

ALASKA STATE LEGISLATURE

LEGISLATIVE BUDGET AND AUDIT COMMITTEE

Division of Legislative Audit



P.O. Box 113300
Juneau, AK 99811-3300
(907) 465-3830
FAX (907) 465-2347
legaudit@legis.state.ak.us

SUMMARY OF: A Special Report on the Department of Transportation and Public Facilities, Employment Opportunities for Women Engineers, November 8, 2004

PURPOSE OF THE REPORT

In accordance with Title 24 of the Alaska Statutes and a special request by the Legislative Budget and Audit Committee, we conducted an audit of the Department of Transportation and Public Facilities (DOTPF) related to employment opportunities for women engineers. Specific objectives of the audit are:

- To review management's response to the history of settlements and awards concerning gender-based discrimination against women engineers during the past ten years, including Letter of Grievance Resolution No. 96-G-274.
- To evaluate progress in correcting the past underutilization of women engineers, both in terms of workforce composition and employee perceptions.
- To compare the advancement, turnover, and starting pay of men and women engineers.

REPORT CONCLUSIONS

During the last decade, women have overall become better represented within the mainstream career track for engineers at DOTPF. The longevity before and after career milestones is generally comparable for men and women. Turnover in recent years has varied little between the genders. Turnover after rehire is statistically insignificant. Hiring managers have little discretion to vary the pay rates for successful applicants, and we found no evidence that the personnel code is being manipulated to hire one gender at higher rates. Finally, our survey of DOTPF engineers shows that some women perceive that discrimination still hinders their careers.

FINDINGS AND RECOMMENDATIONS

Recommendation No. 1

DOTPF's commissioner should proactively monitor both the statistical and intangible aspects of a gender-neutral work environment.

Evaluations of employment opportunity have traditionally focused upon the degree to which various demographic groups are present or absent. Statistical analysis is an important tool in identifying possible pockets of unequal career opportunities. Targets showing the expected employment by gender are an accepted, though imperfect, measure of an employer's success in developing a gender-neutral work environment.

We recommend that DOTPF go beyond the heavily-aggregated analyses that it currently conducts for the reports required by law. Using regional gender targets for each engineering job class as guidance, DOTPF can monitor its goals of having a gender-neutral workplace.

We recognize that DOTPF has made considerable improvements in creating a positive work environment for those employees moving through the engineering career ladder. However, DOTPF's management needs to recognize that proactive and ongoing measures are still needed to meet its goal of a gender-neutral workplace.

November 8, 2004

Members of the Legislative Budget
and Audit Committee:

In accordance with the provisions of Title 24 of the Alaska Statutes, the attached report is submitted for your review.

DEPARTMENT OF TRANSPORTATION AND PUBLIC FACILITIES
EMPLOYMENT OPPORTUNITIES FOR WOMEN ENGINEERS

November 8, 2004

Audit Control Number

25-30011-05

During the last decade, women have overall become better represented within the mainstream career track for engineers at Department of Transportation and Public Facilities (DOTPF). The longevity before and after career milestones is generally comparable for men and women. Turnover in recent years has varied little between the genders. Turnover after rehire is statistically insignificant. Hiring managers have little discretion to vary the pay rates for successful applicants, and we found no evidence that the personnel code is being manipulated to hire one gender at higher rates. Finally, our survey of DOTPF engineers shows that some women perceive that discrimination still hinders their careers.

The audit was conducted in accordance with generally accepted government audit standards. Fieldwork procedures utilized in the course of developing the findings and discussion presented in this report are discussed in the Objectives, Scope, and Methodology section.

Pat Davidson, CPA
Legislative Auditor

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OBJECTIVES, SCOPE, AND METHODOLOGY

In accordance with Title 24 of the Alaska Statutes and a special request by the Legislative Budget and Audit Committee, we conducted an audit of the Department of Transportation and Public Facilities (DOTPF) related to employment opportunities for women engineers.

Objectives

The objectives of the audit were as follows:

- To review management's response to the history of settlements and awards concerning gender-based discrimination against women engineers during the past ten years, including Letter of Grievance Resolution No. 96-G-274.
- To evaluate progress in correcting the past underutilization of women engineers, both in terms of workforce composition and employee perceptions.
- To compare the advancement, turnover, and starting pay of men and women engineers.

Scope

DOTPF's traditional mainstream career track for engineers involves the Engineering Assistant series (I, II, III) and the Engineer/Architect series (I, II, III).¹ This mainstream career track occurs primarily within DOTPF's three regional design divisions, three regional construction divisions, and one statewide bridge design unit.

Advancement into the Engineer/Architect series requires state licensing as either an architect or a Professional Engineer (P.E.). Most DOTPF employees in this series are licensed as professional engineers rather than architects.

The audit arises from a concern that DOTPF has not provided gender neutral employment opportunities for women engineers in their attempts to advance through the mainstream career track. Our interviews of 26 women engineers and our review of past complaints show that these allegations of discriminatory treatment are concentrated in the years prior to 1997 and in DOTPF's northern and southeast regions.

In 1997, the State signed Letter of Grievance Resolution No. 96-G-274 with the union that represents general government employees. Under the agreement, DOTPF's northern region

¹ Further advancement in the series to Engineer/Architect IV and V is possible but rare, due to the scarcity of such top management positions and the merging of longevity with potential retirement. Also, some of these top management positions are, like division directors, outside of the classified service.

was to implement various corrective actions to remedy employment discrimination. The agreement notes “[t]he Union acknowledges that the Fairbanks Office of the Department of Transportation and Public Facilities has, since January 1, 1996, undertaken specific actions to improve the working conditions for women and minorities.”

Grievance Resolution No. 96-G-274 was an action plan to correct an underlying climate of discrimination, not a settlement of individual complaints. Though the agreement applied to women and minorities in all job classes, it was technically limited to DOTPF’s northern region and the FY 98-99 time span. However, before the agreement expired, DOTPF implemented permanent, department-wide procedures to improve its employment of underutilized applicants.

We have considered the three years starting January 1, 1995 as the base period for our evaluation. Comparisons at subsequent three-year intervals enable a straightforward, meaningful analysis.

Methodology

Fieldwork for this audit included the following:

- Review of statutes, regulations, policies, and collective bargaining agreements.
- Analysis of workforce composition using extractions from the State’s payroll database (AKPAY).
- Analysis of applicant demographics using extractions from the State’s online recruitment database (Workplace Alaska).
- Review of personnel files and recruitment records.
- Interviews of 26 women engineers who currently work at DOTPF or have worked there in the past.
- A confidential online survey of all 327 DOTPF employees currently working in the Engineering Assistant series or as an Engineer/Architect I, II, or III.

| | <u>Employees</u> | <u>Responses</u> | <u>Percentage Response</u> |
|-------|------------------|------------------|--------------------------------|
| Men | 249 | 181 | 73% |
| Women | <u>78</u> | <u>55</u> | 71% |
| Total | 327 | 236 | 72% |

Approximately two-thirds of these employees became DOTPF engineers after 1995.

- Interviews of managers at DOTPF and human resource personnel in the Department of Administration.
- Review of grievances, complaints, and litigation.
- Review of the home pages of national engineering societies.
- Analysis of hiring data compiled by DOTPF for the state report to the Federal Highway Administration.
- Analysis of national engineering workforce statistics compiled by the U.S. Equal Employment Opportunity Commission, the U.S. Department of Labor, the National Science Foundation, and the American Society for Engineering Education.
- Analysis of statewide engineering workforce statistics compiled by the U.S. Equal Employment Opportunity Commission, the Alaska Department of Labor and Workforce Development, DOTPF, and the University of Alaska.

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ORGANIZATION AND FUNCTION

The Department of Transportation and Public Facilities (DOTPF) constructs and maintains roads, airports, harbors, and public buildings. It is the largest state department, with over 3,200 employees organized within northern, central, and southeast regions. Among these employees are approximately 300 engineers.

DOTPF's traditional mainstream career track for engineers

DOTPF's traditional mainstream career track for engineers includes the Engineering Assistant series (I, II, III) and the Engineer/Architect series (I, II, III). This mainstream career track occurs primarily within DOTPF's three regional design divisions, three regional construction divisions, and one statewide bridge design unit.

For the Engineering Assistant series, a bachelor degree in civil engineering, mechanical engineering, or architecture is the basic prerequisite. Most DOTPF engineers have their degrees in civil engineering. Placement and promotion within the series varies with increasing years of experience.

Advancement into the Engineer/Architect series requires state licensing as either an architect or a Professional Engineer (P.E.). Most DOTPF employees in this series are licensed as professional engineers rather than architects.

The P.E. license requires (1) a bachelor degree in engineering, (2) passage of a national exam, and (3) four years of experience, with two of those years consisting of more advanced "responsible charge" work.

Some DOTPF engineers begin their engineering careers with the State and internally advance through the two job series. After obtaining their bachelor degrees, they start as an entry-level Engineering Assistant I or II. As they advance through Engineering Assistant III, they accumulate the overall experience required for the P.E. license. After licensing, they advance into the Engineer/Architect series.

Engineer/Architect II and III are management positions involving the supervision of other engineers. Engineer/Architect III is the usual top of the traditional mainstream career path.²

² Further advancement in the series to Engineer/Architect IV and V is possible but rare, due to the scarcity of such top management positions and the merging of longevity with potential retirement. Also, some of these top management positions are, like division directors, outside of the classified service.

Lateral entry versus internal advancement

In contrast to engineers that begin their careers at DOTPF (internal advancement), the department sometimes hires engineers who have private sector experience. Some of those hired have already obtained their P.E. licenses. These experienced engineers join DOTPF through a lateral entry into the Engineer/Architect series or, if still unlicensed, at least at an advanced placement as an Engineering Assistant III.

Exhibit 1 and Appendix C show the distribution of internal advancement and lateral entries among licensed engineers in DOTPF’s mainstream career track. Internal advancement is the predominant route through which both genders obtain their positions in the Engineer/Architect series.

Procedures for hiring and advancement

Hiring and advancement decisions concerning DOTPF engineers are governed by procedures from several different sources. As positions within the classified service, they are subject to the State’s personnel code. Written policies implementing the code are issued by human resource specialists in areas such as affirmative action. The Engineering Assistant series and the Engineer/Architect I positions are covered by the General Government Unit (GGU) collective bargaining agreement. Positions as an Engineer/Architect II or III are covered by the Supervisory Unit (SU) agreement.

The initial decision to recruit and the final decision to hire are approved by the Department of Administration (DOA), Division of Personnel, after screening for compliance with rules, policies, and contracts.³ Hiring managers at DOTPF must have their choices approved by their division directors.

| <p align="center">EXHIBIT 1</p> <p align="center"><i>Lateral Entry vs. Internal Advancement</i></p> <p align="center">CAREER TRACKS OF LICENSED ENGINEERS</p> <p align="center">DOTPF DESIGN AND CONSTRUCTION DIVISIONS</p> | | | | | | | | |
|--|--|---|--|--|--|---|--|--|
| <p align="center">POSITION HELD ON JANUARY 1, 2004</p> | <p align="center">MEN</p> | | | | <p align="center">WOMEN</p> | | | |
| | <p align="center">TOTAL NO.</p> | <p align="center">INTERNAL ADVANCEMENT</p> | <p align="center">LATERAL ENTRY</p> | <p align="center">PERCENT LATERAL ENTRY</p> | <p align="center">TOTAL NO.</p> | <p align="center">INTERNAL ADVANCEMENT</p> | <p align="center">LATERAL ENTRY</p> | <p align="center">PERCENT LATERAL ENTRY</p> |
| Engineer/architect III | 26 | 15 | 11 | 42% | 5 | 3 | 2 | 40% |
| Engineer/architect II | 22 | 12 | 10 | 45% | 7 | 6 | 1 | 14% |
| Engineer/architect I | 30 | 21 | 9 | 30% | 7 | 6 | 1 | 14% |
| <p align="center"><i>Source: state personnel and payroll records.</i></p> | | | | | | | | |

³ In September 2003, DOTPF’s human resource specialists were consolidated within DOA’s division of personnel.

Implementation of equal employment opportunity

For public personnel hiring in general, equal opportunity challenges have historically concerned two issues: (1) noninclusive recruiting and (2) advancement to the interview stage.

With rare exceptions, all of DOTPF's engineering vacancies are now publicly advertised as open recruitments on the online Workplace Alaska. Those rare exceptions involve contractual shop rules and personnel code provisions that prescribe rehire rights for layoffs, returns within two years, and injured workers.

However, the public has long recognized that advancement to an interview is the critical screening threshold from the applicant's perspective. National challenges to government hiring have resulted in periodic expansions of the traditional "rule of three" (interviews of the three highest-scored applicants) to interviews of the top seven, or even beyond. In other words, an interview for every applicant has not historically been the norm in public personnel systems.

Unlike many public recruitments, DOTPF faces a shortage of applicants for engineering positions.⁴ This reality, combined with the interplay of shop rules and DOTPF's "underutilization" policy, results in the advancement of almost all women applicants to the interview stage.

The State's contract with GGU employees requires an interview of any member that ranks within the top five applicants. The contract with SU employees requires an interview of any member, regardless of ranking, that applies for a position as an Engineer/Architect II or III.

Further, DOTPF's policy on underutilized applicants states that "[e]ach candidate identified as underutilized must be considered for the vacancy." The policy classifies women as "underutilized" for positions at pay ranges 18 and above. Under the current pay schedules,⁵ this translates to positions above Engineering Assistant I.

While the policy indicates that "[i]nterviews are encouraged" for underutilized candidates, the threshold for "consideration" is deemed to occur if a hiring manager merely accesses a candidate's application on the Workplace Alaska database. Nevertheless, hiring managers in recent years have usually chosen to "consider" women engineers by interviewing them. In

⁴ For instance, a May 8, 2000 memo from the DOTPF human resource manager starts as follows:

[R]ecruitment difficulties for positions in the Engineering job class series has become one of the department's most pressing problems. Our inability to fill engineering positions is severely impacting the department's ability to accomplish its mission.

⁵ At the beginning of FY 01, all engineering positions benefited from an across-the-board advancement into higher pay ranges. DOA approved these "industry range changes" to "meet an immediate need of emergency magnitude to fill positions for which repeated recruitments have failed over the past 18 months."

fact, such interviews have become the usual practice even when a woman applies for an engineering position below Range 18.

The key monitoring mechanism is the completion of the Mandatory Underutilized Candidate Consideration Form (see Appendix A). Hiring managers use this form to explain their choices and to list the names of all applicants from groups that are classified as underutilized. A division director must approve the form before a job offer is made to the selected applicant.

BACKGROUND INFORMATION

Pending complaints

As of June 2004, there was only one outstanding complaint in which a woman engineer alleged gender-based discrimination by the Department of Transportation and Public Facilities (DOTPF). A former engineer has filed a civil rights suit that is set for trial in federal court within the next year.⁶ The judge has dismissed some portions of her suit, including those alleging a hostile workplace.⁷

Individual settlements and awards

In the time period between January 1, 1995 and June 30, 2004, individual complaints by women engineers have been resolved against DOTPF in five instances. Four of those complaints arose in the department's northern region.

The common theme of the five instances was frustrated advancement at various times between the years 1990 and 1996. Four of the five complaints ended with the State voluntarily entering into a settlement agreement. The fifth advanced to a 1996 arbitrator's award against DOTPF.

The remedies imposed upon DOTPF have included promotions, back pay, and additional cash settlements ranging from \$3,600 to \$36,200. Only one of the five complaints advanced as far as the court system, where the case was ultimately settled without a trial.

Grievance Resolution No. 96-G-274

After the unfavorable arbitrator's decision in 1996, DOTPF initiated an internal investigation of discrimination in its northern region. Over 70 witnesses were interviewed by a team consisting of personnel specialists and a contract attorney. Based upon the resulting report, DOTPF's commissioner wrote the following to "All Northern Region Employees:"

The administrative investigation into allegations of discrimination and harassment in the Northern Region is now complete. The scope and duration of the investigation were significantly greater than expected . . . A number of validated complaints were identified in the report and disciplinary action was recommended. Based on the "for cause findings" contained in the report, disciplinary action has been taken, to include verbal and written reprimands, a lengthy suspension, and a resignation. . .

⁶ The same engineer has filed an associated suit in state superior court, which is also set for trial.

⁷ Confidentiality provisions in state law prohibit our discussion of the background of this complaint in our public report.

A mediator was retained to facilitate a written remedial plan acceptable to both the State and the union that represents general government (nonsupervisory) employees. In 1997, the State signed Letter of Grievance Resolution No. 96-G-274.⁸ The State acknowledged that “*some grievances have been found to have merit and have been resolved favorably to the employee.*” The union acknowledged that “*the Fairbanks Office of the Department of Transportation and Public Facilities has, since January 1, 1996, undertaken specific actions to improve the working conditions for women and minorities.*” The agreement notes that “[i]t is not an admission of guilt or contract violation by either party.”

Grievance Resolution No. 96-G-274 was an action plan to correct an underlying climate of discrimination, not a settlement of individual complaints. Though the agreement applied to all job classes and underutilized groups,⁹ it was technically limited to DOTPF’s northern region and the FY 98-99 time span.

The substance of the agreement begins with a detailed prescription for diversity training jointly conducted by DOTPF and the “women’s issues department” of the union’s national affiliate. The content of the diversity training is detailed by the agreement down to the level of the regional director’s introductory remarks at the training class.

The core of the agreement was to remedy discriminatory hiring practices by requiring more openness about who was hired and why. The parties agreed to develop more rigorous documentation to track applicants from underutilized classifications and document hiring choices. Personal oversight of each choice is required from both the regional director and the regional personnel officer. However, while interviews of most women applicants are the norm at DOTPF today, the 1996 agreement stopped short of specifying such a requirement.

| EXHIBIT 2 | |
|--|---|
| DOTPF’S TOP MANAGERS TURNOVER SINCE 1996 | |
| <i>Northern and Southeast Regions</i> | |
| DOTPF MANAGER HOLDING POSITION ON JANUARY 1, 1996 | STILL EMPLOYED AT DOTPF ON JAN. 1, 2004? |
| <i>NORTHERN REGION</i> | |
| Regional director | NO |
| Director, design & construction div. | NO |
| Regional pre-construction engineer | NO |
| Design group chief | NO |
| Design group chief | NO |
| Construction group chief | NO |
| Construction group chief | NO |
| <i>SOUTHEAST REGION</i> | |
| Regional director | NO |
| Director, construction, maint., ops div. | NO |
| Regional pre-construction engineer | YES |
| Design group chief | YES |
| Design group chief | YES |
| Bridge design chief | NO |
| Construction manager | NO |
| Construction group chief | NO |
| Construction group chief | YES |
| <small><i>Includes each region’s design and construction employees at level Engineer/Architect IV and above.</i></small> | |

⁸ Union No. F96-G-017.

⁹ The agreement applied to women and minorities.

Grievance Resolution No. 96-G-274 was limited in geography and time. However, its legacy is the current department-wide process, detailed above, that was adopted before the settlement expired.

A decade of leadership change

DOTPF’s northern and southeast regions have experienced major leadership changes since the mid-1990s. Exhibit 2, on the opposite page, shows that top management in the northern region has completely changed since 1996. In the southeast region, only four out of nine executives from 1996 are still working at DOTPF. Retirement, personnel action, and exempt appointments have contributed to significant turnover among key individuals responsible for setting the tone in the workplace.

Uncertainties in defining occupational underutilization for Alaska’s engineers

The concept of an “underutilized” gender implies an unmet target, a level that ideally signals open recruitments free of prejudice. Judgments regarding the adequacy of a group’s representation, of course, depend upon the target chosen for comparison.

There is a considerable variety of benchmarks that can arguably signal an acceptable level of “utilization,” that is, the successful elimination of “underutilization.” DOTPF considers women to be underutilized for all types of positions at Ranges 18 and above. This long-time assumption is based upon the overall presence of women in a large aggregated federal reporting category (“professional”) that includes over 100 job classes in addition to the six in DOTPF’s mainstream career path for engineers.

One potential benchmark might be the extent to which women actually apply to DOTPF for engineering vacancies. For the job classes in the traditional mainstream career track, Exhibit 3 shows the distribution of applications during the most recent three-year period.

| EXHIBIT 3 | | | |
|--|----------------------------|---------------------------------|---------------------------|
| WORKPLACE ALASKA APPLICATIONS RECEIVED BY DOTPF | | | |
| <i>January 1, 2001 to December 31, 2003</i> | | | |
| ALL THREE REGIONS | TOTAL APPLI-CATIONS | APPLI-CATIONS FROM WOMEN | PERCENT FROM WOMEN |
| Engineer/architect III | 125 | 14 | 11% |
| Engineer/architect II | 141 | 27 | 19% |
| Engineer/architect I | 149 | 20 | 13% |
| Engineering assistant III | 450 | 77 | 17% |
| Engineering assistant II | 232 | 57 | 25% |
| Engineering assistant I | 741 | 200 | 27% |
| Above classes combined | 1,838 | 395 | 21% |
| <small>Source: state personnel records. Engineering Assistant I counts include recruitments for I/II flex positions.</small> | | | |

Though the percentage of available women applicants is an important indicator, it should be recognized that the 1,838 applications include numerous instances in which the same men and women have applied for more than one job. Further, though DOTPF realistically recruits from a labor pool that is at

least statewide in scope, Appendix B shows some significant regional differences in the distribution of applicants.

For the purpose of equal employment opportunity laws, the gender target for a given occupation is neither 50% women nor the percentage of adult women in a state's population. Rather, the traditional benchmark is the percentage that is engaged in a particular occupation in the relevant labor market. The geographic boundaries of a labor market depend upon the mobility of workers that seek that type of work as well as the availability of any prerequisite schooling.

The University of Alaska is the only in-state engineering school. As shown in Exhibit 4, a small number of women annually graduate in civil and mechanical engineering at the Fairbanks and Anchorage campuses. DOTPF will, of course, only successfully recruit some of these graduates. Given this very limited in-state supply of graduates, DOTPF has in recent years expanded its search for engineers to the Lower 48.

Federal law starts with the assumption that an occupation is "nontraditional" for women when they fill no more than 25% of its positions.¹⁰ Exhibit 4 shows that to be the case for both civil and mechanical engineers on a national basis.

Federal agencies that promote equal opportunity have together set benchmarks known as the Census 2000 Special Equal Employment Opportunity Tabulation. This consortium of agencies asserts the following status for these statistics:

*The Census 2000 Special EEO Tabulation serves as the primary external benchmark for comparing the race, ethnicity, and sex composition of an organization's internal workforce, and the analogous external labor market, within a specified geography and job category.*¹¹

The Census 2000 tabulation estimates that women comprise 12% of Alaska's civil engineers and 18% of its mechanical engineers. If the Census Bureau's underlying numbers for both occupations are combined, women engineers represent 13% of the total. If the bureau's national indicators are used, the tabulation would indicate a combined total of only 8%.

However, it is important to realize that these federal benchmarks are statistical estimates by the Census Bureau consortium, rather than actual counts. Further, the bureau's methodology has some practical limits in its adaptability to Alaska's geography with the nation's lowest population density. For instance, the estimates project at the regional level that no women work as civil or mechanical engineers in all of southeast Alaska.¹²

¹⁰ See 29 U.S.C. § 2508.

¹¹ See www.census.gov/hhes/www/eoindex/intro.html.

¹² See www.census.gov/cgi-bin/broker. At the other extreme, the Census Bureau projects that 44 women work as mechanical engineers in Alaska taken as a whole. Statisticians at Alaska's Department of Labor and Workforce Development (DLWD), on the other hand, report only 18 from employment filings. While the DLWD gender counts exclude federal engineers, the self-employed, and filings with unknown gender, all of this underscores the practical difficulties in deriving meaningful, and fair, benchmarks from very limited populations.

EXHIBIT 4

VARIOUS INDICATORS OF GENDER DISTRIBUTION IN ENGINEERING

| NATIONAL INDICATORS: | SOURCE | PERCENT WOMEN | FOUR-FIFTHS RULE |
|---|---------------|----------------------|-------------------------|
| Civil engineers in U.S. (2002 estimate) | U.S. DOL | 11% | 9% |
| Civil engineers in U.S. (2000 estimate) | U.S. EEOC | 10% | 8% |
| Civil engineering B.S. degrees awarded in U.S. (2000) | NSF | 24% | 19% |
| Civil engineering B.S. degrees awarded in U.S./Canada (2002) | ASEE | 24% | 19% |
| Mechanical engineers in U.S. (2002 estimate) | U.S. DOL | 7% | 6% |
| Mechanical engineers in U.S. (2000 estimate) | U.S. EEOC | 7% | 6% |
| Mechanical engineering B.S. degrees awarded in U.S. (2000) | NSF | 14% | 11% |
| Mechanical engineering B.S. degrees awarded in U.S./Canada (2002) | ASEE | 14% | 11% |
| Civil and mechanical engineers in U.S. (2000 estimate) | U.S. EEOC | 8% | 6% |
| ALASKA INDICATORS: | | | |
| Civil engineers in Alaska (2000 estimate) | U.S. EEOC | 12% | 10% |
| Civil engineers in Alaska (3rd qtr. 2003 reporting) | Alaska DLWD | 14% | 11% |
| Licensed in-state civil engineers (P.E.) (2001 estimate) | Alaska DOTPF | 8% | 6% |
| Civil engineering B.S. degrees awarded at UAA (1998-2003) | UAA | 32% ¹³ | 26% |
| Civil engineering B.S. degrees awarded at UAF (1998-2003) | UAF | 32% ¹⁴ | 26% |
| Mechanical engineers in Alaska (2000 estimate) | U.S. EEOC | 18% | 14% |
| Mechanical engineers in Alaska (3rd qtr. 2003 reporting) | Alaska DLWD | 10% | 8% |
| Mechanical engineering B.S. degrees awarded at UAF (1998-2003) | UAF | 15% ¹⁵ | 12% |
| Civil and mechanical engineers in Alaska (2000 estimate) | U.S. EEOC | 13% | 10% |
| <p>Latest available statistics from the respective sources as of May 2004. <i>Abbreviations:</i> P.E. = Professional Engineer • ASEE = American Society for Engineering Education • DLWD = Alaska Department of Labor and Workforce Development • DOTPF = Alaska Department of Transportation and Public Facilities • NSF = National Science Foundation • UAA = University of Alaska Anchorage • UAF = University of Alaska Fairbanks • U.S. DOL = U.S. Department of Labor • U.S. EEOC = U.S. Equal Employment Opportunity Commission and consortium of associated federal agencies (Census 2000 special equal employment opportunity tabulation).</p> | | | |

A further complication is the “four-fifths rule” applied by federal agencies in resolving discrimination complaints. Hiring from a protected group is considered nondiscriminatory if the percentage in a given workplace is at least four-fifths (80%) of that group’s percentage in the surrounding labor market. The theory of the 20% leeway is that employers should not be held responsible for under-representation factors beyond their control.

Literal application of the federal target for Alaska, with reduction by the four-fifths rule, would thus result in women as only an expected 10% of DOTPF’s combined workforce of

¹³ This percentage represents 34 women who graduated.

¹⁴ This percentage represents 29 women who graduated.

¹⁵ This percentage represents 12 women who graduated.

civil and mechanical engineers. With application of the four-fifths rule, the nationwide percentage for a combined workforce would only be 6%. However, in Exhibit 4 on the previous page, we present alternative statistics from other sources that quantify the presence of women engineers in Alaska.

Human resource authorities suggest that employment discrimination should self-correct as colleges admit more women into the “pipeline” that prepares them for the professional labor force. However, Exhibit 5 shows that women nationwide are choosing to pursue engineering far less than medicine, law, public administration, and graduate school in general.

Nevertheless, as shown in Exhibit 6, women engineers have in recent years distinguished themselves among the top national leaders of their profession.

| EXHIBIT 5 OTHER INDICATORS OF GENDER DISTRIBUTION IN HIGHER EDUCATION AND THE PROFESSIONS | |
|--|--------------------------|
| INDICATOR | PERCENT WOMEN |
| Federal threshold for “nontraditional occupation” for women | 25% |
| Undergraduate college enrollment (all fields) in U.S. (2000) | 56% |
| Graduate school enrollment (all fields) in U.S. (2000) | 58% |
| Law degrees awarded in U.S. (2001) | 47% |
| Medical degrees (M.D.) awarded in U.S. (2001) | 43% |
| Masters degrees in public administration awarded in U.S. (2001) | 74% |
| <i>Source: 29 U.S.C. § 2508 and U.S. Department of Education</i> | |

| EXHIBIT 6 NATIONAL ENGINEERING SOCIETIES WITH A WOMAN PRESIDENT IN THE PAST FIVE YEARS |
|---|
| American Society of Civil Engineers (2003) |
| American Society of Mechanical Engineers (2002) |
| Institute of Electrical and Electronics Engineers (2002) |
| American Institute of Chemical Engineers (2003) |
| National Society of Professional Engineers (2003) |
| National Institute of Ceramic Engineers (2004) |
| Society of Automotive Engineers (2000) |

REPORT CONCLUSIONS

During the last decade, women have overall become better represented within the mainstream career track for engineers at the Department of Transportation and Public Facilities (DOTPF). The longevity before and after career milestones is generally comparable for men and women. Turnover in recent years has varied little between the genders. Turnover after rehire is statistically insignificant. Hiring managers have little discretion to vary the pay rates for successful applicants, and we found no evidence that the personnel code is being manipulated to hire one gender at higher rates. Finally, our survey of DOTPF engineers shows that some women perceive that discrimination still hinders their careers.

Our detailed conclusions follow:

Overall, women engineers have become better represented within the last decade

Overall, 22% of the engineers in DOTPF's mainstream career track are now women (see Exhibit 7). Overall regional percentages range from 15% in southeast to 24% in the central region. From the perspective of the individual job classes, Exhibit 8 on the next page shows more detailed statistics for each region.

| EXHIBIT 7 | | | | | | | | |
|---|------------------------|----------------------|------------------------|----------------------|------------------------|----------------------|------------------------|----------------------|
| WOMEN ENGINEERS WORKING IN DOTPF DESIGN AND CONSTRUCTION DIVISIONS | | | | | | | | |
| REGION | JANUARY 1, 1995 | | JANUARY 1, 1998 | | JANUARY 1, 2001 | | JANUARY 1, 2004 | |
| | TOTAL POSITIONS | PERCENT WOMEN | TOTAL POSITIONS | PERCENT WOMEN | TOTAL POSITIONS | PERCENT WOMEN | TOTAL POSITIONS | PERCENT WOMEN |
| Northern | 108 | 18% | 92 | 22% | 97 | 23% | 108 | 21% |
| Central | 132 | 20% | 121 | 23% | 131 | 24% | 161 | 24% |
| Southeast | 41 | 2% | 32 | 3% | 41 | 20% | 48 | 15% |
| All three | 281 | 17% | 245 | 20% | 269 | 23% | 317 | 22% |

Source: state personnel and payroll records. Above includes DOTPF employees working as Engineering Assistant I, II, and III and Engineer/Architect I, II, and III.

In the northern and central regions, Exhibit 8 shows that women now represent 17% to 44% of the three Engineer/Architect job classes. On the other hand, only one woman works in these job classes in the southeast region. This low representation in southeast is affected both by a scarcity of positions¹⁶ and a scarcity of women applicants.¹⁷

¹⁶ Of the 97 positions in the Engineer/Architect series that Exhibit 8 shows for 2004, less than a fifth are found in DOTPF's southeast region.

Judgments regarding the expected level of a group's representation, of course, depend upon the target chosen for comparison (see Exhibit 4 on page 13). Applying a 13% target¹⁸ to Exhibit 8 shows the number of deficient, regional-level job classes have decreased from 11 in 1995 to five in 2004, with three of the latter in the southeast region. Analysis with a 10% target shows that the number of deficient regional-level job classes has decreased from nine in 1995 to two in 2004, with both of the latter in the southeast region.

EXHIBIT 8

WOMEN ENGINEERS WORKING IN DOTPF DESIGN AND CONSTRUCTION DIVISIONS

| | JANUARY 1, 1995 | | JANUARY 1, 1998 | | JANUARY 1, 2001 | | JANUARY 1, 2004 | |
|---------------------------|-----------------|---------------|-----------------|---------------|-----------------|---------------|-----------------|---------------|
| | TOTAL POSITIONS | PERCENT WOMEN | TOTAL POSITIONS | PERCENT WOMEN | TOTAL POSITIONS | PERCENT WOMEN | TOTAL POSITIONS | PERCENT WOMEN |
| NORTHERN REGION | | | | | | | | |
| Engineer/architect III | 12 | 17% | 9 | 22% | 9 | 11% | 9 | 22% |
| Engineer/architect II | 9 | 0% | 7 | 14% | 6 | 33% | 9 | 44% |
| Engineer/architect I | 11 | 55% | 9 | 44% | 12 | 17% | 12 | 17% |
| Engineering assistant III | 28 | 11% | 27 | 22% | 28 | 18% | 36 | 22% |
| Engineering assistant II | 44 | 11% | 38 | 16% | 28 | 25% | 34 | 18% |
| Engineering assistant I | 4 | 75% | 2 | 50% | 14 | 36% | 8 | 12% |
| CENTRAL REGION | | | | | | | | |
| Engineer/architect III | 12 | 0% | 9 | 0% | 14 | 0% | 16 | 19% |
| Engineer/architect II | 13 | 8% | 16 | 12% | 13 | 23% | 18 | 17% |
| Engineer/architect I | 15 | 27% | 14 | 43% | 15 | 33% | 15 | 27% |
| Engineering assistant III | 43 | 14% | 40 | 12% | 38 | 24% | 47 | 11% |
| Engineering assistant II | 43 | 37% | 42 | 36% | 41 | 34% | 58 | 40% |
| Engineering assistant I | 6 | 0% | 0 | — | 10 | 10% | 7 | 14% |
| SOUTHEAST REGION | | | | | | | | |
| Engineer/architect III | 4 | 0% | 3 | 0% | 6 | 0% | 6 | 0% |
| Engineer/architect II | 2 | 0% | 2 | 0% | 1 | 0% | 2 | 0% |
| Engineer/architect I | 10 | 0% | 7 | 0% | 5 | 20% | 10 | 10% |
| Engineering assistant III | 13 | 0% | 10 | 0% | 14 | 14% | 18 | 17% |
| Engineering assistant II | 12 | 8% | 10 | 10% | 12 | 33% | 12 | 25% |
| Engineering assistant I | 0 | — | 0 | — | 3 | 33% | 0 | — |

Source: state personnel and payroll records.

¹⁷ For the three years starting January 1, 2001, Appendix B shows no applications from women for positions as an Engineer/Architect II or III in the southeast region. There was only one application from a woman for a position in that region as an Engineer/Architect I.

¹⁸ As shown in Exhibit 4 on page 13, the Census 2000 Special Equal Employment Opportunity Tabulation estimates that women comprise 12% of Alaska's civil engineers and 18% of its mechanical engineers. If the Census Bureau's underlying numbers for both occupations are combined, women engineers represent 13% of the total. A target of 10% reflects the traditional leeway of the "four-fifths rule" that we assume federal agencies would apply in any compliance action concerning DOTPF.

On the other hand, federal law indicates that at the national level an occupation continues to be considered a “nontraditional” one for women until their representation exceeds 25%. Applying that target to Exhibit 8, on the prior page, shows that the number of deficient regional-level job classes in 2004 did not decrease from the level in 1995.

During the last decade, women have become statistically better represented within the traditional mainstream career track for the department’s engineers.¹⁹ However, DOTPF, and other agencies, continue to face the larger problem of attracting more engineers of either gender who are willing to work in the public sector. Though DOTPF has offered anecdotes of sporadic efforts to actively recruit, its predominant approach is to wait for the nation’s engineering graduates to happen upon the Workplace Alaska website.²⁰

Our recommendation section discusses the need for DOTPF to more effectively monitor its utilization of women engineers at the regional and job class levels.

Overall, women applicants are proportionately more likely than men to be hired as engineers

As a condition of DOTPF’s substantial federal funding, the State submits periodic reports of hiring practices to the Federal Highway Administration. Those reports compare department-wide selection rates for men and women applicants in various job classes.

Data for the most recent report continues to show that far more men than women apply for the available engineering positions.²¹ However, when the six job classes in the mainstream career track are combined, the overall selection rates show that a greater proportion of the women applicants succeed in getting hired.²²

For internal advancement, longevity before and after promotion is generally comparable

For employees of a given rank, internal advancement opportunities can be compared both in terms of (1) career length prior to promotion and (2) career length to the present.

¹⁹ The State tracks underutilization in its quarterly Workforce Demographics Report. The July 2004 report shows no current underutilization of women at DOTPF in an aggregated group that includes Engineering Assistant I up through Engineer/Architect II. However, the report includes the Engineer/Architect III position in a broader managerial aggregation that is not comparable to our data.

²⁰ DOTPF has from time to time advertised in out-of-state newspapers and on the hotjobs.com website. However, personalized visits to out-of-state schools have been very limited in both frequency and scope. At two points in the past five years, DOTPF worked a recruiting booth in the Lower 48. DOTPF’s affirmative action plan notes that it “*continues to utilize the vacancy based online hiring system, Workplace Alaska, to fill most vacancies.*” DOTPF hopes to ultimately enhance the in-state supply of graduates by partnering with the University of Alaska in an innovative summer program for high school students. See the Alaska Summer Research Academy at www.uaf.edu/asra/index.html.

²¹ For FY 04, DOTPF’s data shows that 282 men and 58 women applied for vacancies across the six job classes.

²² With the six job classes combined, 15% of the male applicants were hired compared to 26% of the female applicants.

A significant disparity in the longevity before and after key promotions could signal unequal advancement opportunities.

Most DOTPF engineers work in the northern and central regions. As shown in Exhibit 9, the women now in these regions have generally advanced to the key milestones at a pace comparable to, or faster than, their male counterparts.

DOTPF's progress is also indicated by the median career longevity of men and women now in the three ranks. As shown in Exhibit 9, women in the northern and central regions have generally not been held in their present ranks (potential "plateaus") as long as the men.

A possible exception would be the Engineer/Architect III positions in the northern region. The total there of only two men and two women at that rank limits meaningful comparisons. However, the longer times reflected for the two women would also be consistent with careers that started over a decade ago, that is, before DOTPF's remedial efforts.

| EXHIBIT 9 <i>Up Through The Ranks</i> EXPERIENCE LEVEL OF LICENSED ENGINEERS PURSuing INTERNAL ADVANCEMENT CAREER TRACKS DOTPF DESIGN AND CONSTRUCTION DIVISIONS | | | | | | |
|---|---|--------------|---|--------------|-------------------------------|--------------|
| POSITION HELD ON JANUARY 1, 2004 | NUMBER IN INTERNAL ADVANCEMENT CAREER TRACKS | | MEDIAN YEARS AS A STATE ENGINEER | | | |
| | MEN | WOMEN | ON DATE OF LAST PROMOTION | | AS OF JAN. 1, 2004 | |
| | MEN | WOMEN | MEN | WOMEN | MEN | WOMEN |
| NORTHERN REGION | | | | | | |
| Engineer/architect III | 2 | 2 | 16.6 | 18.4 | 17.3 | 21.3 |
| Engineer/architect II | 4 | 3 | 15.3 | 13.9 | 17.8 | 14.8 |
| Engineer/architect I | 6 | 2 | 6.0 | 4.4 | 14.3 | 5.8 |
| CENTRAL REGION | | | | | | |
| Engineer/architect III | 10 | 1 | 18.4 | 8.8 | 24.2 | 11.4 |
| Engineer/architect II | 6 | 3 | 7.7 | 7.4 | 9.6 | 7.7 |
| Engineer/architect I | 8 | 3 | 5.2 | 5.6 | 9.7 | 7.6 |
| SOUTHEAST REGION | | | | | | |
| Engineer/architect III | 3 | 0 | 13.0 | — | 13.8 | — |
| Engineer/architect II | 2 | 0 | 6.0 | — | 6.7 | — |
| Engineer/architect I | 7 | 1 | 3.7 | 5.9 | 5.6 | 9.2 |

Source: state personnel and payroll records.

In the southeast region, only one woman works in the Engineer/Architect series. Data is thus too limited for a meaningful comparison of longevity in that region.

| EXHIBIT 10 | | | | |
|--|--------|---|--|--|
| ENGINEER TURNOVER WITHIN DOTPF DESIGN AND CONSTRUCTION DIVISIONS | | | | |
| <i>Percentage of 1998 Engineers Remaining Within DOTPF's Mainstream Career Track</i> | | | | |
| POSITION ON JAN. 1, 1998 | GENDER | TOTAL NUMBER EMPLOYED JAN. 1, 1998 | PERCENT REMAINING IN TRACK JAN. 1, 2001 | PERCENT REMAINING IN TRACK JAN. 1, 2004 |
| ENGINEERING ASSISTANT (I, II, or III) | Men | 135 | 62% | 49% |
| | Women | 34 | 65% | 44% |
| ENGINEER / ARCHITECT I | Men | 20 | 60% | 55% |
| | Women | 10 | 70% | 50% |
| <i>Source: state personnel and payroll records.</i> | | | | |

Turnover in recent years has varied little between the genders

Significant differences in turnover might signal that women are abandoning the mainstream career track due to frustrations over employment opportunities.

We analyzed the extent to which men and women in the career-building ranks²³ have persisted in the career track. Exhibits 10 and 11 generally show comparable rates of turnover between the men and women who were working in these positions at the beginning of 1998 and 2001. The exception would be the Engineer/Architect I positions in Exhibit 11, where the departure of just two women significantly affects the comparative percentage.

| EXHIBIT 11 | | | |
|--|--------|---|--|
| ENGINEER TURNOVER WITHIN DOTPF DESIGN AND CONSTRUCTION DIVISIONS | | | |
| <i>Percentage of 2001 Engineers Remaining Within DOTPF's Mainstream Career Track</i> | | | |
| POSITION ON JAN. 1, 2001 | GENDER | TOTAL NUMBER EMPLOYED JAN. 1, 2001 | PERCENT REMAINING IN TRACK JAN. 1, 2004 |
| ENGINEERING ASSISTANT (I, II, or III) | Men | 140 | 80% |
| | Women | 48 | 73% |
| ENGINEER / ARCHITECT I | Men | 24 | 92% |
| | Women | 8 | 75% |
| <i>Source: state personnel and payroll records.</i> | | | |

²³ The Engineering Assistant series and Engineer/Architect I.

Rehires of either gender are rare

Another type of turnover is the extent to which prior employees stay after returning to DOTPF (“rehires”). This is another factor that could signal a discouraging workplace for women engineers.

Under personnel rules and collective bargaining agreements, rehires occur within several contexts. DOTPF employees who leave State employment on good terms have rehire rights for any openings in the same job class during the next two years. Additionally, DOTPF may bring retired employees back to their same positions. College interns may be given a permanent start after completion of their studies. As part of routine recruitments, DOTPF is allowed to select a former employee that previously performed another type of work.²⁴

However, in practice, DOTPF seldom rehires its former employees into the mainstream career track for engineers. The State’s payroll system shows only 23 such rehires within the three-year period starting January 1, 2001. Most (18) of those rehires were still working at DOTPF as of late June 2004.

Ten of the 23 rehires were individuals who either returned under two-year contractual rights or after retirement. Eight rehires were done following college internships, six of which were women engineers. Just over a third of the 23 rehires were women.

Regardless of gender, rehires are not a significant factor in DOTPF’s employment of engineers.

Hiring managers have little discretion to vary pay rates

Unlike the private sector, a hiring manager at DOTPF actually has little discretion as to the pay rate at which any individual is hired. All engineer job classes have a set pay grade (range) within the classified system. The personnel code indicates that all employees are to be hired at the initial step (step A) in that grade, with the five exceptions summarized in Exhibit 12.

| |
|--|
| EXHIBIT 12 PERSONNEL CODE EXCEPTIONS TO HIRING AT LOWEST STEP IN PAY RANGE (2 AAC 07.315 – 2 AAC 07.340) |
| <ul style="list-style-type: none">• Employees promoted from within receive mechanically-computed, seniority-based step placements that prevent them from receiving a pay decrease when promoted from senior steps in lower ranges.• Employees who laterally transfer keep their existing steps.• Former employees who return to the same job class within two years continue at their pre-existing steps.• DOTPF’s human resource director can authorize hiring at an advanced step if “<i>the appointee is exceptionally qualified.</i>”• DOTPF’s human resource director can authorize hiring at an advanced step if “<i>recruitment is extremely difficult for a job class or particular position.</i>” |

²⁴ For instance, a former Engineering Technician may be ready to return to DOTPF as an Engineering Assistant.

We reviewed the 76 hirings that DOTPF conducted for the six job classes in question²⁵ during 2001. We saw no evidence that hiring managers were manipulating the personnel rules to create gender-based distinctions in the pay rates offered to successful applicants.

Out of the 76 hirings in the test period, 84% involved either the lowest step (A) or a gender-neutral, mechanical application of nondiscretionary personnel code rules mandating other steps. Seniority-based rules predominated among the latter, and civil rights laws neither require, nor permit, the State to erase seniority rights of existing public employees.²⁶

Only one of the 76 hirings involved “exceptional qualifications,” which would permit the most discretion at hiring above the lowest step. While a male engineer received the job in this case, DOTPF’s human resource director documented the distinction with very supportable justifications. There were no women applicants for the position.

The remaining 11 of the 76 recruitments involved advanced steps justified by “recruitment difficulties,” as documented by DOTPF’s human resource director. There were women applicants in only three of these recruitments.²⁷

Some women engineers perceive that discrimination still hinders their careers

We conducted a confidential survey of all DOTPF employees that currently work in the Engineering Assistant series and the first three job classes of the Engineer/Architect series. Of those surveyed, 73% (181 of 249) of the men and 71% (55 of 78) women sent us a response. Of those responding, we note that around two-thirds of both genders became DOTPF engineers after 1995.

When women were asked about discrimination in hiring women engineers during the past year,²⁸ 14% to 28% of 53 respondents believed discrimination to have occurred at least a fourth of the time (“occasionally” up through “usually”). Another 34% to 49% responded “very rarely.” The remaining 36% to 42% responded “I don’t know.”²⁹

²⁵ Engineering Assistant I, II, III; Engineer/Architect I, II, III.

²⁶ See *Firefighters Local 1784 v. Stotts*, 467 U.S. 561 (1984); 42 U.S.C. § 2000e-2(h) (“it shall not be an unlawful employment practice for an employer to apply different standards of compensation . . . pursuant to a bona fide seniority or merit system . . . provided that such differences are not the result of an intention to discriminate . . .”).

²⁷ Two of these three “recruitment difficulty” situations involved the same woman applicant who lacked a masters degree. In each of these two recruitments, DOTPF hired a male with a masters degree. However, the unsuccessful woman applicant was interviewed for four other positions during 2001 and hired for one of the latter. In the third “recruitment difficulty” situation, a male was hired but the woman applicant failed to meet the advertised basic minimum qualifications for the position.

²⁸ Our questions asked respondents to assess their experiences in the time since July 1, 2003.

²⁹ For the 53 women that answered the question, their responses varied across the indicated ranges depending upon which job class they were addressing in subparts of the question.

When women were asked about discrimination in DOTPF's assignments to desirable projects over the past year, 34% of 53 respondents believed discrimination to have occurred at least a fourth of the time ("occasionally" up through "usually"). Another 40% responded "very rarely." The remaining 26% responded "I don't know."

On the other hand, 70% of 53 responding women indicated that DOTPF had "sometimes," "often," or "usually" given them "*the opportunities to develop and apply the skills needed to enhance your career.*"

No women indicated that the path to P.E. licensing was being blocked by a lack of the requisite assignments. Among 35 unlicensed women engineers, 89% instead attributed their lack of a P.E. license to personal choice, missing longevity, or the need to pass the exam.

When asked why engineers had left DOTPF in the past year, the three most common reasons listed by both men and women were retirement, compensation, and advancement.³⁰ Only one woman indicated discrimination toward female engineers as a perceived reason, and none indicated sexual harassment.

Of the 236 engineers that responded to the survey questions, 98 of them also took the time to include their own written comments. Of the 98 engineers that provided comments to us, 25 asserted that DOTPF now provides its women engineers with opportunities that are gender-neutral and free of discrimination. Twenty-four (but not necessarily the same ones³¹) explained that uncompetitive compensation packages impair DOTPF's ability to attract and retain engineers. Eight respondents wrote about the discrimination against women engineers that they have observed over the years, some of which they perceive as continuing to exist to various degrees. Three respondents wrote about their perceptions of gender discrimination against male engineers.

While most of those responding to our survey have entered DOTPF's engineering workforce since the mid-1990s, the results show that some women perceive that their careers are still hindered by discrimination in DOTPF's employment opportunities.

³⁰ The engineers were asked to indicate the top three reasons. Retirement was selected by 170, compensation by 161, and lack of advancement opportunities by 94.

³¹ Of the 98 engineers that included written comments, some wrote about more than one issue.

FINDINGS AND RECOMMENDATIONS

DOTPF's commissioner should proactively monitor both the statistical and intangible aspects of a gender-neutral work environment.

Evaluations of employment opportunity have traditionally focused upon the degree to which various demographic groups are present or absent. Statistical analysis is an important tool in identifying possible pockets of unequal career opportunities. Targets showing the expected employment by gender are an accepted, though imperfect, measure of an employer's success in developing a gender-neutral work environment.

We recommend that DOTPF go beyond the heavily-aggregated analyses that it currently conducts for the reports required by law. Using regional gender targets for each engineering job class as guidance, DOTPF can monitor its goals of having a gender-neutral workplace.

As shown in Exhibit 8 on page 16, DOTPF's progress in employing women engineers varies across its three regions. While some variation among regions or job classes is to be expected, an overall balance of at least 13% across all regions seems a reasonable target given the statewide presence of women engineers reported in the Census 2000 Special Equal Employment Opportunity Tabulation.

The commissioner should annually publish an online report which compares those targets to the hiring that has been accomplished. The use of more focused gender targets will signal DOTPF's management when it needs to take remedial action. Our survey results indicate a perception by some employees that gender-based discrimination still persists.

The combination of some unmet gender targets and the survey results indicate that there is a continued need for some remedial actions. These actions can include:

- More rigorous recruitment for engineers in general and for women engineers in particular.
- Clear articulation by DOTPF's top management of a gender-neutral work environment as its active goal.
- Information to all employees of the internal and external resources for reporting and resolving concerns over work environment or discrimination.

We recognize that DOTPF has made considerable improvements in creating a positive work environment for those employees moving through the engineering career ladder. However, DOTPF's management needs to recognize that proactive and ongoing measures are still needed to meet its goal of a gender-neutral workplace.

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APPENDIX A

| |
|--|
| <p>Department of Transportation and Public Facilities Mandatory Underutilized Candidate Consideration Form for Workplace Alaska Hires</p> <p>Note: If there is a member of an underutilized group(s) available and interested in this position and the candidate is not selected for the position, then the Division Director or equivalent must review and approve/disapprove the proposed selection <i>prior</i> to a job offer being made.</p> <p><u>Hiring Manager completes sections 1 and either 2 or 3:</u></p> |
|--|

| | | | |
|-------------------------|---------------------------|------------------------|--------------------------|
| <u>Section 1</u> | | | |
| PCN being filled _____ | Job Class _____ | Working Title _____ | Recruitment Dates _____ |
| Hiring Manager _____ | Position Supervisor _____ | Location/Section _____ | Candidate Selected _____ |

| | |
|--|--------------------------|
| <u>Section 2</u> | |
| <input type="checkbox"/> I will not make a job offer to an underutilized candidate. I considered and/or gave an opportunity to interview to the following candidates from underutilized groups. I have listed the specific job-related qualifications that each candidate lacks. (Attach additional pages as necessary.) | |
| Name _____ | Ethnic/Gender Code _____ |
| Specific job-related reason for non-selection: _____ | |
| _____ | |
| Name _____ | Ethnic/Gender Code _____ |
| Specific job-related reason for non-selection: _____ | |
| _____ | |
| Name _____ | Ethnic/Gender Code _____ |
| Specific job-related reason for non-selection: _____ | |
| _____ | |

| | | |
|---|-------|-------|
| <u>Other candidates interviewed for this position: (optional per Division Director or equivalent).</u> | | |
| _____ | _____ | _____ |
| _____ | _____ | _____ |

| |
|---|
| <u>Section 3</u> |
| <input type="checkbox"/> No underutilized candidates applied for the position. <input type="checkbox"/> I will make a job offer to an underutilized candidate. |

Division Director or equivalent completes section 4:

| | |
|-------------------------|---|
| <u>Section 4</u> | |
| _____ | Approval to make job offer. I agree that appropriate consideration was given and specific job-related justification was provided for each underutilized candidate indicated above, if applicable, by the Appointing Supervisor. |
| _____ | Disapproval to make job offer. I disagree and have taken the following action: |
| _____ | |
| Signature _____ | Date _____ |

Attachment: Hiring Approval Request Form
 Applicant Profile and Job Qualification Summary of Selected Candidate

Rev. 7/30/99

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APPENDIX B

| <p align="center">WORKPLACE ALASKA APPLICATIONS RECEIVED BY DOTPF</p> <p align="center"><i>January 1, 2001 to December 31, 2003</i></p> | | | |
|--|-------------------------------------|--|-----------------------------------|
| | TOTAL APPLI- CATIONS | APPLI- CATIONS FROM WOMEN | PERCENT FROM WOMEN |
| <i>NORTHERN REGION</i> | | | |
| Engineer/architect III | 33 | 7 | 21% |
| Engineer/architect II | 31 | 7 | 23% |
| Engineer/architect I | 51 | 6 | 12% |
| Engineering assistant III | 225 | 36 | 16% |
| Engineering assistant II | 102 | 24 | 24% |
| Engineering assistant I | 223 | 70 | 31% |
| <i>CENTRAL REGION</i> | | | |
| Engineer/architect III | 64 | 7 | 11% |
| Engineer/architect II | 99 | 20 | 20% |
| Engineer/architect I | 83 | 13 | 16% |
| Engineering assistant III | 180 | 36 | 20% |
| Engineering assistant II | 80 | 23 | 29% |
| Engineering assistant I | 424 | 115 | 27% |
| <i>SOUTHEAST REGION</i> | | | |
| Engineer/architect III | 28 | 0 | 0% |
| Engineer/architect II | 11 | 0 | 0% |
| Engineer/architect I | 15 | 1 | 7% |
| Engineering assistant III | 45 | 5 | 11% |
| Engineering assistant II | 50 | 10 | 20% |
| Engineering assistant I | 94 | 15 | 16% |
| <p><i>Source:</i> state personnel records. Engineering Assistant I counts include recruitments for I/II flex positions.</p> | | | |

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APPENDIX C

| <i>Lateral Entry vs. Internal Advancement</i> | | | | | | | | |
|---|--------------|------------------------------|------------------|-----------------------------|--------------|------------------------------|------------------|-----------------------------|
| CAREER TRACKS OF LICENSED ENGINEERS | | | | | | | | |
| DOTPF DESIGN AND CONSTRUCTION DIVISIONS | | | | | | | | |
| POSITION HELD ON JANUARY 1, 2004 | MEN | | | | WOMEN | | | |
| | TOTAL NO. | INTERNAL ADVANCE- MENT | LATERAL ENTRY | PERCENT LATERAL ENTRY | TOTAL NO. | INTERNAL ADVANCE- MENT | LATERAL ENTRY | PERCENT LATERAL ENTRY |
| NORTHERN REGION | | | | | | | | |
| Engineer/architect III | 7 | 2 | 5 | 71% | 2 | 2 | 0 | 0% |
| Engineer/architect II | 5 | 4 | 1 | 20% | 4 | 3 | 1 | 25% |
| Engineer/architect I | 10 | 6 | 4 | 40% | 2 | 2 | 0 | 0% |
| CENTRAL REGION | | | | | | | | |
| Engineer/architect III | 13 | 10 | 3 | 23% | 3 | 1 | 2 | 67% |
| Engineer/architect II | 15 | 6 | 9 | 60% | 3 | 3 | 0 | 0% |
| Engineer/architect I | 11 | 8 | 3 | 27% | 4 | 3 | 1 | 25% |
| SOUTHEAST REGION | | | | | | | | |
| Engineer/architect III | 6 | 3 | 3 | 50% | 0 | 0 | 0 | — |
| Engineer/architect II | 2 | 2 | 0 | 0% | 0 | 0 | 0 | — |
| Engineer/architect I | 9 | 7 | 2 | 22% | 1 | 1 | 0 | 0% |
| <p>Internal advancement includes engineers whose career track as a state engineer began as an Engineering Assistant I, Engineering Assistant II, or equivalent entry-level position with the State of Alaska. Lateral entry includes engineers who instead began in positions above Engineering Assistant II.</p> <p align="center"><i>Source:</i> state personnel and payroll records.</p> | | | | | | | | |

3132 CHANNEL DRIVE
JUNEAU, ALASKA 99801-7898

TEXT : (907) 465-3652
FAX: (907) 586-8365
PHONE: (907) 465-3900

OFFICE OF THE COMMISSIONER

December 22, 2004

Pat Davidson, Legislative Auditor
Legislative Budget and Audit Committee
Division of Legislative Audit
PO Box 113300
Juneau, AK 99811-3300

Dear Ms. Davidson:

Thank you for the opportunity to respond to the findings and recommendations contained in the preliminary audit report on Department of Transportation and Public Facilities (DOT&PF), Employment Opportunities for Women Engineers, November 8, 2004. The following is our response:

Recommendation 1

DOT&PF's commissioner should proactively monitor both the statistical and intangible aspects of a gender-neutral work environment.

The audit findings and recommendations are generally reasonable. In fact, these are the very same things that the department focuses on in the affirmative action steps of our Internal EEO Affirmative Action Plan. Gender-neutral is interpreted here to mean when the work force mirrors the labor market census. The department's ultimate goal is to reach parity for both minorities and women in all of our job classes, including those that were the focus of this audit. Annual analysis of workforce underutilization and establishing hiring goals is an ongoing department responsibility. Although the federal regulations governing our Internal EEO Program require that this analysis be done by EEO-4 occupational categories, separate analysis for the engineering classes you have audited can be accommodated. The hiring goal accomplishments have been published in a hard copy version, but moving toward on-line access is reasonable. The department understands that goals are a tool, but to reach a gender-neutral work environment requires an attitude. This gender-neutral attitude has been, and will continue to be, promoted from management through to its hiring managers.

As you commented several times in your report, due to a scarcity of positions in total and by specific job class, and due to a scarcity of applicants (men and women) in Southeast Region, setting regional targets will not be meaningful.

The department is currently in the process of adopting a hiring policy requiring the use of hiring panels and affirming mandatory interviews of all qualified underutilized female and minority applicants in Ranges 16 and above. This policy is one of the affirmative action steps being implemented from our most recent review of workforce underutilization.

Additionally, through our Internal EEO Program the department will reaffirm through memo and on-line notice of the Equal Employment Opportunity Policy for all department employees. This information will also provide a notice to employees on the different avenues to report and resolve concerns of unlawful discrimination.

The most difficult undertaking will be more rigorous recruitment for engineers in general. Workplace Alaska is the method by which classified job classes are filled in state government. Personnel Rules normally restrict recruitment to applicants living in Alaska. However, since February of 2000, the department has been allowed to recruit on a national basis for engineering positions because of recruitment difficulties. Aside from recruiting at colleges and high schools, there are not similar avenues allowed by the State Personnel Act to attract new engineers that are currently used by the private sector and federal government. This is further exacerbated by the substantially lower pay for state employees vs. federal and private engineering firms. A task force will be formed of regional and statewide staff to review opportunities for further recruitment within our existing resources.

This audit report was well researched, well written and documents the progress that DOT&PF has made in setting the climate for a better work place for men and women. I wish to reiterate that we believe in a gender-neutral environment and we strive to hire the most qualified employees.

If you require any further information, please contact Nancy Slagle at 465-8974.

Sincerely,

Mike Barton
Commissioner

cc: Gordon Keith, Central Regional Director, DOT&PF
John MacKinnon, Deputy Commissioner of Highways & Public Facilities, DOT&PF
Andrew Niemiec, Northern Regional Director, DOT&PF
Gary Paxton, Southeast Regional Director, DOT&PF
Judy Porter, DOA/DOP Human Resource Manager for DOT&PF
Nancy Slagle, Director, Division of Administrative Services, DOT&PF