Office of
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A Review of

Compensation Issues for State Professional Engineers

The Department of Human Resource Management's (DHRM's) survey of the state's Engineer III position raised questions as to the appropriateness of DHRM's survey techniques and how departments set salaries based on survey results. This survey, which was used to determine the need for a market comparability adjustment (MCA), adequately set the salary range for most of the state's Engineer III positions.

While the salary range adjustment appears correct, it has not been supported by a sufficient increase in funding. This failure has created a compression of salaries toward the lower end of the salary range and dissatisfaction among a number of incumbents. A survey alone cannot address the compensation issues faced by state agencies with Engineer III positions.

Though DHRM's original salary survey established an appropriate salary range, it did not target the best population match by distinguishing between professional engineers (PEs), those with a license, and other engineers. In the private sector, engineers commonly receive higher pay if they are professionally licensed.

DHRM's lack of clearly identifying PEs is, however, understandable because the state's practice has not been to require PEs for the Engineer III position. There is disagreement between the Engineer III job description requiring a PE license and the actual practice where Engineer IIIs are not all licensed. We question whether the PE should be required for some Engineer III positions.

It is clear that state agencies have and are under-filling some positions with non-fully qualified Engineer III incumbents and doing so with no apparent negative effects. Further, we are concerned with the classification of Engineer IIIs into one broad classification when there are very divergent responsibilities and market demands for the different types of engineers within the classification.

Figure 1 shows the number of affected state engineers in each of the three state agencies with Engineer III positions.

Figure 1. Engineer IIIs in the State System. Three state agencies have engineer positions that are non-supervisory but require professional licensure.

Department	Engineer III Incumbents[1]
Transportation	62
Environmental Quality	59
Natural Resources	17
Total	**138**

1 The number of incumbents refers to the number of Engineer IIIs employed by the state as of February 2002.

Through interviewing engineers, we found that in many instances the professional engineering (PE) certification is needed. Those individuals who do have the PE certification must have 4-5 years of experience working under another PE. Often, PE certified positions are responsible by contract or law for the design and review of public works projects and the sign off of various technical reports and documents.

Examples of public works projects that require a PE's signature include: bridge design, water treatment plant design, water treatment

plans, and radioactive waste disposal cell design. There are, however, Engineer III positions within the state system that do not need professional engineering certification or are managed by a PE capable of sufficiently reviewing the work performed. In most instances, engineers feel that the PE certification lends credibility when reviewing projects that may not otherwise need a PE's signature.

There is an inconsistency between the departments' position descriptions and the DHRM defined Engineer III classification. It is evident that Engineer III positions are quite different and are specialized, even within the individual divisions. It may not be possible to account for the high degree of specialization of each distinct position in a single job description.

DHRM Salary Range Is Competitive While Actual Salaries Are Not

The state's Engineer III salary range is comparable though actual average salaries are lower.

The Department of Human Resource Management's (DHRM) established salary range for the Engineer III position is comparable to the ranges of other government organizations in Utah as well as surrounding states. In addition, the state's salary range is also comparable to that of Utah's private sector engineer employers. While DHRM's published range is comparable, the actual salaries paid do not fair as well. In effect, the state has created a competitive range that, due to insufficient funds, neither reflects the actual compensation practices of the departments nor addresses the concerns of the position incumbents.

DHRM's Salary Survey Allows for a Salary Range That Is Competitive with Other Public Institutions

The Engineer III salary range set by DHRM appears to be a reasonable balancing of compensation paid by other in-state public institutions. The range is sufficiently broad to accommodate both new and experienced employees. The following figure compares several in-state public institutions for the Engineer III position.

Figure 2. State Engineer III's Actual Average Hourly Salary Is Lower Than Other Public Institutions. The state's salary range midpoint is higher than other government entities but the actual average salary is lower.

	Range			
Government Agency	**Low**	**Midpoint**	**High**	**Actual Average**
Salt Lake County	$ 23.23	$ 28.74	$ 34.25	$ 25.52
Provo City	21.42	25.22	29.02	28.82
Davis County	21.07	26.05	31.03	30.34[1]
U.S. Government	26.01	29.91	33.81	31.21[2]
Weber County[3]	15.64	20.49	25.33	---
State of Utah	**22.48**	**29.07**	**35.65**	**24.80**

1 Davis County only has one incumbent in the position.
2 This is the U.S. Government regional average as provided by Bureau of Reclamation. The average is based on the best available data for the region.
3 The actual average for Weber County is unavailable. The position is unfilled.
***Note**: except for the U.S. government, all information represents PE's salaries.*

For government positions, Utah's salary range is one of the highest in the state. However, the actual average salary for the State of Utah is the lowest of all institutions participating in the survey. In comparison to the federal government's average salary, Utah's average salary is approximately 21 percent lower.

According to DHRM, the state's actual average salary would have increased, along with the range increases, if funding was available. As a result, due to both the 2001 market comparability adjustment which raised the range and to a lack of available funding, engineers with less experience got a greater pay increase than incumbents with more experience. More funding would have been required to disperse employees, based on the years of their experience, throughout the increased range.

Utah's salary midpoint compares well to other surrounding states, though the actual average is the lowest.

Utah's Engineer III Range Compares Well To Other States, But Is Misleading

In comparing salary ranges for positions that require a PE, Utah's

salary range for Civil Engineer IIIs gives the state an appearance of being comparable to surrounding western states. However, Utah's actual average salary is the lowest of the surrounding states, demonstrating that Utah's position incumbents are heavily weighted toward the lower end of the state's range.

Figure 3. Annual Salary Comparison Between Professional Engineers In Utah State Government To Other State Governments. Utah's range compares well, but the actual average salary is the lowest of surrounding states.

	Salary Range for State Governments			
State[1]	**Minimum**	**Midpoint**	**Maximum**	**Actual Average**
Arizona	$ 48,755	$ 62,162	$ 75,570	$ 64,416
Nevada	43,389	55,687	67,985	61,281
New Mexico	41,375	55,168	68,960	58,084
Wyoming	33,624	51,027	68,430	52,183
Idaho	44,200	55,245	69,056	54,746
Colorado	56,568	71,550	86,532	80,724
Utah	**46,938**	**60,698**	**74,437**	**51,190**

1 The salary range for state government engineers is for civil engineers with the Professional Engineer certification.

***Source**: Data for table comes from ã 2001 Central States Salary Survey, Central States Compensation Association.*

All the surrounding western states, except Utah, have average salaries near the midpoint of the range.

For Utah, the average Engineer III salary is $9,500 lower than the position range midpoint. In contrast, Wyoming (the lowest paying of the surrounding states) pays, on average, slightly more than Utah and slightly more than its range midpoint. Idaho is the only other state survey that pays less than its range midpoint. In fact, all of the other states have actual averages that, as would be expected, fall very near their range midpoints indicating a fairly normal distribution of salaries within their ranges. Utah is unique in its deviation. We were not able to get reliable information on the relative experience levels in other states.

State Engineer III Salary Ranges Compare Well With Private Industry

DHRM found that state salary ranges for the Engineer III position compare well to private firms.

The greatest concern of some engineers is that they believe that they are underpaid in comparison with private industry. DHRM found that state salary ranges for the Engineer III position are comparable to private companies. First, DHRM collected salary information from a private company and then after some scrutiny from engineers, they performed a second salary survey targeting professional engineers.

The initial survey was criticized by some state engineers for not distinguishing between engineers with a professional engineering certificate and those without. The argument being that those private companies hiring individuals with professional engineering certification pay more and thus drive up the market price for PE holders.

DHRM's second survey targeted PE's in the private sector and found Utah's range to be slightly higher.

DHRM remedied the situation by administering a second survey to 25 private sector companies, of which 11 responded. The survey directly addressed the salary ranges of professional engineers instead of the more broad job category of Engineer IIIs. DHRM found that the salary range for the state of Utah PE holders was slightly higher than those of the surveyed companies.

Figure 4. State's Actual Monthly Salary Range Compares Favorably to the Private Sector. DHRM's salary survey of 11 firms depicts a similar range and midpoint between private industry and the state.

			Actual Salary	
Firm	**Incumbents**	**Low**	**Average Mid**	**High**
01	11	$ 3,417	$ 4,417	$ 5,417
02	3	3,750	4,791	5,833
03	6	3,333	5,208	7,083
04	3	3,333	4,500	5,667
05	3	3,750	4,375	5,000
06	15	1,833	4,291	6,750
07	1	4,176	5,102	6,029
08	5	4,300	5,400	6,500
09	20	4,002	4,263	4,524
10	4	3,667	3,958	4,250
11	4	5,050	6,900	8,750
Wtd. Avg	**75**	**3,442**	**4,613**	**5,784**
State	**138**	**4,018**	**4,791**	**5,565**

Note: *Each incumbent in this survey has their PE Certification.*

DHRM's use of a private company's salary information may be the best source for private sector data.

In attempting to validate DHRM's survey, we found it difficult to collect data from companies who simply do not want their actual salaries known to their competitors. Private sector employers also do not provide average employee salaries; rather, when they do release information they prefer to share ranges. The difficulty, as a possible competitor, in collecting professional salary data makes reliance on private compensation-surveying firms almost necessary. The data collected by these types of firms may be the best data available for such comparisons. DHRM currently uses such a firm's survey. This survey provides consistency of data with the same companies reporting each year.

Perhaps use of private sector information is not as important as

originally thought. A number of newer state Engineer IIIs have years of experience with the private sector but have made a decision to work for the state for the retirement package; a 40 hour work week, and/or more job security instead of raw salary. While these elements have aided state employment, the compression of salaries toward the bottom of the salary range has created some employee dissatisfaction.

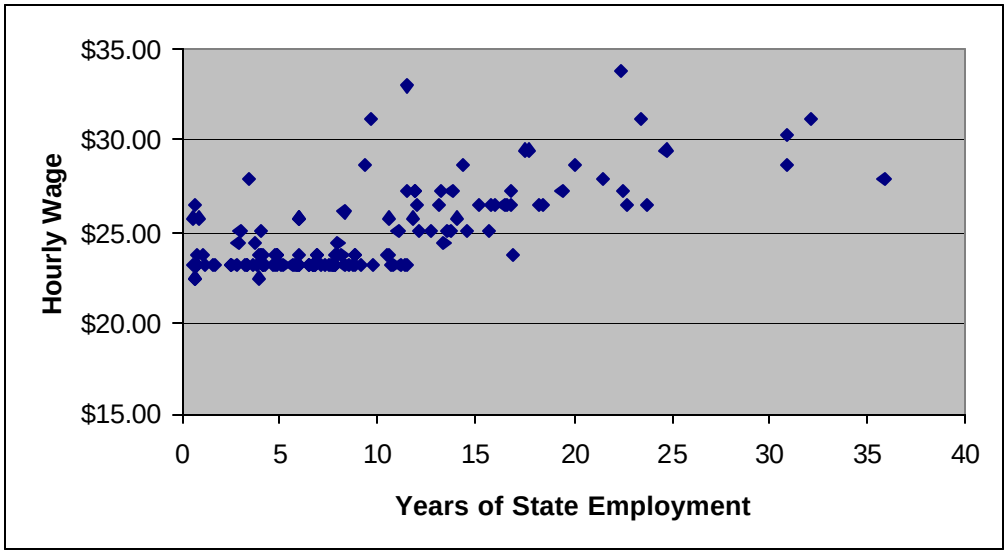
Positioning Within Established Range Appears Compressed

Most Engineer III salaries lie in the lower end of the established salary range, creating a compression problem.

Nearly all Engineer III salaries lie in the lower end of the established range, which has resulted in a compression of salaries for incumbents with a wide variety of experience. State Engineer III salaries are not dispersed throughout the range, based on performance and years of experience, as one would expect. Rather, as a result of increasing the salary range for Engineer IIIs, the hiring wage for new Engineer IIIs increased. However, the range increase caused the departments to absorb the costs with other available funds; there was little left for the experienced staff.

The result is that those engineers with less experience are making close to the same salary as engineers who have been classified as Engineer IIIs for several years. Figure 5 demonstrates this compensation compression.

Figure 5. Engineer III Salaries Are Compressed. The decision to support lower level Engineer IIIs has resulted in salary structure that does little to reward years of state experience.



Most government agencies pay higher in their established range; thereby, recognizing performance and experience.

Compression occurs around the wage of $23.09 per hour. Most Engineer IIIs make the same amount of money with as many as ten years experience. This compression resulted from the salary range adjustment which increased the low end of the salary range. There have been 2 salary range adjustments of 4 steps each since 1994, the last being in 2001. While compression has been a problem for state agencies it is often worsened with a market comparability adjustment. The two adjustments appear to be the reason for the majority of the compression. We found that other government entities in the state pay higher within their established ranges and thus better recognize performance and years of experience of their incumbents.

Engineer III Classification And Qualifications Do Not Match

DHRM needs to be cautious in grouping all Engineer IIIs into the same job classification.

DHRM's market comparability adjustment for engineers meets with opposition because it did not distinguish between professionally licensed engineers and those without a license. There is evidence that professional engineers (PEs) do receive higher compensation in the private sector than do non-certificated engineers, just as they do in state employment. While certification does lend credibility there are, however, clear differences in job content. It is not necessary for all engineers to have certifications since they do not sign off and review public works or structures. As a result, all three state agencies under-fill their Engineer III positions with incumbents who do not have a PE certification. Agencies have also classified positions as Engineer III that may not meet the full requirements of the classification. DHRM should be cautious of grouping engineers into the same Engineer III job classification given the differences between the various engineering specialties.

Original Survey Did Not Address Targeted Population

DHRM uses a private organization to obtain salary data for comparisons to determine market comparability adjustments (MCAs) for many state employee positions. However, in some cases the job categories are too broad and do not distinguish between the different types of jobs within the job category. As an example, the Engineer III category does not differentiate between engineers that have a PE and those who do not.

The private survey company used by DHRM chose to identify engineers as a single classification group rather than create sub-groups. For the initial survey, DHRM did not recognize the lack of differentiation by the survey company and allowed all engineer positions to be used in setting the range. The state's Engineer III incumbents criticized DHRM's initial survey for not recognizing the differences in certified-required positions and non-certified positions.

DHRM's follow-up, as shown in Figure 4, demonstrated that the salary range was competitive with certified position ranges in Utah's private sector. The differences in public and private sector salaries were not in the setting of the range but in the actual pay received.

Professional Certification May Demand More Pay

Those Engineer III positions that do legitimately need their PE license may deserve higher pay.

While not every Engineer III position needs professional certification, those positions that do legitimately require certification appear to be paid more. A survey of western states' compensation reports that the engineer positions requiring professional certification are, on average, paid more. For example, one engineering job classification that required a professional engineer certificate averaged $58,113 while an equivalent non-certified position received, on average, $49,444.

A representative of the American Council of Engineering Companies stated that most engineers who obtain their PE certification receive an increase in their salary. However, he said engineers in the private sector usually start out with lower pay than engineers in the public sector and by the time they obtain their professional certification they may make more money in the private sector.

Some Engineer IIIs Do Not Need Certification To Fulfill Their Jobs

Human resources directors at the Department of Environmental Quality (DEQ), the Department of Natural Resources (DNR), and the Department of Transportation (DOT) agree that the Engineer III job position description requires that incumbents have professional engineering (PE) certification. The PE certification is necessary when, contractually or legally, a certified engineer needs to sign off and approve public works projects (i.e. bridge design, drinking water quality, etc.) or when the incumbent is in the position of reviewing the work of private

sector PEs.

Most Engineer IIIs said their PE was necessary to add credibility to their work.

However, not all Engineer III work has to be performed by a PE. There are some instances where a PE certification isn't required for the actual work or there are other PE positions available for review and approval. Several Engineer III positions are currently filled by staff who are not certified. In fact, 5 of the19 engineers we interviewed said that the PE was not necessary for their job. Nevertheless, most engineers said that it was necessary because, in addition to being able to sign off on public works projects, the PE provides a knowledge base and added credibility to their work.

In discussing the issue of whether or not PE certification is necessary for an engineer III, DHRM says they are in the process of removing this requirement for the Engineer III job description in some instances. According to DHRM, the department is aware that the Engineer III job description and some of the actual job responsibilities within the employing departments do not conform. DHRM realizes that some jobs do require the certification over others, but believes that the job description could be altered to encourage rather than require certification.

This vagueness can be seen in the promotion from Engineer II to Engineer III. Often this promotion does not result in a significant change in job description because it is common practice to reward an employee that has successfully completed the work and has received a professional engineering certificate (PE). In some instances, departments under-fill Engineer III positions with Engineer II staff either to fill a position when no qualified candidates are available in anticipation that this individual will obtain a PE or just as a means of reducing costs.

Some Engineer III Positions Are Under-filled

We question whether the PE is mandatary for all Engineer III positions.

All three state agencies under-fill the Engineer III position with Engineer II's and even some Engineer I's. This means that either agencies reduce the job content and pay of an Engineer III position to that of a lower level or that agencies allow lower level engineers to work in the capacity of an Engineer III without a PE certification. A requirement of professional licensure is that the candidate work for at least 4 years under the guidance of a licensed engineer; most engineer I's and II's do not yet have this level of experience. This lack of certified incumbents raises the question of the necessity of a PE in meeting the job responsibilities of

some Engineer III positions.

Disparities Exist Between State Engineer III Positions

DHRM needs to be wary of grouping all Engineer IIIs in the same job category.

Not all engineers are equally marketable, yet the state has a wide variety of job descriptions in the Engineer III salary range classification. Some public sector Engineer IIIs, such as hydrology engineers, are paid far less than their private sector counterparts. Limited supply and high demand make it extremely difficult to keep some engineering specialists in the public sector.

An American Council of Engineering Companies (ACEC) representative said that the state needs to be careful in grouping all engineering categories into the generic Engineer IIIs salary range. In some instances (environmental and civil engineers generalists), public and private sector compensation is competitive so a single classification is appropriate. However, some engineering fields are specialized and command completely different salaries in the private sector.

Salary discrepancies exist between Engineer IIIs due to availability of federal monies for some state divisions.

An additional earnings discrepancy is created by state agency funding sources. The best example of this problem is in the DNR where the department receives federal monies for water quality, but not for water rights. The greater federal funding allows the department to pay for higher salaries within the pay range for engineer IIIs in water quality, while those engineers in the water rights division do not have the same advantage and make lower salaries.

Summary and Recommendations

The concern raised over the salaries paid for the state's Engineer IIIs is a result of salary increases not following the range increases. The state range is competitive but placement of incumbents toward the lower end of the range creates a compression of salaries for incumbents with quite different experience/tenure levels. Simply, insufficient funding of the range increase is the root of the problem and gaining sufficient funding, when available, is the necessary correction.

Recommendations:

1. We recommend that DHRM review their MCA guidelines and determine whether studies should be performed when there is

insufficient funding available for possible increases. The findings should be reported to the Legislature.

2. We recommend that DHRM meet with user agencies to create benchmarks which better match job descriptions prior to initiating MCA surveys.

3. We recommend DHRM reconsider the collapsing of job categories into larger general categories, since some jobs requiring specialization may be paid a considerable amount more elsewhere.

4. We recommend that DHRM, DEQ, UDOT, and DNR further consider whether the professional certification is a necessary requirement for all positions within the Engineer III classification.