classification. The DOP should set pay range widths by level within the organizational structure hierarchy rather than functional responsibility.

Consultant’s Analysis:

- **Not implemented.** The DOP agrees that pay range widths may vary for various levels of positions, but believes that it must identify all variables for all state jobs so that the pay range width for non-benchmark classes can be estimated.

Recommendation 4.3 (page 32):

- The DOP should use the actual 75th percentile to set Job Rates. Averaging the market actual 75th percentile for all positions within a pay grade does this. This average will become the control point (or job rate) for that particular grade. Then the DOP could use regression analysis to determine the formula to use in grades for which there are classes with no market data. This analysis would include State grades plotted on the X-axis vs. market 75th percentile plotted on the Y-axis producing a formula for the approximation of the market 75th percentile.

Consultant's Analysis:

- Recommendation is **no longer applicable** because under the new pay-for-performance system, job rates will no longer be included in the compensation plans.

Recommendation 4.4:

- We recommend the DOP eliminate the maximum of the pay range and treat the “control point” as the maximum. We also recommend the DOP use published market data to determine the appropriate target bonus level for groups of classes. This can be accomplished by utilizing broad, lump-sum incentive pay data (such as compensation planning surveys conducted by third-party administrators) grouped by the three job categories of exempt personnel, non-exempt personnel, and management personnel. This process is widely accepted and utilized by compensation practitioners when approximating target bonus percentages.

Consultant's Analysis:

- **Partially implemented.** Based on a newly created system, pay ranges will now include two control points: minimum and maximum (former traditional maximum). The State's bonus award amount is now calculated based on the Watson/Wyatt survey publications; however, no differentiation is used between job levels within and across occupational categories.

Recommendation 5.1:

- Buck Consultants were asked to suggest possible alternative analytical approaches to the State as it considers evaluating total compensation. As we considered what kind of approach might be both useful and realizable, we concluded that using a “cost-based” approach, rather than a “value-based” approach, would meet these criteria. The cost data are more readily available in current survey sources and where not directly available, the surveys provide adequate information to generate a reasonable estimate. The other way to approach this exercise is to use a “value-based” approach which would look more at the value that an employee obtains through the benefit and factor that into calculating the worth of compensation elements. The following reflects a “cost-based” way to evaluate total remuneration that will give the State a relatively accurate view of the

competitiveness of its total pay package. We believe that such an approach is worth the investment by the State and could easily be integrated into the existing “survey of surveys.” In fact, if some of our other recommendations were adopted, the time and resources devoted to the existing effort would, in our judgment, be better spent on this kind of an activity.

Consultant’s Analysis:

- **Implemented.** The DOP uses a survey process that considers “cost” of the prevailing employer contribution level for all applicable benefit plans. This is an enhancement in the survey process in which the previous method was to define “prevailing” as more than 50 percent of companies offering a specific benefit when considering the State’s benefit package.

APPENDIX A

JOB MATCHING AUDIT

Class	Title	Buck Mkt 50th	State Mkt 50th	% Diff *	Comments
B1A1	Accountant I	\$3,490	\$3,285	-6%	matches are consistent as are the market data
B1A4	Accountant IV	\$6,273	\$5,842	-7%	matches are consistent as are the market data
G3A4	Administrative Assistant III	\$2,894	\$2,902	0%	matches are consistent as are the market data
H2A5	Applications Programmer IV	\$6,123	\$6,230	2%	matches are consistent as are the market data
C2A1	Audio-Speech/Lang Spec I	\$3,858	\$3,885	1%	matches are consistent as are the market data
B2A2	Auditor I	\$3,884	\$3,586	-8%	matches are consistent as are the market data
B2A3	Auditor II	\$3,987	\$3,541	-11%	DOP matched this job slightly lower than Buck
C3B1	Central Services Tech I	\$1,702	\$1,721	1%	matches are consistent as are the market data
H6I1	Chaplain I	\$3,506	\$3,550	1%	matches are consistent as are the market data
C1A2	Clinical Therapist II	\$3,113	\$3,184	2%	matches are consistent as are the market data
G4A2	Collections Rep II	\$2,266	\$2,060	-9%	matches are consistent as are the market data
H6J3	Comp Insurance Spec II	\$4,404	\$4,330	-2%	matches are consistent as are the market data
G2A2	Computer Operator I	\$2,721	\$2,583	-5%	matches are consistent as are the market data
B1D1	Controller I	\$5,675	\$6,126	8%	matches are consistent as are the market data
D8B3	Custodian III	\$2,478	\$2,411	-3%	matches are consistent as are the market data
G2C3	Customer Support Coord II	\$3,621	\$3,602	-1%	matches are consistent as are the market data
G2D3	Data Entry Operator II	\$2,489	\$2,634	6%	matches are consistent as are the market data
C2B2	Dietitian II	\$3,096	\$3,095	0%	matches are consistent as are the market data
C3I1	EEG Technician	\$2,887	\$2,993	4%	matches are consistent as are the market data
I2B2	Electronic Engineer II	\$5,138	\$4,633	-10%	matches are consistent as are the market data
I5D3	Engr/Phys Science Tech III	\$4,007	\$4,166	4%	matches are consistent as are the market data
I3A6	Environ Protection Spec V	\$7,075	\$6,876	-3%	matches are consistent as are the market data
D7A1	Equipment Mechanic I	\$3,065	\$3,179	4%	matches are consistent as are the market data
D7A2	Equipment Mechanic II	\$3,249	\$3,095	-5%	matches are consistent as are the market data
H6M1	Food Service Manager I	\$4,733	\$5,070	7%	matches are consistent as are the market data
D8D1	General Labor I	\$1,865	\$2,010	8%	matches are consistent as are the market data
D8E1	Grounds & Nursery I	\$2,039	\$1,943	-7%	matches are consistent as are the market data
D9C2	Inspector II	\$3,818	\$3,704	-3%	matches are consistent as are the market data

APPENDIX A

JOB MATCHING AUDIT

Class	Title	Buck Mkt 50th	State Mkt 50th	% Diff *	Comments
H2I3	IT Professional I	\$4,322	\$4,050	-6%	matches are consistent as are the market data
H2I5	IT Professional III	\$5,735	\$5,848	2%	matches are consistent as are the market data
C4B2	Laboratory Assistant I	\$2,233	\$2,274	1%	matches are consistent as are the market data
H5E1	Legal Assistant I	\$3,374	\$3,285	-3%	matches are consistent as are the market data
D8G3	Materials Handler III	\$2,809	\$2,552	-9%	matches are consistent as are the market data
G3D1	Medical Records Tech I	\$2,165	\$2,096	-3%	matches are consistent as are the market data
C4C2	Medical Technologist I	\$3,454	\$3,457	0%	matches are consistent as are the market data
C3J1	Nuclear Medicine Tech	\$3,508	\$3,469	-1%	matches are consistent as are the market data
C6B2	Nurse II	\$3,733	\$4,471	20%	DOP matched this position at a higher level than Buck
C6E1	Nurse Practitioner I	\$5,157	\$5,196	1%	matches are consistent as are the market data
C1F1	Occp/Phys Therapist Asst I	\$2,557	\$2,459	-4%	matches are consistent as are the market data
C2H1	Pharmacist I	\$5,422	\$5,428	0%	matches are consistent as are the market data
G1A3	Police Communications Supv	N/A	N/A	N/A	matches are consistent
A4B4	Police Officer III	N/A	\$5,160	N/A	matches are consistent
I2C4	Professional Engineer I	\$4,512	\$5,573	24%	DOP matched this position at a higher level than Buck
C5F2	Psychiatric Care Tech I	\$1,947	\$2,014	3%	matches are consistent as are the market data
B2H2	Rate/Financial Analyst I	\$3,669	\$3,588	-2%	matches are consistent as are the market data
H6Q1	Records Administrator I	\$4,808	\$4,557	-5%	matches are consistent as are the market data
C3M1	Respiratory Therapy Tech	\$2,919	\$2,794	-4%	matches are consistent as are the market data
A4C3	Safety Security Officer III	\$4,349	\$4,518	4%	matches are consistent as are the market data
D8H1	Security I	\$1,891	\$1,729	-9%	matches are consistent as are the market data
D6E2	Utility Plant Operator II	N/A	\$3,561	N/A	matches are consistent

* We expect some variability here even if the matches are consistent. Normal variation caused by survey participation and other influences ranges from +/- 5% to +/-10%, depending on the “commonness” of the benchmark job.

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