

PROJECT DELIVERY WORKFORCE MANAGEMENT REVIEW

Requested by:

American Association of State Highway
and Transportation Officials (AASHTO)

Standing Committee on Highways

Prepared by

R. C. Johns, G. Baas, and T. Helms, Jr.
Center for Transportation Studies
University of Minnesota
Minneapolis, Minnesota

A. Bloch and C. Marcella
Howard/Stein-Hudson Associates, Inc.
New York, New York

March 2007

The information contained in this report was prepared as part of NCHRP Project 20-07/205,
National Cooperative Highway Research Program, Transportation Research Board.

NCHRP Acknowledgements

This study was requested by the American Association of State Highway and Transportation Officials (AASHTO), and conducted as part of the National Cooperative Highway Research Program (NCHRP) Project 20-07. The NCHRP is supported by annual voluntary contributions from the state Departments of Transportation. Project 20-07 is intended to fund quick response studies on behalf of the AASHTO Standing Committee on Highways. The report was prepared by a research led by Robert Johns of the University of Minnesota. The work was guided by a task group which included J. Richard Capka, John Conrad, King Gee, Gary Hoffman, Randy Iwasaki, Douglas Macdonald, Debra Miller, Leni Oman, Mah Patel, Neil Pedersen, Gordon Proctor, Philip Shucet, Jim St. John, and Julie Zirlin. The project was managed by Christopher Hedges, NCHRP Senior Program Officer.

Disclaimer

The opinions and conclusions expressed or implied are those of the research agency that performed the research and are not necessarily those of the Transportation Research Board or its sponsors. The information contained in this document was taken directly from the submission of the authors. This document is not a report of the Transportation Research Board or of the National Research Council.

TABLE OF CONTENTS

ACKNOWLEDGMENTS	v
ABSTRACT	vi
EXECUTIVE SUMMARY	vii
CHAPTER 1: Introduction	1
CHAPTER 2: Summary of Available Knowledge	3
2.1 TASK OBJECTIVE	3
2.2 FINDINGS SUMMARY	3
2.3 LITERATURE REVIEW	4
2.3.1 Studies	4
2.3.2 Summary	7
2.4 CEO INTERVIEWS	7
2.4.1 Outsourcing	7
2.4.2 Workforce Management Issues	10
2.5 HUMAN RESOURCES AND OPERATIONS STAFF INTERVIEW RESULTS	11
2.5.1 Interview Methodology	11
2.5.2 Interview Results Summary	12
2.5.3 Status of Outsourcing	14
2.5.4 Reasons for Outsourcing	15
2.5.5 Contracting	16
2.5.6 Human Resources	18
2.5.7 Succession	26
2.5.8 Summary	27
2.6 CONCLUSION	27
CHAPTER 3: Project Delivery Workforce Management Workshop	30
3.1 ANNOTATED AGENDA FOR WORKSHOP	30
CHAPTER 4: Proceedings of Workforce Management Workshop	34
4.1 WORKSHOP INTRODUCTIONS	34
4.2 PRESENTATION	35
4.2.1 Outsourcing	35
4.2.2 Workforce Management	35
4.2.3 Inspiration and Innovation	36
4.3 DISCUSSIONS	37
4.3.1 Challenges	37
4.3.2 Best Practices	39
4.4 ADVANCING THE STATE OF PRACTICE	43
4.4.1 Developing a CEO Workshop	43
4.4.2 Transferring Best Practices	45
4.4.3 Research Action Plan	46
4.5 CONCLUDING REMARKS	49

APPENDIX A: State Departments of Transportation Interviewed	50
APPENDIX B: Challenges Identified for Outsourcing and Human Resources	51
APPENDIX C: Targeted State Human Resources Programs and Initiatives	53
APPENDIX D: Workforce Management Workshop Documents.....	54

ACKNOWLEDGMENTS

The research reported herein was performed under NCHRP Project 20-07 (205) by the Center for Transportation Studies at the University of Minnesota. The Center for Transportation Studies was the contractor for this study. The Center for Transportation Studies utilized the expertise of Howard/Stein-Hudson Associations, Inc. in completing this study.

Robert C. Johns, director of the Center for Transportation Studies, was the principal investigator. The other authors of this report are Gina Baas, director of communications and outreach, and Thomas Helms, Jr., program coordinator, of the Center for Transportation Studies, and Arnold Bloch, principal, and Christie Marcella, transportation planner, of Howard/Stein-Hudson Associates, Inc.

The work was done under the general supervision of Mr. Johns.

ABSTRACT

This report presents the results of a study of challenges and best practices in outsourcing and workforce management for state departments of transportation (DOT). The study included developing a summary of available knowledge and a workshop with state DOT human resources personnel. The summary of available knowledge was accomplished through a literature review and interviews with state DOT human resources and operations personnel, as well as a select group of state DOT chief executive officers (CEO). The workshop for state DOT human resources personnel was held December 7 and 8, 2006 on the campus of the University of Minnesota. The workshop included discussion of issues and best practices in the areas of outsourcing and workforce management. At the conclusion of the workshop, participants recommended areas for future research initiatives and potential topics for a CEO-level workshop on DOT human resources issues.

EXECUTIVE SUMMARY

State Departments of Transportation (DOTs) face an increasingly difficult environment in which to manage their project delivery workforces. The confluence of reductions in state transportation budgets, outdated DOT recruiting and retention practices, a shrinking pool of entry- and mid-level technical personnel, and the looming retirement of current DOT staff has the potential to produce a perfect storm in which state DOTs will confront both workforce management and operational challenges.

Recognizing the challenges before them, state DOTs are beginning to take steps to avert a potential workforce crisis. The most proactive DOTs are revising agency policies to address recruitment, retention, and retirement issues while developing innovative methods to utilize external staff in project delivery. This project identified the challenges in workforce management and outsourcing facing DOTs and best practices to mitigate those challenges. In addition, the project identified areas in which more research is required and topics for a chief executive officer (CEO) level workshop on workforce management and outsourcing issues.

A review of the relevant literature on workforce management and outsourcing, as well as interviews with 45 human resources and operations personnel from 27 states and six state DOT CEOs, revealed that, despite substantial differences between states due to unique economic, geographic, and political circumstances, there are several common trends in human resources practices and outsourcing across state DOTs. The overarching theme expressed by all of the interviewees is that state DOTs are evolving from project delivery to project management focused organizations.

The most pressing human resources issue facing DOTs is the recruitment and retention of personnel, especially engineers. Salary limitations and inflexible state regulations/union rules hamper DOTs in recruiting new employees and preventing existing employees from moving to the private sector. A secondary issue for human resources managers is the replacement of skills and knowledge as older employees retire which requires some form of succession planning.

The use of outsourcing is pervasive in all of the DOTs interviewed. Contractors are utilized both for single projects and the provision of ongoing services. All of the states employ contractors as a workload management tool when there is more work than the DOTs can complete themselves. Given the difficulty in hiring—and dismissing—employees, outsourcing provides DOTs with workforce flexibility. In addition, the current political climate in many states makes outsourcing a preferred option for DOTs. The issues associated with outsourcing for state DOTs include standardized procedures for large-scale contracts, streamlined procedures for smaller contracts, effective ladders of communication, and grievance procedures for both the DOTs and contractors.

The project culminated in a workshop for state DOT human resources and operations personnel held December 7 and 8, 2006, on the campus of the University of Minnesota. Representatives from ten state DOTs and the Federal Highway Administration (FHWA) participated in the workshop. The participants identified challenges facing their organizations, best practices being utilized to overcome those challenges, and advancing the state of practice through the transfer of best practices and a workshop for state DOT CEOs.

The workshop identified the following six major challenges with outsourcing:

- Evaluation methodology
- Effective partnering
- Dealing with consultants
- Internal employee morale
- Procedural issues
- Understanding the public interest

State DOTs find it difficult to evaluate outsourced work in terms of value to determine if there are cost-effective alternatives to outsourcing. The prevalence of outsourcing and its continued role in the delivery of DOT programs and services necessitates developing and maintain partnerships with the private sector. This requires clearly defining roles and expectations for both agencies and contractors, and effective internal and external communications.

The participants identified the following four major areas of concern in workforce management:

- Approach/visioning
- Performance and employee management
- Recruitment
- Skills development/maintenance

The participants indicated that a lack of access to senior level management hinders effective strategic visioning for DOT workforces. There is an urgent need for strategic visioning to address both short-term and long-term workforce requirements. Organizational and structural inflexibility is the primary problem for DOTs when competing with private industry in the recruitment and retention of employees. In addition, DOT training programs are not changing as DOTs evolve, leaving employees, particularly newer hires, with a skills deficit, especially in the area of project management.

The discussion at the workshop generated many best practices for outsourcing and workforce management. Best practices for outsourcing included:

- Developing effective overhead calculators
- Conducting engineering cost studies
- Utilizing master contracts and on-call lists
- Using “master consultants” for project oversight
- Holding pre-project partnering meetings
- Using DOT staff as resident engineers
- Rating consultants
- Assessing the need to outsource specialty work
- Leveraging knowledge transfer opportunities

Best practices for workforce management included:

- Starting the college recruiting process during the fall semester
- Offering flexible internships
- Promoting public sector work as a lifestyle job
- Offering educational incentives
- Implementing formal mentoring programs
- Encouraging certification programs
- Utilizing signing bonuses spread over a period of time
- Offering referral bonuses
- Allowing overtime pay
- Setting group performance measures

- Rotating staff through positions

The workshop also identified research needs in the areas of outsourcing, strategic business planning, and workforce management. The specific research needs for outsourcing and strategic business planning included cost/benefit analyses of the efficiency and effectiveness of outsourcing, performance metrics for workforce management, and methodologies to improve outsourcing processes. The specific research needs for workforce management included training and competencies, innovative compensation and classification systems, compensation studies, and recruitment and retention.

Identifying appropriate topics for a CEO-level workshop about workforce management issues was one of the primary goals of the workshop. The topics recommended by the participants included: creating a strategic package of “tools” to address workforce challenges, assessing the political climate to determine its impact on implementing human resources initiatives, mitigating risk by reading trends in the workforce, standardizing and implementing appropriate performance measures, addressing the dwindling pipeline of engineers, and maintaining a two-way flow of information with human resources staff. The attendees recognized that because CEOs have extremely full schedules increasing the awareness of these issues is a precursor to holding a workshop. Briefings, presentations, and issue papers about workforce management issues and their relationship to the overall goals of state DOTs were suggested as means of raising the profile of human resources and outsourcing with CEOs.

In addition, the workshop attendees recommended adjusting the committee structure of American Association of State Highway Transportation Organizations (AASHTO) to place a greater emphasis on workforce issues. The current AASHTO Human Resources Subcommittee is not as effective as desired. AASHTO could elevate the importance of workforce issues by creating a standing committee on workforce management. The participants also recommended adding a standing committee for strategic planning to the AASHTO committee structure. The participants believed that as chairs of AASHTO standing committees, CEOs could successfully increase the importance of workforce management and strategic planning issues.

CHAPTER 1: Introduction

For most state Departments of Transportation (DOT) in the United States, the challenges they face in terms of workforce management will not be going away in the near future. In fact, if not addressed, they are likely to exacerbate into a crisis situation. With smaller budgets, recruiting problems, and the baby boom generation set to retire throughout the near future, DOTs are finding it more and more difficult to maintain a technically qualified workforce that can meet the public's transportation needs.

The objective of NCHRP Project 20-7 Task 205 is to develop a synthesis of best practices for workforce management and planning to ensure the required levels, structure, and expertise of DOT employees and private contractors to deliver the products and services required of a state DOT to meet the needs of the public. A key task in this study was to conduct a workshop to discuss issues and possible solutions, as well as key research needs. The workshop, held at the University of Minnesota's Minneapolis campus on December 7 and 8, 2006, had 12 participants representing 10 states and two participants from the U.S. Department of Transportation's Federal Highway Administration (FHWA) and the NCHRP project team.

The workshop offered state DOT human resources and operations managers the opportunity to share with one another their experiences—positive and negative—with workforce management and outsourcing. While the two topics (workforce management and outsourcing) were approached as separate discussion topics, it became evident to the group that they are inextricably connected: *decisions about workforce management cannot be made without looking at outsourcing and vice versa*. With that in mind, discussion topics were divided into three major topics:

- Challenges
- Best Practices
- Advancing the State of Practice

Prior to the event, the University of Minnesota's Center for Transportation Studies (CTS) and Howard/Stein-Hudson Associates, Inc. (HSH) conducted interviews with 6 state DOT chief executive officers (CEOs), 27 human resources managers/staff, and 28 operations

managers/staff. The interviews represent 27 states, and results of those interviews were presented to the participants of the workshop. The interviewees provided an overview of how DOTs across the country are addressing the increasing trend toward more outsourcing. In addition, interviewees were asked how their internal staff and hiring practices are affected by decisions to outsource.

CHAPTER 2: Summary of Available Knowledge

2.1 TASK OBJECTIVE

The purpose of this chapter is to explain the goals and accomplishments of the first task assignment of the National Cooperative Highway Research Program (NCHRP)'s *Project Delivery Workforce Management Review*. The overall goal of the management review is to review the state of practice in workforce management at state Departments of Transportation (DOTs) and explore ideas and practices in workforce management and planning. The first task (Task 1) of this study is a summary of available knowledge that will inform the program and facilitation of a later workforce management workshop involving state DOT personnel. The NCHRP panel established the parameters of Task 1 to be the following:

- Establish the extent and manner by which state DOTs outsource various facets of their responsibilities.
- Determine what aspects of these arrangements with private firms function well and which do not.
- Determine what human resources strategies DOTs employ to help them retain and recruit staff in the face of widespread contracting of traditionally maintained DOT responsibilities.

2.2 FINDINGS SUMMARY

The practice of outsourcing has increased considerably since the NCHRP published *Synthesis Report 246: Outsourcing of State Highway Facilities and Services* in 1997. To varying degrees, DOTs contract almost all types of services. Mostly this is due to the fact that they have more work than they can handle. However, there is some disagreement about whether outsourcing is more cost-effective than in-house work. Every state has a unique political, administrative, and budgetary climate in which its DOT responsibilities have developed.

Though there are some general trends with regards to how contracts are handled, there is very little actual uniformity. Most DOTs contract work out by issuing standard Request for Proposals (RFPs) to local private contractors to take responsibility for various functions. Some contract out solely on a “project-by-project” basis, while others engage private firms to maintain large stretches of roads and highways. Likewise, some DOTs prefer the use of “asset-management” based contracts while others prefer “performance-based” ones. DOT opinions of

contractors also differed between states. Some had formed very good relationships with private firms while others had more contentious relationships and were unhappy with the quality of contractors. Meanwhile, the largest obstacle for DOT human resources personnel is the recruitment and retention of qualified engineers.

All in all, both the literature and interviewees agreed that the role of DOTs is changing from that of an organization that performs services to one that manages the work of others. The reported success of state outsourcing arrangements generally coincided with the extent to which the particular state DOT had not only grasped that fact, but embraced it.

This task report includes a summary of the background literature used to initially define and understand the outsourcing phenomenon. The following two sections summarize the interviews conducted with state DOT executives as well as with management-level operations and human resources personnel. The interview methodology, goals, and conclusions are included. The last section is a conclusion of the findings.

2.3 LITERATURE REVIEW

Outsourcing tasks and key functions is a viable alternative for DOTs faced with limited resources and a rapidly increasing demand for services. The traditional practice of outsourcing minor tasks and functions is now a routine part of program delivery; however, it remains a controversial issue. There is also a concerted effort underway to improve staff retention as a way to decrease the need for outsourcing. The studies summarized here address state DOT workforce challenges, the growing concern surrounding the effects of outsourcing, and a relatively new concept that incorporates outsourcing major DOT functions and services.

2.3.1 Studies

NCHRP: Managing Change in State Departments of Transportation

A recent NCHRP study prepared by Texas Transportation Institute (2001), *Managing Change in State Departments of Transportation*, identifies two critical workforce problems facing state DOT's today: an aging employee population and the need for personnel who can utilize new skill sets in technology. With almost two-fifths of state and local government

employees eligible to retire within 15 years of the document's release, state DOT's need to confront the resultant workforce challenges associated with the loss of a large number of senior personnel and experienced staff.

The study highlights recruitment and retention as DOTs' top staffing priorities, outlining current innovative workforce strategies. The report identifies a number of trends, including streamlining the employment process, instituting bonus programs for new hires, increasing salary levels and establishing employee satisfaction programs. Additionally, the report notes that professional development programs are receiving increased attention as a method to develop employees' abilities. DOTs also show considerable interest in implementing succession-planning activities as a practical way to avoid future problems.

Moreover, the report identifies several areas of future research that could effectively assist state DOTs as they continue to confront these issues. These concepts include:

- A detailed case study of succession planning and core competencies—both in state DOTs and the private sector
- A comprehensive survey and description of programs in state DOTs that recruit or develop information technology personnel
- A comprehensive survey and description of recruitment and retention programs for civil engineering and planning staff
- A review of private sector initiatives aimed at retaining employees
- An examination of mentoring programs, including reverse mentoring

NCHRP: State DOT Outsourcing and Private Sector Utilization

In 2003, Tom Warne and Associates conducted a study for NCHRP as an update to the 1997 *NCHRP Synthesis Report 246: Outsourcing of State Highway Facilities and Services*. Acknowledging that outsourcing had grown rapidly in the years since the initial report was published, the following report showed outsourcing growth to be strongest in design activities, followed by right-of-way, maintenance, operations and planning activities.

This NCHRP study also reported that the criteria used to make the decision whether or not to outsource is a significant area of interest to state DOTs. Surveys proved that staff restraints, specialty skills and equipment are the prevailing reasons DOTs choose to outsource. There were also times when leadership in state government mandated outsourcing. The study

illustrates that noteworthy differences occurred among states regarding procurement of services and in determining if the outsourcing is effective or successful.

The report concludes by noting that DOTs will likely experience a continued increase in outsourcing. Staff limitations such as lack of experience, lack of technological knowledge, and a shrinking employee base will stimulate this growth and contribute to states improving the process to benefit their customers.

NCHRP: Outsourcing of State DOT Capital Program Delivery Functions

Conducted by Science Applications International Corporation Transportation Policy and Analysis Center (2003), the objective of the NCHRP study *Outsourcing of State DOT Capital Program Delivery Functions* was to build support for DOTs on the outsourcing of major program responsibility. The authors acknowledge that outsourcing functions and services that are central to the main mission is a new concept and DOTs have not yet defined the parameters for this model of outsourcing. Very little published information is available and state DOT professionals continue to be unfamiliar with this topic.

The report observes that the most common type of capital program outsourcing features some form of design-build concept. The study also addresses outsourcing asset management maintenance projects that include broad geographic areas or major systems.

The literature addresses the fact that outsourcing major DOT functions can create discomfort for some DOT's because it involves delegating authority and associated decision making previously reserved for DOT leaders. States in the study that are engaged in successful outsourcing practices cited two primary reasons for the need to outsource capital programs:

- Accelerated programs that have specifically designated funds or newly available resources to address a large identified need backlog
- Utilizing the concept of capital program outsourcing to devise a deliberate strategy for handling the transportation system's normal program growth

2.3.2 Summary

Outsourcing minor functions or capital programs and retaining a skilled workforce remain major challenges facing the transportation community today. The reports cited above offer considerable information to assist state DOT's as they look for ways to maximize their effectiveness and manage customer satisfaction.

2.4 CEO INTERVIEWS

As part of Task 1 of NCHRP Project 20-7 Task 205 "Project Delivery Workforce Management Review," The Center for Transportation Studies at the University of Minnesota, conducted interviews with six state DOT chief executive officers (CEOs). The purpose of these interviews was to gain an executive-level perspective on the workforce management issues confronting DOTs and provide a context in which to understand the input received from interviews with DOT human resources and operations staff.

With one exception, the CEO interviews were conducted over the telephone and each interview was approximately 30 minutes in length. To maximize the information received during the interviews, each CEO received a short description of the project along with several questions to facilitate discussion. The focus of the interviews was the role of outsourcing in DOTs with some follow-up questions pertaining to general workforce management. The six states interviewed—Maryland, Minnesota, Ohio, South Carolina, Utah, and Washington—were selected based on the recommendations of the NCHRP Project 20-7 Task 205 panel.

2.4.1 Outsourcing

General Trends

Outsourcing, to varying degrees, is already common practice in all of the states interviewed. In addition, all six of the CEOs indicated that the amount of work outsourced to the private sector will continue to increase in the future. The primary reason for the growth of outsourcing cited by the CEOs is fiscally constrained state budget environments that limit the ability of DOTs to hire additional employees and, in some cases, actually result in a reduction in the size of the DOT workforce.

The largest area of outsourcing in all six states is design and engineering services. The percentage of these activities provided by private contractors and consultants ranged from 50 to 85 percent. However, the amount of design and engineering services outsourced fluctuates from year to year and is driven by volume of work rather than needing access to qualified professionals. As one CEO explained, “Engineering companies take off our peaks.”

The CEOs also identified pavement marking, mowing, snow plowing, and rest area maintenance as activities that are successfully outsourced. For example, one state uses private contractors for up to 70 percent of its snowplowing. Another state was able to entirely outsource rest area maintenance business by utilizing public/private partnerships. However, DOTs have encountered limits in their ability to outsource. A state DOT using private contractors for mowing found that it received bids for mowing on interstate highways but not on rural highways.

The same state also discovered that the cost-effectiveness of outsourcing guardrail maintenance varied greatly by geographic district. In general, it seems that predictable jobs are more easily outsourced while unpredictable tasks, such as filling potholes and other quick-response activities, are more difficult to outsource in a cost-effective manner.

Two potential areas for outsourcing in the future that the CEOs identified are highway maintenance and right-of-way acquisition. One state launched a five- to eight-year experimental program in contracting out maintenance for portions of a highway to determine if it is a cost-effective option in the long run. Several states are exploring opportunities to outsource right-of-way acquisition, as well as environmental compliance activities due to the complex nature of the work and the specialized knowledge and experience required to achieve successful outcomes in these areas. One CEO also mentioned that for certain “mega-projects” the state would pursue joint ventures, with the consultants actually providing project oversight.

Impacts of Outsourcing

All six CEOs identified the changing skill set required of DOT employees, particularly engineers, as the biggest impact of outsourcing. In particular, the outsourcing of design and engineering services requires DOT personnel to assume more project management-oriented roles

to oversee multiple projects. As one CEO put it, “Engineering management is becoming the focus of engineering jobs (within DOT).” Another CEO explained that as a result of this paradigm shift, many more project managers will be hired. A third CEO expects to hire more college-educated business and finance majors, as well as recruit for management positions.

As a result of this need for the skill set of DOT employees to evolve, training programs must also change. One state is already spending much more time on training and policies/procedures for contract managers, including how to conduct financial and technical reviews. Although project management training is seen by the CEOs as a key to improving performance, the reaction by DOT engineers has been mixed. Some CEOs are reluctant to curtail technical training, especially for certain types of highly specialized engineers.

The CEOs acknowledged that increased outsourcing of DOT functions and the resulting change in personnel roles and responsibilities will eventually lead to structural changes within each DOT. However, there was no clear consensus on what structural changes would occur and at what pace. Also, the CEOs believed that other factors, such as succession planning and demographics, would play a larger role in driving structural change than outsourcing. Still, one CEO did predict that his organization will look completely different in ten years.

Challenges and Opportunities

The largest challenge in outsourcing for DOTs seems to be determining what activities can be successfully and cost-effectively outsourced. One CEO remarked that outsourcing is only successful when the DOT finds the right private company and negotiates the right contract with that company.

Two CEOs mentioned the challenge of dealing with legislators regarding outsourcing. Some legislators want to outsource as many activities as possible while others believe that outsourcing is too expensive and that the DOT should do more work itself. These divergent political beliefs highlight the difficulty in comparing internal and external costs to determine whether or not outsourcing is truly a cost-effective practice.

Another concern for the CEOs is the loss of technical expertise in the DOT. As more activities, especially design and engineering services, are outsourced and the DOT evolves to focus more on project management and contract administration, the agency is likely to experience the departure of highly skilled and experienced employees.

One CEO expressed reservations about the responsiveness of private companies. When the DOT maintains a road, the CEO can ensure that work gets done in response to customer or legislator complaints. However, a private contractor may not respond to complaints with the same alacrity. The CEO also questioned whether a private contractor would exhibit the same ownership over the highways that DOT employees tend to feel.

Two of the CEOs identified innovation as a major opportunity for outsourcing. Both believed that private contractors are likely to be more innovative than DOTs and operate in a more cost-effective manner.

2.4.2 Workforce Management Issues

Beyond outsourcing, the six CEOs interviewed were asked to discuss the major workforce management issues that DOTs must address both now and in the near future. In addition, the CEOs were invited to share any successful strategies for ameliorating those issues currently being implemented by their agencies.

Recruiting and Hiring

The biggest workforce management issue currently facing DOTs is recruiting and hiring qualified personnel, particularly engineers. All but one of the CEOs identified this as a serious issue and blamed low salaries for professional services as the cause of the problem. For example, one CEO noted that the entry level salaries for engineers in his organization are 20 to 25 percent lower than in the private sector. Several CEOs mentioned that DOT salaries are also generally lower than those offered by local governments. In addition, the changing national demographics have made higher salaries more appealing than generous benefit packages, the traditional lure of the public sector.

Retention

Although the states are experiencing difficulty in attracting qualified personnel, once an employee is hired s/he tends to stay with the DOT. In one state, the turnover rate for the DOT is less than 10 percent and for engineers less than 5 percent. The CEO attributed this to the DOT's four-year training program for new engineers, which includes a guarantee of passing the professional engineer (PE) exam. In addition, the CEO noted that the DOT has greater flexibility than most to adjust employee salaries, allowing the agency to retain the "star performers" who figure into long-term plans. Another CEO extolled the leadership programs, career ladders, and succession planning as a means of retaining DOT employees. Both CEOs specifically mentioned ensuring that new engineers are assigned to work on complex projects to generate excitement.

Several of the DOTs attempt to recruit engineers who want to return to DOT after working in the private sector. Two of the CEOs indicated a strong willingness to try to welcome engineers with prior DOT experience back to the agency. They also mentioned that they make a point of ensuring that employees leave the DOT on good terms in an effort to facilitate a potential return to the agency in the future. Another CEO noted that DOT has attracted a high percentage of female mid-career engineers by stressing a family-friendly working environment.

2.5 HUMAN RESOURCES AND OPERATIONS STAFF INTERVIEW RESULTS

The NCHRP directed the consultant team to interview both human resources personnel and DOT employees or their contractors with knowledge or expertise in overseeing contracting (outsourcing) arrangements. This section summarizes the two sets of interviews: interviews with 27 DOT directors of human resources, and interviews with 18 DOT operations staff. A list of state DOTs interviewed is attached in Appendix A.

2.5.1 Interview Methodology

Interview Preparation

In order to gather a pool of potential interviewees germane to the review's scope, contact information for candidates came from a variety of sources. For the human resources component of the review, the interview team was provided a list of the AASHTO Human Resources Subcommittee members: mostly HR directors representing all 50 state DOTs and Puerto Rico.

The interview team then gathered contacts for the outsourcing component from NCHRP panel and the AASHTO Highway Subcommittee on Systems Operation and Management. The consultant team then submitted a draft interview guide to the panel for their review and comment. This interview guide was then sent out to the list of contacts.

Conducting Interviews

A total of 115 DOT operations and human resources personnel were contacted via e-mail between February and May 2006. Scheduling and/or interview follow up calls were made throughout the Spring. E-mails sent to contacts stated the purpose of the review, the type of information being requested, and a reminder that they would be contacted within the next three weeks. To obtain a degree of candidness, they were also informed that all opinions expressed would be confidential. Several interviewees did seek reassurance that their remarks would in fact remain confidential, leading the interview team to suspect that the confidentiality clause did lead to some degree of openness of response that might not have otherwise been obtained. The interview team contacted 55 human resources and 60 operations personnel by e-mail and telephone for interviews, including follow up calls. This led to a total of 45 interviews completed: 27 with human resources and 18 with operations.

2.5.2 Interview Results Summary

Summary Methodology

There were two separate groups contacted for interviews—operations and human resources personnel. Though the number of operations personnel contacted was higher, human resources staff had a greater response rate, and thus represent a greater number of responses. As mentioned above, all responses were confidential, and in no case are any comments or opinions attributed to any particular individual or state. Specific states are only mentioned to highlight particular programs and policies they currently operate. To further shield interviewees identities, they are all referred to as “she,” where use of a personal pronoun is appropriate.

Interview Summary Results

On the whole, the human resources responses were longer and more detailed. The operations contacts’ responses were mixed. This is partially due to the variety of job titles

contacted (auditors, contract managers, budget/finance directors, chief engineers, etc.), but also because different DOTs assign workloads to different individuals even with the same title. For example, an individual with the title of “chief contract manager” in State X may work very closely with outsourced contracts, be familiar with the pros and cons of their application, and ultimately make a fruitful interview contact. Someone with the same title in State Y may only be an expeditor of contracts and know very little about “what works” and “what doesn’t” with regards to outsourcing arrangements.

Outsourcing

The scope and breadth of contracted services at DOTs is so extensive, it was difficult for any one operations interviewee to give a complete picture. The practice of contracting services out was so prevalent, many required a more specific definition of “outsourcing” to begin addressing the question. Everyone interviewed stated that the level of outsourcing/contracting had increased in the past 10 years. For all but two of 18 interviewees, contracting was performed primarily because DOTs had more work than their staff could perform. Design, planning, maintenance, and construction consultants were the most numerous contracts. Three of the most repeated challenges with regards to outsourcing arrangements were dealing with cumbersome state purchasing/contracting procedures, determining the value of their own work relative to that of private contractors, and occasional communication gaps between consultants and DOT project managers. Six operations personnel described problems in dealing with contractor personnel turnover and skills retention. This was especially true with ice and snow removal. With regards to design work, three interviewees felt they spent too much time and money checking contractors’ work when it would be more cost-effective to do the work themselves. A matrix of outsourcing challenges and focus areas is found in Appendix B.

Human Resources

The most common concern among HR directors/assistant directors, directors/deputy directors was the recruitment and retention of entry-level engineers. Due in equal measures to a shortage of engineering students nationwide and a perceived inability to compete with private firms and local government agencies, obtaining and keeping staff was considered a major challenge. According to interviewees, another issue was the intransigence of state regulations

with regards to personnel maintenance. Conformance to civil service rules and other public budget guidelines “handcuff” (in the words of one HR director) personnel’s ability to effectively and efficiently allocate resources, provide incentives to join and remain with the DOT, and prepare for retirements and the subsequent loss of key skill sets. Most interviewees expressed a desire to be free of the more restrictive of these regulations. Finally, there was some concern about the lack of “top-down” direction and visioning for the future of the DOT. A matrix of human resources strategies and challenges is found in Appendix C.

2.5.3 Status of Outsourcing

Introduction

Outsourcing was pervasive at every DOT interviewed. Most utilized contractors both for single projects and the provision of ongoing services, such as traffic monitoring and highway mowing. They all contracted design and construction work—ranging from 85 percent to 100 percent of this work. Maintenance work (road repaving, highway mowing, etc.) was also heavily outsourced, ranging from 50 percent to 100 percent. Roadway operations and maintenance were also heavily outsourced. Some states prefer to bring private employees into work directly with DOT staff, others contracted whole facilities and stretches of road to contractors. Planning was also a task performed by private contractors working for DOTs. Corridor studies, right-of-way access, and socioeconomic studies were rarely reported done by state employees. Eight states interviewed also contracted some of their human resources work, usually for worker retraining and payroll management. Reasons for outsourcing generally involved the need to supplement staff levels in the face of increasing workloads and a political climate more favorable towards the private sector than state government.

Depending on the size of the job involved, all DOTs managed their contractors via a standard RFP procedure, working with a list of qualified vendors. Most interviewees were confident that this process, while somewhat cumbersome, did ensure that qualified vendors would be chosen. All states interviewed had a system of qualifications checking. One manager who was familiar with the contracting procedure complained that contractors in his state did not give specific enough information when applying to qualify for contracting work. Rather than giving specifics on contractor skills and personnel, the DOT receives promotional literature.

The single most articulated concern about outsourcing arrangements was in the negotiation of the contract itself. Of the 10 operations personnel interviewed, four were not confident that their state was always able to negotiate the best deal from the contractor. This was due partially to the fact that DOTs expressed the concern that they are negotiating from a disadvantaged position (the feeling that the DOT needs the contractor more than the contractor needs the DOT), but also in the case of some states, that there is no standard, documented procedure for managing large contracts.

2.5.4 Reasons for Outsourcing

Workload Management

Every state outsourced because they had more work than they could currently do themselves; either they did not have the quantity or the specific type of required personnel. **South Carolina** is one example. Several years ago they began a “27/7” roadway plan to allocate resources to complete 27 years worth of roadway construction and redesign projects in seven years. It would not be possible to triple the number of DOT (civil service positioned) engineers for one such project only to let them go after the seven-year project was completed. They have had to fill this large demand for personnel from the private sector. Though some operations administrators defended their department’s ability to perform all roadway design and construction costs more cheaply than any contractor, they admitted that unless current levels of transportation infrastructure funding were to remain steady for decades, contracting was a more feasible option.

Political Climate

Another reason for the increase in contracting was its current preference in the state’s given political climate. According to several respondents, despite a lower overhead, lack of profit, and the ownership of their own facilities, DOTs have had a difficult time convincing some state governments that they are a cheaper and more efficient option. This belief in the inherent efficiency and cost-effectiveness of private business was mentioned more frequently from southern state DOT personnel. As one manager put it, “The mindset down here is that private companies can do *everything* cheaper.” Two managers expressed resignation that contractors’

lobbyists in their respective state legislatures were responsible. Though all but one of the operations personnel disagreed (four of them very strongly), there remained a popular sentiment in many states that private contractors were always the more cost-effective option. In **Michigan**, this has resulted in a Legislative mandated cap on the percentage of public personnel which may be employed for certain DOT projects.

A critical issue with gauging a DOT's relative cost-effectiveness is the inability of several states to do comparative analysis with private contractors. Those that did have such information were the most confident of the DOT's superiority in this area. Of the three states that were uncertain as to how their costs measured up against private firms, two were willing to consider outsourcing as a possible cost-saving measure. *Every* other state which reported having a reliable system of comparing costs was confident that they were capable of performing more quickly and efficiently than private firms.

State Labor Market Conditions

Finally, because of a lack of available contractors in isolated, usually rural areas, the DOT was obliged to perform a greater percentage and variety of tasks than they do in more populated areas. If a state DOT is unable to locate an acceptable number of contractors in a given area, it is required to carry out more of the work there itself. The unequal distribution of available employees was also a more general problem facing human resources.

2.5.5 Contracting

The Process

The majority of interviewees (11 of 18) stated that problems with contractors were more the exception than the rule. Eight of the 22 DOT operations personnel voiced specific reasons why they saw the contracting process as flawed. They either targeted specific state regulations or were more expansive in their criticism. One northeastern director expressed a fundamental frustration about the way government functions, "On the one hand, people expect government to function more like a business. On the other, they obsess about open competition and fairness." Others were more tolerant of the system's imperfections. "If the job is done, on time and on budget, it's done," one administrative officer remarked.

The Contract

Negotiating the value of the contract was the most frequently mentioned aspect of the contracting arrangement. As mentioned, 70 percent of operations interviewees were openly resistant to the idea that outsourced jobs could be done more cheaply. Determining the amount of money a job was worth was seen as a vital concern. One reason for this was because of some resentment among some DOT personnel that outsourcing was seen as a preferred alternative. Efforts to dispel legislatures and other government officials of this notion were hampered by an inability to perform internal audits. Those few who claimed to have done accurate and detailed audits were the most upset. Others were annoyed that state laws did not enable them to limit contracting costs, such as capping overhead rates. Several others complained that the procedure for gauging the appropriate levels of effort for certain jobs and tasks was too arbitrary, leading to some “iffy” state contracts, according to one auditor. The most enthusiastic support of contract procedure came from **Texas**, which was vocal about its success and preference for utilizing performance-based contracts for its maintenance projects. On the whole, while most DOTs recognized themselves to be a cost-effective organization in the long run, contractors were a more viable option in the short term.

Partnerships

Most respondents were content with the DOT’s relationships with private firms. There was a high degree of confidence in the vendor/contractor screening process and in the ability of individual project managers to successfully negotiate and oversee the contracting process. Three interviewees, however, mentioned difficulties in building and maintaining the relationship between public and private entities. All of these challenges were attributed to divergent management styles and lack of communication between contractor and DOT. Four interviewees were frustrated by their contracting procedure because they were not in immediate control of the work. One manager complained, “I have no control over [contractors’] priorities.” Another remarked “the further removed they are, the harder it is for us to know what they’re up to.”

Another issue was a general mistrust of consultants among DOT management and personnel. Different accounting procedures, oversight expectations, and conflicting chains of

command can occasionally cause friction. “Getting [DOT and contractor personnel] on the same page has been difficult at times,” reported one director. In two separate states, challenges in standardizing design guidelines and management protocols were met by holding inter-management training sessions for DOT and contractor personnel. In the current climate of increased outsourcing arrangements, more DOTs may need to institute such training.

Twelve separate operations interviewees mentioned that the success of their contracting arrangements were largely the result of having established good relations with the local contracting community. Most were familiar with the private firms that operated across the state and private firms with this experience had come to expect and deliver what the DOT wanted, with few resulting problems.

All but four of the operations personnel interviewed foresaw the future of the DOT as a project managing organization overseeing the work of private firms. There were mixed feelings toward this possibility. Four managers spoke of this future for the DOT in negative terms and felt that the department should work harder to retain more core competencies. Most others were more resigned. Perhaps not coincidentally, the two states most content with their contracting arrangements were also the ones most accepting of this emerging role for the DOT.

2.5.6 Human Resources

Introduction

Twenty-seven state DOT human resources directors or assistant directors were interviewed for this section. All but three of them expressed the issues facing their respective DOTs in terms of being asked to do more with less: more responsibilities and projects with fewer staff. Furthermore, since the late 1990s, capital budgets and the number of DOT projects undertaken had increased without a corresponding increase in the number of full time employees (FTEs). Most states interviewed had decreased their staffs significantly, mostly through attrition.

The need to manage more work with less staff has subsequently altered the mission outlook of state DOTs. According to respondents, DOTs were changing from organizations that were previously “doing” organizations to ones that were now much more “managing”

organizations (two DOTs used this exact phrase). The desired DOT skill sets for potential employees, according to interviewees, had shifted from designing, building, and maintaining roadway projects to managing contracted entities that now fulfilled those roles.

Despite a greater degree of reliance on contracted work, *all* interviewees expressed immediate concerns over securing necessary staffing levels in the face of what they viewed as structural disincentives (primarily state-mandated, inflexible hiring and employee management regulations). Though the overwhelming majority (at least 90 percent) voiced some degree of frustration with current hiring, promotion, pay grade, and responsibility assignment procedures, others viewed the existing rules as a necessary check against arbitrary and personal management decision making.

While some states excelled in meeting their recruitment objectives, others struggled to fill vacancies. There was also a lack of uniformity among DOTs with regards to their recruitment, retention, and succession planning strategies. The use of certain types of programs and initiatives intended to set and meet personnel goals varied widely from state to state. On the whole, the success of any given DOT's personnel management varied with that state's labor laws, administrative environments (especially leadership), and labor market. Some states employed effective succession strategies, running leadership academies and long-term mentoring opportunities to ensure the continuation of key responsibilities in the face of an aging workforce. For various reasons, other states had no succession planning whatsoever, and no plans to implement them in the near future. The one attribute all successful personnel management strategies had in common, according to interviewees, *was their being supported by upper management*. This sentiment was independently supported by interviewees who did not consider their state DOT's management strategies to be particularly successful.

Aside from immediate concerns over staffing, several respondents expressed a deeper concern about a general lack of future visioning for the DOT. They felt too many resources were dedicated to responding to trends affecting their department (i.e. outsourcing, simultaneous budget increases and staffing cuts), and not enough to determining what type of organization the DOT would need to become in the future and developing needed skills accordingly. As one HR

director commented, “Skill sets have changed, but they’re still trying to train civil engineers to be project managers.” Another commented, “DOTs should take a serious look at what the future of transportation needs to be. It isn’t just about patching holes in the highway anymore.”

Recruitment and Retention

State Regulations

Another cause for concern was a state’s “cumbersome” (a word used in twelve separate interviews) hiring regulations. There was some variation to the extent of state Union and/or civil service employee regulations each had to abide by, but in all cases HR personnel felt them to be too rigid. They felt these rules put them at a disadvantage with private firms which they felt could “hire on the spot.” By contrast, hiring processes at state DOTs varied between six weeks and six months and often involve more state agencies than the DOT. In **Indiana**, the DOT cannot take previous professional experience into account when hiring new employees for certain graded positions. Everyone applying to certain positions is offered the same salary, despite actual experience and value. In several states, decisions must first be made by local offices in accordance with statewide and vacancy needs; then those decisions are reviewed and “remade” at the state DOT level, and then they are reviewed at a statewide personnel and/or budget office.

Salaries

The most immediate recruitment and retention concern for all HR contacts was pay. One Midwestern state DOT HR assistant director stated, “Salary limitations are very much hindering our ability to compete with the private sector.” There was a perceived inability to provide competitive salaries to lure college graduates (especially engineers) and keep skilled employees away from the private sector. The notion that state salaries “could not compete” with private firms was common. Only three states interviewed felt that their salaries were competitive. One director estimated that, at any given time, they were 10 percent to 15 percent behind market. The most common reasons given for this were state funding constraints (usually set by the Legislative, though occasionally by the executive branch). State governments could not pay as much, and when they did, they were often not permitted to target pay increases for specific

positions. Many reported that civil service and other employee-friendly state laws permitted only sweeping, “across the board” pay raises for all employees; making the proposal of incentivized raises more expensive, more complicated, and hence less likely.

But salary increases could also lead to more troubles. Two HR directors spoke of seeing local (and in some cases, even targeted) pay increases pass through their state governments that only resulted in local private companies increasing *their* pay rates. One director described being reprimanded by her superiors for her peripheral part in advocating a state employee raise that resulted in higher overall local business costs.

Budgetary Inflexibility

Another issue was that the inflexibility of state budgets and procedures restricted DOTs from embracing potential solutions to personnel challenges. In addressing this issue, all interviewees expressed the desire to be permitted more flexibility. Two-thirds of those interviewed mentioned specific regulations and policies which they felt to be burdensome and would like to see repealed. Many DOTs were beholden to the budgetary and staffing decisions of a state administrative or personnel department; adding an extra layer of authorization and slowing the hiring process. Some cited the intransigence of civil service pay grades. With every job’s responsibilities listed and assigned to a graded pay scale, employees who wish to transfer from one job to another cannot simultaneously straddle responsibilities while training. Unless there exists any overlap in position skills, they have to cease all former responsibilities before they can begin to report any work under the new position. Several directors wished to see some form of “Duel Incumbency” instituted to assist with succession, but knew that under their current budget and management procedures it would not be possible. The issue of budget inflexibility further hampered HR abilities to provide staff training and in a larger, DOT-wide context, redirect funds to areas of need.

Recruitment Strategies

Approximately 70 percent of HR directors and assistant directors described recruitment of engineers as their most pressing concern. Obtaining engineers was particularly difficult for two stated reasons: the lack of salary competitiveness and the overall decrease in the number of

engineering degrees. With the shortage of qualified engineers, at least one director lamented not being able to sponsor foreign-born engineering candidates, including those who had obtained their degrees in the U.S.

Challenges to recruiting non-engineers varied from state to state, often differing by local labor market conditions. Several states had some difficulty finding upper level accountants. Others struggled to find auditors. One had “market-driven” issues hiring IT employees until the internet bubble burst in 2001. Since then, it has not been a problem. Several expressed difficulty in recruiting sufficient numbers of qualified minority candidates, despite traditional outreach efforts (e.g., job fairs, campus recruitment, mentoring, internships, scholarships, etc.).

As stated above, limitations in what the state could pay in relation to what a soon-to-be-graduated engineer could earn working for a private firm were seen as the primary reason for their recruitment difficulties. One significant problem was an inability of HR to guarantee positions for new hires, even for critically needed personnel. One director noted a feeling of awkwardness at job fairs where all she was able to offer candidates was a place on a list and a promise to call should anything open up.

Only five states, due to a number of strategies and local conditions, did not report any significant challenges with recruitment of engineers. **New Jersey** employed recent and soon-to-be graduated interns, guaranteeing them hire as engineers if they completed a set amount of internship time during their degree. **North Carolina** placed recent graduates in a “continuing training” program, starting them off as entry-level engineers in a particular field after 18 months of on-the-job training. After a recent state hiring freeze, **Delaware** acquired a dedicated recruiter, with positive results. **Georgia** and **Pennsylvania** recently expanded their recruitment outreach to cope with the need for potential engineers. Both programs were too new to have any reported effects. **California** eased and sped up its hiring procedures significantly by permitting entry level, state employment exams to be taken online.

A few states found ways to make the hiring process somewhat more flexible and responsive. **Nevada** was given permission to make certain priority hiring decisions in-house

rather than through its normal state personnel office channels. **Texas** had a similar “rapid hire” program for more difficult to fill positions as well as two-year on the job training for disadvantaged employees. **Louisiana** instituted a “specialty entrance rate” for entry-level engineers as an incentive and **Maryland** recently started a hiring bonus program.

Accelerated Promotions

Some states, such as **Georgia**, **Arkansas**, and **Louisiana**, instituted some type of accelerated or automatic promotion incentive for newer and lower level technical employees. These were free from outside competition and designed to keep newer employees invested in the DOT. Most states interviewed had salaries and positions tied to a single scale. Most also had a “glass ceiling” with respect to technical positions. At a certain point, experienced technicians (i.e. engineers) could not continue doing anything related to their same job with higher pay without switching to management. Some interviewees viewed this as something they wished to see addressed and/or changed. Others did not think it was problematic.

Performance-Based Pay

Aside from targeted pay raises, most HR management also wished to see some type of performance-based pay instituted in their respective states. The few states which did have appropriately funded performance bonus plans, such as **Virginia** and **Texas**, were generally pleased with them as recruitment and retention tools. **North Carolina** is currently experimenting with a similar program. According to interviewees, the most optimal system would permit *individuals* to receive these bonuses, as opposed to whole departments. It would also have to be adequately funded and supported by upper management. They felt that instituting such an incentive program would give them more flexibility to negotiate with and attract potential employees. One interviewee had mixed feelings about the idea because she feared it would cause a backlash from long-time employees who had gone without such incentives.

Benefits

In all but one case, interviewees were very vocal about the superiority of their benefits packages compared with those generally offered by private companies. The job stability, as well

as the health, dental, flextime, and other benefits were seen as the DOTs' greatest and most marketable advantages. Only where HR directors felt that their state's benefits package had been reduced in recent years (attributed universally to rising health care costs) was there a sense of some parity existing between the public and private sectors. Another reported that declining relative benefits was a repeatedly confirmed reason for employees leaving the DOT, according to job exit polls.

Relocation assistance was another benefit that was seen as productive but insufficiently utilized by DOTs. Given nationwide fluctuations in housing costs and growing DOT reliance on out-of-state recruitment, it is a significant problem. One interviewee stated that it is not uncommon for out-of-state, entry-level employees to initially accept, and then rescind a state DOT employment offer once they came to realize how much less a state salary will get them in their new and more expensive housing market. As a result, **Missouri** and **Nevada**, for example, offered a reimbursement to cover the cost of moving expenses. Another state HR director discussed the possibility of implementing a housing allowance to lure potential employees from other states. One considered the possibility of offering a housing cost relocation benefit to be based on covering the difference between a potential employee's current, out-of-state accommodation and a comparable one in the DOT's home state.

As generous as these benefits tended to be, many directors expressed an interest in expanding them and utilizing them more innovatively. Several interviewed mentioned telecommuting as a viable new benefit they would like to see considered. One commented, "We're the DOT. We should be one of the champions of telecommuting!" Other requests were to expand the sorts of benefits that need not necessarily be extremely expensive, but that employees take very seriously. These included, but were not limited to: full "cafeteria" plan, expanded child/elderly care, allowing excess sick leave (and accrual of sick and leave time), and expanded transit use incentives.

Despite the overall relative advantage of these benefits, states reported them as having little effect on a recruit's decision to work for the DOT. Interviewees attributed this to younger employees' preference for the short-term benefits of a larger salary over the long-term

advantages offered by a solid benefits package. HR directors felt that more work needed to be done to relate the significance of these benefits to younger employees. One western HR director suggested spending more energy to illustrate the tangible long-term advantages of state DOT benefits packages and even vesting trainees into the retirement system early in order to build loyalty.

Local Labor Markets and the DOT

Recruitment was made more difficult in geographically and economically diverse states. Not only did DOTs have to compete at a disadvantage with private contractors and engineering firms in metropolitan-area job markets, but luring younger employees to offices in isolated rural areas was also seen as problematic. Opportunities and salaries were often greater in areas of states with concentrated metropolitan areas. One director noted, “In some parts, we’re the only employer, in others, we’re a last resort.” This was not seen as entirely negative. According to several interviewees, once employees were convinced to settle in isolated areas where other employment prospects were fewer, they were more likely to remain.

This challenge to acquire and keep qualified technical employees was compounded by a lack of accurate geographic pay scales in most states. Many DOTs’ uniform pay scales (per position and grade) did not sufficiently take local variations in cost of living into account. According to interviewees, the few states that did have such systems needed to expand them to an extent that they more closely reflected actual statewide variations in living costs.

Retention and Private Sector Flight—“We train them, and they leave.”

Interviewees repeatedly voiced frustration at the drain of qualified employees to the private sector. Lured by higher salaries (especially at the promoted pay grades they’ve achieved while at the DOT), many mid-level qualified professionals switch to employment with private firms. This was irksome to several directors interviewed, who felt that the DOT spent too many resources training its own competition. One director admitted, “to some degree, we’re going to be a training ground for private business,” but noted after that many of those same employees did return to state work after four or five years. A major difference in approaching the challenge of retention was offered by **New Jersey** and **Florida**. Instead of worrying about the drain of talent

from the state, they demonstrated a positive attitude towards employees switching to private work. As they now chose to see it, it meant that there were more individuals and companies who knew the DOT and were familiar with how it operated and expected to do business. This decreased the potential for miscommunication and conflict in approaching contractual relationships.

2.5.7 Succession

Succession Planning

Succession planning was deemed an absolute priority for workforce management among a third of interviewees. Older, more skilled and experienced workers (again, especially engineers) were reaching retirement age, and like any employer, various DOTs were addressing the need to replace them in different ways. One director worried that “a third of [her] bridge engineers could retire tomorrow.” Another director, however, was skeptical of the likelihood of such mass retirements and in fact joked about the “doomsday” tone of these assertions.

Depending on the state governance, the political environment, and local labor market conditions, states varied with respect to the types and amounts of consideration they gave to planning for worker retirement and subsequent skill gaps. **Florida, Maryland, and Colorado** have successful succession plans and mid-level training academies and/or programs. **California** has an extensive succession plan for executive development as well as Leadership Training for all managers. In addition, **Florida** has run a Deferred Retirement Option Program (D.R.O.P.S.) for several years, partially to address the retention of key skills. Retirement-age workers agree to continue working for five extra years *under the stipulation that they did in fact retire after that time*. The benefits they would be receiving during that time were placed in an invested trust fund available to them after the five years. These experienced and highly skilled employees remain at the DOT for an extra five years to mentor their replacements. Several other directors, without mentioning this program or state by name, expressed a desire to bring such a program to their state.

Other states had little or no succession plans whatsoever. Some DOTs, such as **Missouri** and **Pennsylvania**, were not currently concentrating on succession because they had recently

transitioned a large number of employees into retirement and did not anticipate another large-scale loss of employees in the near future. In **North Carolina**, a 1988 merit-based hiring law forbade the selection of individuals in an arbitrary fashion for succession training. Most other interviewees admitted that succession planning was not seen as an immediate priority by upper levels of management. Some states, while admitting the need for such programs, did not have plans to implement them. One director lamented that her DOT had, until recently, a sound succession plan in place until management shifted priorities elsewhere. As with other aspects of personnel management, directors attributed the success or failure of their succession programs to the strength of its support from upper management.

2.5.8 Summary

A total of 45 DOT human resources and operations personnel were interviewed for this project task. Though only a minority of respondents were operations personnel, they represented a wider variety of skills, expertise, and professional perspective. Of the 18 operations personnel interviewed regarding their DOT's outsourcing arrangements, all of them noted that their DOTs contracted extensively. Several voiced opinions about the disadvantage of the state's intransigent purchasing and negotiating guidelines, while others noted that bolstering communication with contractors was the key to successful partnerships. Most noted that while their contracting arrangements were not perfect, things functioned reasonably well.

The majority of respondents for this task were human resources personnel. On the whole, their most pressing concern was offering entry-level engineers enough salary to make them a viably competitive employer. Most felt they could not. Another issue was dealing with the host of state-mandated rules and procedures governing employee administration that interviewees often found inflexible and cumbersome. Many of the programs and initiatives mentioned in this summary report were attempts to deal with needs in light of some of these regulations.

2.6 CONCLUSION

This task uncovered a wide-ranging perspective on the contracting and human resources practices of DOTs across the country. Every state has to manage with its own set of economic, geographic, and political circumstances that affect the range of options open to DOTs when

assigning responsibility for its various functions. They have different resources, skill sets among employees, management priorities, and budgetary and hiring constraints. Some have a wealth of skilled, reliable contractors from which to choose. Others are not so fortunate and are forced to pay for contractors they are unhappy with because of a lack of local competition. The type of contract each prefers to deal with also differ. Some are wary of maintaining thousands of small project contracts and wish to be able to consolidate responsibilities to several large firms. Some DOT personnel are content with their outsourcing arrangements, and pride themselves on forcing quality work out of their contractors through diligent oversight and incentive management. Lastly, opinions are mixed with regards to whether outsourcing ought to be considered a preferable option. Many acknowledge that government cutbacks and increased workloads rightfully warrant increased reliance on private firms. Many others, however, consider the public sector as producing a superior product and resent dealing so extensively with private companies, whom they view as underskilled and overpaid.

Outsourcing is also treated differently across state DOTs. Each sets its own priorities and wishes to complement its own identified skills with private sector contracts. Though most utilize some type of RFP procedure and screen for acceptable applicants, they expressed different attitudes and experiences about their relationship with contractors. Some preferred to have the contractor either work close or directly with DOT staff in order to ensure the delivery of an acceptable product, while other DOTs were confident of their ability to manage their contractors despite maintaining looser contact with them.

Despite these and other differences outlined above, there are many similarities among DOTs, and opportunities to begin addressing best practice procedures. Both the literature and interviewees agree that the need for outsourcing will continue. Public sector hiring and human resources practices make acquiring (and dismissing) private personnel much easier than unionized state employees. With the amount of work dependent on politically susceptible public budgets, DOTs are at an advantage if employees can more readily be added and replaced as funding is available. Despite disagreements about whether it should be happening, most interviewees agreed that DOTs were fast becoming agencies whose primary function was to oversee the work of private contractors. Some were resigned to this fact while others resisted it.

This question was emblematic of some voiced concerns over the future of the DOT. Most interviewees were convinced that despite what happened, some discussion on what the future needs of the department, and transportation in general would be, was a necessary start.

CHAPTER 3: Project Delivery Workforce Management Workshop

The culmination of this project was a one-and-a-half day workshop for state DOT human resources professionals held December 7-8, 2007 and hosted by CTS on the campus of the University of Minnesota. The workshop included participants from ten state DOTs and FHWA. Prior to the workshop, the project team developed an agenda that emphasized the sharing of challenges and best practices in the areas of outsourcing and workforce management. The project team also included ample time in the agenda for informal networking between participants since this was viewed as a substantial benefit of attending this type of workshop.

3.1 ANNOTATED AGENDA FOR WORKSHOP

UNIVERSITY OF MINNESOTA

CENTER FOR TRANSPORTATION STUDIES

NATIONAL COOPERATIVE HIGHWAY RESEARCH PROGRAM
PROJECT 20-7 TASK 205

December 7 and 8, 2006
McNamara Alumni Center
University of Minnesota
Minneapolis, MN

ANNOTATED AGENDA

Project Delivery Workforce Management Workshop

Thursday, December 7

- 8:00 a.m.** **Registration**
Continental Breakfast
- 9:00** **Welcome**
Robert Johns, Director, Center for Transportation Studies, University of
Minnesota
- NCHRP Project 20-7, Task 205 Panel Representative

Introductions

- **Name**
- **Position**
- **Is your major concern outsourcing, workforce management, or both?**
- **What do you expect to take away from workshop?**

9:20

Presentations and Discussions

Moderator: Robert Johns

Results of Interviews with State DOT Human Resources and Operations Staff

Arnold Bloch, Ph.D., Principal, Howard/Stein-Hudson Associates, Inc.

State DOT Workforce Management and Outsourcing: A Vision for the Future

Discussion Leaders: Kirk G. McClelland (MD), Rory L. Rhinesmith (WI)

Discussion leaders are asked to respond and react to the information in the PowerPoint presentation and to trigger a discussion about a desired vision for the future.

Discussion

10:30

Break

10:45

Breakout Sessions—Challenges

Facilitators: Arnold Bloch and Robert Johns

- **Outsourcing:**
 - ***Contracting procedures:*** How can contracting be fast-tracked without compromising quality of vendors or credibility of the process? Where are the process bottlenecks?
 - ***Value comparison:*** Have DOTs tried to prove cost-effectiveness of state employees vs. vendors?
 - ***Communication:*** Where are lines of communication breaking down? Where are the gaps?
 - ***Increasing trend:*** How can this trend be embraced or reversed?
- **Workforce Management**
 - ***Doing vs. Managing:*** How does it affect staffing needs?
 - ***Recruitment & Retention:*** Can DOTs be a training ground for technicians with longer-term employment strategies for PM/administrative positions? Are there any other major recruitment problems not mentioned in the presentation?

- **Structural Disincentives:** Are there any other structural disincentives not mentioned in the presentation? What are major budget constraints? How much of an issue is budget flexibility?
- **Strategizing:** Do HR personnel concentrate on an organizational wide strategy? OR do they have level-specific/ position-specific (admin, technical, etc.) strategies? Is one approach better than the other?

12:15 **Representatives of each group input information into PowerPoint templates**

12:30 **Lunch**

1:30 **Group Reports and Discussion:** Two members of each group will come up to explain what was achieved in their respective breakout sessions. They will use the template they filled out to help them organize their thoughts and enable all participants to see the results on the projector.

2:00 **Breakout Sessions—Best Practices**
Facilitators: Arnold Bloch and Robert Johns

- **Outsourcing:**
 - **Strategic Positioning:** How can DOTs leverage their position as major providers vs. needy partners?
 - **Performance-Based Contracts:** Is this a viable option? What are the constraints to move toward this kind of model?
 - **Contractor Quals:** Do you find qual's to be more promotional than technical? What are ways to ensure you are getting the information you need in proposals?
 - **Local Roots:** How can the State form relationships at the local level? What are ways to foster relationships with the local private AND public sectors?
- **Workforce Management:**
 - **Deferred Retirement Programs:** Pros/cons of implementation
 - **Accelerated training/leadership programs**
 - **Pre-Graduation programs**
 - **Other programs/initiatives**
 - **Budget Flexibility:** How can budgets be made more flexible?

3:30 **Representatives of each group input information into PowerPoint templates**

4:00 **Group Reports and Discussion**

5:00 **Adjourn**

Friday, December 8

8:00 a.m. Continental Breakfast

8:30 Group Discussion—Advancing the State of Practice
Facilitators: Arnold Bloch and Robert Johns

- **CEO Workshop Development**
 - ***Awareness:*** Are workforce management issues on the radar of high-level management?
 - ***Approachability:*** Is there a forum where middle & lower management can access high-level decision makers? If not, what needs to be changed? How important has leadership been to respective experiences?
 - ***How*** do initiatives get started within DOTs? ***Who*** needs to be at the table?
 - Participants will brainstorm issues to be discussed in a CEO Workshop to ***create an agenda*** for such an event
- **Transferring Best Practices**
 - ***Technology:*** How comfortable are DOT workforces with technology? (Downloading/checking Web sites, discussion forums, interactive classes, etc.)
 - ***Paper:*** Newsletters, Pamphlets, Reports
 - ***Training:*** For Whom? Is it easier for DOTs to host these kinds of events or to travel to a conference/workshop? What kind of format (workshop, class) is most productive for them?

9:30 Break

9:45 Group Discussion—Advancing the State of Practice

- **Research Needs**
 - What areas should be further researched ***in and out of the transportation sector?***
 - Participants will be asked to write down ***three research priorities*** that will help them develop and advance practices in workforce management
 - ***Similar priorities will be clustered*** and clusters will be given overarching themes

11:00 Concluding Remarks from the Federal & State Perspectives
Todd Lamphere (Tentative), Human Resources Manager, Washington State DOT
King W. Gee (Tentative), Associate Administrator for Infrastructure, Federal Highway Administration

12:00 p.m. Lunch

1:00 Adjourn

CHAPTER 4: Proceedings of Workforce Management Workshop

This chapter offers a summation of the main points from the workshop and lists the research and funding opportunities the participants felt are necessary to effectively tackle workforce management issues at DOTs now and in the future.

4.1 WORKSHOP INTRODUCTIONS

CTS director Robert Johns, along with the FHWA Associate Administrator for Infrastructure, King Gee welcomed participants to the workshop and explained to the group that everyone in attendance had the exciting and yet daunting task of addressing workforce management and outsourcing in one and a half days. Johns reviewed the agenda for the workshop and explained to the group the importance of addressing the goals set forth by the NCHRP task panel. Gee, a member of the panel, elucidated further the desired result from the panel's perspective. Gee emphasized that the panel, while understanding the nuances faced by each state, wanted the group to come up with a core set of issues that they all face, strongly emphasizing the need for action. He noted that several studies have been conducted, but what is being done? Gee's charge to action to workshop participants comes from an anxiety that state DOTs will be facing a crisis in the next 5 to 10 years and a concern that even action now may be too late. He expressed the desire to help move the agenda forward so that workforce management stays in the minds of decision makers.

Johns asked the participants to introduce themselves, and beyond just their names, the participants were asked what they hoped to retain from the workshop. Numerous participants expressed similar concerns, including:

- Effective strategies/programs to recruit and retain employees
- Managing the outsourcing process to get quality results
- Developing a role for the federal government in addressing state DOT issues
- Creating a DOT that is flexible, competitive, and professional

4.2 PRESENTATION

Arnold Bloch, principal of HSH presented the findings of the 51 interviews described earlier to the workshop participants. These are summarized below.

4.2.1 Outsourcing

As previous literature and other NCHRP studies have suggested, managers from both human resources (HR) and operations acknowledged a noticeable increase in the amount of work they were outsourcing. However, with the increase in outsourcing, HR managers felt ill-equipped in their ability to adapt to this changing organizational structure. Many identified rigid hiring and civil service procedures as barriers hindering the ability of DOTs to recruit and retain a workforce that can transition from an agency that *does* to an agency that *manages*. Many of the interviewees, in the face of increased outsourcing, felt they lacked negotiation skills to broker a good deal for both the agency and contractors; this lack of strategic positioning led many operations managers to believe they were the needy partner in the outsourcing relationship, resulting in poor contracts or problems with the efficient and effective delivery of contracts. While HR managers tended to be less involved in the outsourcing process, they nevertheless were able to recognize how outsourcing affects the DOT staff. Issues of mistrust between agency and consultant staff, and the loss of employees to the private sector were issues faced by HR managers. Furthermore, as more work is outsourced in the future, interviewees stated that many aspects of effective outsourcing were still lacking. Some of the needs include: standardized procedures for large-scale contracts, streamlined processes for smaller contracts, effective ladders of communication, and grievance procedures (for both the agency and its consultants).

4.2.2 Workforce Management

Decreased staff and budget cuts across states have made it more difficult for DOTs to be competitive employers. Despite being mission-driven agencies, interviewees felt that their agencies tended to conduct visioning with a top-down approach, resulting in a reactive instead of proactive organization. Being a competitive employer doesn't just mean the salary; it also includes benefits and a whole employment package, which is an area many interviewees felt that DOTs were not in an advantageous position. Rigid hiring practices also resulted in time lags that some interviewees felt were responsible for losing potential employees to the private sector.

Furthermore, some interviewees felt that when DOTs increased their pay, the private sector would do likewise, maintaining the gap between private and public salary scales. These were all issues mentioned by HR staff that contribute to the decision—by numerous upper-level managers at DOTs—to increase outsourcing. The inability for DOTs to effectively cost their labor is also problematic to the development of an effective strategic plan for DOTs looking toward the future. Many interviewees did not feel that outsourcing was the “be-all-end-all” solution to DOT workforce management problems. In fact, many felt that something could and should be done in order to better manage the outsourcing process in order to retain a highly qualified, professional DOT staff. While acknowledging that workforce management is a critical issue facing middle and upper-level managers at DOTs, not all of the interviews were focused on workforce problems. Many states are trying innovative solutions, and succeeding, at targeting and retaining the type of professionals needed to be successful DOTs now and in the future.

4.2.3 Inspiration and Innovation

Despite the common challenges DOTs face in the field of workforce management and outsourcing, certain states are taking proactive measures to strategically achieve their personnel and work needs while fulfilling their mission as government agencies.

The recruitment strategies of New Jersey, North Carolina, Delaware, Georgia, Pennsylvania, and California have contributed to their successes in recruiting. New Jersey employed recent and prospective graduates, guaranteeing them jobs as engineers if they completed a set amount of internship time during their degree. North Carolina placed recent graduates in a “continuing training” program, starting them off as entry-level engineers in a particular field after 18 months of on-the-job training. After a recent state hiring freeze, Delaware acquired a dedicated recruiter, with positive results. Georgia and Pennsylvania recently expanded their recruitment outreach to cope with the need for potential engineers. Both programs were too new to have any reported effects. California eased and sped up its hiring procedures significantly by permitting entry-level, state employment exams to be taken online.

There have also been successes in terms of retention strategies among states. Georgia, Arkansas and Louisiana have developed accelerated promotion programs to create incentives for

new or lower-level technical employees. Virginia and Texas have received pleasing results from the performance based bonus/incentive programs they have developed. Furthermore, in order to address the fear of many HR managers that they will be losing their most experienced professionals in the coming decade, succession planning has become a hot topic in state DOTs. Florida, Maryland, and Colorado have successful succession plans and mid-level training academies and/or programs. California has an extensive succession plan for executive development as well as leadership training for all managers. In addition, Florida has run a Deferred Retirement Option Program (D.R.O.P) for several years, partially to address the retention of key skills. Retirement-age workers agree to continue working for five extra years *under the stipulation that they would in fact retire after that time*. The benefits they would be receiving during that time are placed in an invested trust fund available to them after the five years. These are just a few of the strategies DOTs have implemented to tackle the issues of an aging workforce, constrained budgets and rigid bureaucracies. In presenting the analysis of the survey, the workshop participants were eager to being discussion on sharing ideas/strategies as well as moving toward action.

4.3 DISCUSSIONS

Most of Thursday and all of Friday morning focused on giving workshop participants the opportunity to provide feedback on the survey presentation, and to share with one another their own experiences, practices, and concerns. *Being a somewhat condensed event, the quality and quantity of information that was shared far surpassed the expectations of most of the participants*. The following is a summary of the major points discussed under the topics Challenges, Best Practices and Advancing the State of Practice.

4.3.1 Challenges

The major challenges to emerge from the discussion on outsourcing focus on six major issues: 1) evaluation methodology, 2) effective partnering, 3) dealing with consultants, 4) internal employee morale, 5) procedural issues and 6) understanding the public interest. The issue of methodology is primarily concerned with evaluating outsourced work not just in terms of final dollar amounts but including the valuing of state employees so that there may be cost-effective alternatives to outsourcing. At the same time, understanding the role outsourcing has and will continue to play in the delivery of state contracts, participants found it necessary to treat

the partnership with consultants well and foster a good relationship with the private sector. This includes clearly defining the roles of each team member, having effective lines of communication, accurately assessing the qualifications and skills of each proposed consultant team, and making sure evaluation is a two-way street. Not only were good communication skills necessary (and often missing) between the agency and its consultants, but effective communication was also seen as lacking among agency staff themselves. Many participants felt that if not addressed on a regular basis, employee morale working alongside the private sector tended to drop. Many times experienced workers found the transition toward outsourcing very difficult, resulting in tension with the consultant team hired. Managing relationships was a big challenge for many HR and operations managers. Lastly, workshop participants expressed a strong tie to the mission of their respective agencies. They reminded each other that first and foremost their agency serves the public; yet, their charge as public servants is more and more difficult to manage, as the idea of public interest becomes less instead of more clear. Long-term vs. short-term solutions and recognizing changes in the public interest were found to be difficult issues by many workshop participants.

Concerning workforce management, four major themes emerged during the discussion: 1) approach/visioning, 2) performance and employee management, 3) recruitment, and 4) skills development/maintenance. Access to upper-management decision makers was a huge hindrance to effective and strategic visioning. The other major component is not knowing how or what to bring to an agency's CEOs. Furthermore, different management styles and personalities make it difficult to develop a general approach to strategic visioning. This was a major concern of workshop participants. A lack of organizational and structural flexibility was reported as a principal problem in making DOTs competitive employers. Despite the optimism shown by those attending the workshop, there was a palpable sense of urgency in voicing the immediate need for strategic planning. (This was later confirmed by Friday's exercise in developing a research action plan to continue work in this field.)

In addition to hindering the visioning process, the rigid, bureaucratic structure of DOTs was linked to the inability to effectively manage the workforce. In terms of targeting and maintaining a professional team, time lags and long hiring processes make it difficult for HR

managers to hire recent graduates as quickly as the private sector. This problem is compounded by the fact that DOTs can't offer the same level of pay as the private sector; to work for the government, not only must you be willing to be paid less, you also have to wait longer to start. Many HR managers reported that by the time they were ready to make an offer to a candidate, they had long accepted a position with someone else. The "red tape" also makes it hard for HR managers to keep well-performing candidates. Processes that are very difficult to do and threaten the retention of qualified employees are: effectively removing poor performers, negotiating contracts with professional unions, finding avenues for employee mobility, and developing and expanding the disciplines recruited at DOTs.

Lastly, as technology knows no limit, the skill sets required of DOT workers must likewise adapt, sharpen, and change with the times. Many participants felt they were working with incomprehensive training programs with no strategy to make sure that up-to-date training is achieved. This was true not only for agency employees but for those outside consultants contracted to do work. Not only were technical skills noted as being necessary but professional skills as well. In fact, helping newer employees gain the necessary skills—for example in project management—was one place many participants felt they were behind the curve; this lack of training leaves many operations managers frustrated because newer employees who benefit from accelerated promotion programs are out in the field with more responsibility but not adequate training.

4.3.2 Best Practices

After a lengthy discussion on challenges, the presence of representatives from proactive DOTs helped shape and transition the discussion to what can be done and who has succeeded in implementing effective workforce management and development strategies. In terms of best practices, a number of successful strategies and programs were shared among the whole group. Here, themes and strategies are depicted in the following table:

Best Practices: Outsourcing

Challenge	Strategy / Best Practice
Getting Quality Proposals	<ul style="list-style-type: none"> ▪ Develop effective overhead calculators ▪ Conduct engineering cost studies on a project and annual basis ▪ Have less prescriptive performance specs ▪ Make sure negotiation process is two-way and open
Streamlining the Process	<ul style="list-style-type: none"> ▪ Utilize master contracts and on-call lists ▪ Construction fair of upcoming projects ▪ Annual contract meeting
Generating Legislative Awareness	<ul style="list-style-type: none"> ▪ Write issue papers ▪ Make formal, professional presentations ▪ Be transparent with your initiatives
Effective Partnering	<ul style="list-style-type: none"> ▪ Use “master consultants” for oversight ▪ Have an oversight manager for outsourced work ▪ Participate in ACEC meetings regularly ▪ Pre-project partnering sessions ▪ Partner with other levels of government to get work accomplished
Quality Assurance/Quality Control	<ul style="list-style-type: none"> ▪ Use DOT staff as resident engineer ▪ Use performance/incentive-based contracts ▪ Rate consultants ▪ Develop standardized reporting procedures ▪ Have a formal conflict resolution process ▪ Use competitive, sealed proposals
Additional Best Practices	<ul style="list-style-type: none"> ▪ Monitor the percent of total work that is outsourced ▪ Assess need to outsource on specialty work ▪ Leverage knowledge-transfer opportunities ▪ Use ACEC as a partner in training, feedback, etc.

Best Practices: Workforce Management

Challenge	Strategy / Best Practice
Recruiting New Professionals	<ul style="list-style-type: none"> ▪ Start May recruiting efforts during the previous autumn ▪ Encourage agency to allow on-the-spot hiring ▪ Offer flexible internships
Recruiting Experienced Professionals	<ul style="list-style-type: none"> ▪ Use Web site testimonials from current DOT employees who previously worked at private firms ▪ Use post-consultant workers as recruiters ▪ Promote public service work as a lifestyle job ▪ Hire at upper pay levels
Retaining the Workforce Needed	<ul style="list-style-type: none"> ▪ Offer educational incentives to employees ▪ Help employees stay trained by encouraging education goals, reimbursement of technical training and apprenticeship programs ▪ Recognize top performing employees ▪ Implement formal mentoring programs ▪ Support progressive programs that allow step-by-step promotions ▪ Encourage certification programs ▪ Get incentives implemented to recognize good performance
Creating a Competitive Compensation Package	<ul style="list-style-type: none"> ▪ Use signing bonuses spread over time ▪ Accelerate promotion programs ▪ Accelerate time-off scale for managerial level hires ▪ Implement referral bonuses ▪ Allow for overtime pay
Managing Employee Performance	<ul style="list-style-type: none"> ▪ Set and define performance measures for managers ▪ Set group performance measures ▪ Have short and final improvement plans in place ▪ Make sure managers have good relationships with HR ▪ 360° evaluations

<p>Implement Succession Planning</p>	<ul style="list-style-type: none"> ▪ Rotate positions to address strengths and weaknesses ▪ Have two-tiered programs to allow different levels of employees to participate ▪ Need a robust selection process ▪ Make programs voluntary ▪ Use two-way mechanisms like executive partnering and reverse mentoring
<p>Measuring Success</p>	<ul style="list-style-type: none"> ▪ Analyze hiring rate ▪ Look at size of programs and initiatives ▪ Rate performance during and after internships/probation periods
<p>Additional Best Practices</p>	<ul style="list-style-type: none"> ▪ Conduct market surveys ▪ Evaluate equity among agency employees ▪ Implement knowledge management programs

4.4 ADVANCING THE STATE OF PRACTICE

The discussions on Challenges and Best Practices allowed for knowledge sharing through personal experience and industry analysis. Friday's discussion focused on transforming this information sharing to action. The discussion areas included: Developing a CEO Workshop, Transferring Best Practices, and Further Research and Funding Opportunities. It was in these areas that the workshop intended to answer King Gee and the NCHRP panel's charge to help move the issue of workforce management from analysis to action.

4.4.1 Developing a CEO Workshop

In deciding on how a CEO Workshop should take place in the future to build upon this workshop, agenda items were not the primary focus of the discussion. Rather, understanding the best way to hold a CEO Workshop and evaluating how information should be presented to upper-level DOT management was at the forefront of the discussion. For instance, it was suggested that given the busy schedules of DOT CEOs, it may be better to have the workshop via the web instead of making them all travel to a particular place. Another suggestion was that instead of having a CEO workshop separately, one could be executed during the regional and national AASHTO meetings, specifically naming workforce management as an issue for discussion.

The issue of presenting this workshop and other necessary information to CEOs involves two major points: 1) Information that HR and operations managers need from CEOs and upper management, and 2) Knowledge of the kinds of information that should be brought to CEOs.

To the former point, communication lines between managers and CEOs with specific reference to participation and work with NCHRP and AASHTO is imperative. Most of the workshop participants revealed they were not aware of HR research projects their CEOs have asked NCHRP to conduct. The other major gap in information between workshop participants and CEOs was knowledge of a business plan. This was solidified in the previous discussion on the challenge of visioning within DOTs. Do the CEOs have a business plan of which HR is unaware? Does the business plan strategically look at workforce management issues? These are

questions participants felt go unanswered and hinder the ability of the agency to fulfill its mission effectively and efficiently.

In terms of information participants should take to CEOs, cost comparisons and evaluations were deemed necessary. More specifically, cost comparisons to show the true cost of doing work in-house versus outsourcing are imperative. Data analysis on attrition and upcoming retirements was mentioned, giving this issue the sense of urgency it has not had previously at the CEO level. The challenges and best practices discussed by the group were thought to be a valuable topic to present to CEOs in order to generate buy-in so that workforce management gets the attention and funding it needs by the agency.

Once these issues were discussed, the group was then able to talk about issues they felt CEOs needed to discuss among each other. The topics workshop participants came up with were:

- **Creating a Strategic Package:** Providing a toolbox to move forward
- **Assessing the Political Climate:** What aspects of the political arena are affecting the ability to implement HR initiatives
- **Risk Mitigation:** Looking at what the trends are telling us
- **Standardizing Performance Measures:** Who has them, how to get and implement them
- **Educational Issues:** What to do about the dwindling pipeline of engineers in the U.S.
- **Communication Gaps:** How to be informed by your staff and how you can inform them

The discussion about a CEO workshop helped the group understand that while CEOs discussing issues with one another is necessary and important, it is just as important for them to stay active and develop a strategic relationship with their respective CEOs and upper level management.

4.4.2 Transferring Best Practices

The workshop participants were eager to discuss ways to share their experiences in a more formal and productive way. All the participants wanted more details and implementation assistance to develop successful workforce management programs after the workshop was over. How could this be done? The participants came up with a number of ways to ensure knowledge sharing could continue.

Techniques: Ways to share information

- More workshops that provide further details into specific programs like succession planning
- Webcasts
- Case studies outlining the good and the bad in terms of workforce management initiatives
- Video clips that are short but to the point for people to access any time

Organizations: Incorporating external help to achieve internal goals

- SHRM—Society for Human Resource Management webcasts/workshops (www.shrm.org)
- HR Planning Society (especially in terms of succession planning, www.hrps.org)
- IPMA—International Public Management Association (www.ipma-hr.org)
- Federal Highway Administration with NHI
- Transportation Research Board’s Management and Productivity Committee (www.trb.org)
- AASHTO committees and their “Best Practices” Web site

Other issues in addressing knowledge sharing

- Some transportation Web sites are difficult to navigate (i.e. FHWA) and need to be simplified and made more user friendly
- Communities of Practice: How can DOTs use innovations in knowledge management to their benefit? Is an AASHTO committee or subcommittee a way to start this kind of initiative?
- Leveraging education resources: Links with local libraries and universities are vital to creating positive exposure for DOTs as a competitive employer *and* as an organization of

public servants. Ways to forge these relationships are: help with curriculum committees, sponsor interns and designate someone at DOT as the university and library contact.

- Action: Participants wanted a list of state workforce management initiatives categorized by topic and they wanted HR and operations managers to have direct contact with CEO-level staff in order to be able to move ideas into action.

4.4.3 Research Action Plan

In addition to discussing how information can continue to be shared, participants were asked to list areas they would like more information to be researched (as possible NCHRP projects) or include other places they would like to see funding going to in order to help them overcome the obstacles they face in both workforce management and outsourcing. The following elucidates the research action plan set forth by the group:

Outsourcing

1. Cost/Benefit Analysis for Outsourcing vs. In-House (**Analyzing the True Value of Outsourcing**)

a. Evaluating Efficiencies (**How Efficient is Outsourcing?**)

- Cost comparison methodologies for in-house vs. outsourcing
- National/Regional data of costs vs. realized savings (including startup, transition, maintenance, staff redirection costs)
- Cost/Benefit analysis of outsourcing experience in other states
- Developing a standard methodology for comparing public and private delivery costs
- Regional data on outsourcing vs. in-house, including results and procedures

b. Evaluating Effectiveness (**How Effective is Outsourcing?**)

- QA Procedures and Standards
- Develop performance standards for outsourcing work products (i.e., measuring results such as quality of work performed, etc.)

Strategic Business Planning

1. Overarching theme (**Toward a Strategic Plan**)

- Define the links between DOT missions and work force issues

- Use state DOT baseline in workforce management/development in a “comparative way” as opposed to trends across all DOTs
- Research on performance metrics for workforce management
- HR metrics at DOTs
- Making the case for strategic workforce management (i.e., Case Studies)
- Using HR & workforce management to strategically meet a future DOT vision (i.e., Case Studies)
- Developing a business plan
- Examples of organization and staffing models based on a vision for the transportation industry
- Inventory role of partners (i.e., resources, services)

2. Outsourcing offshoot (**How Outsourcing Affects the DOT workforce**)

- HR functions successfully outsourced by AASHTO states (i.e., Case Studies)
- Successful methodologies to shorten outsourcing processes
- Workforce challenges to outsourcing
- How to evaluate available resources for outsourcing

Workforce Management

1. Training & Competencies (**Getting and Keeping a Skilled DOT Workforce**)

- Standardized competencies with associated curriculum options
- Helping initiatives like LTAP to get more funding
- Training for competencies
- Developing more cost-effective relationships with Universities
- Best practices for maintaining core competencies to oversee outsourcing

2. Innovative Compensation & Classification Systems in DOTs & Other Entities (**Thinking Outside the Box: Innovations in Workforce Management Systems**)

- Methodology to reduce absenteeism and motivate attendance
- Best practices for streamlining job classification systems

- Performance standards for contract management, lost work days and costs per employee/accidents
- Research in innovative “total compensation” systems
- Employee incentives that work
- Best practices for performance appraisal systems

3. Compensation Studies (**Taking Inventory of Your State DOT Workforce**)

- Salary studies
- Salary data (market-based and private vs. public)
- Analysis of paid-leave benefits and cost of healthcare
- Total compensation analysis
- Benchmarks for HR (compensation, benefits, development)

4. Recruitment and Retention

- Analyze trends in professional makeup of DOT staffs
- Trends in intern usage for project delivery and future employment
- Diversity recruitment
- Survey of universities of graduation statistics for civil engineering students including diversity information
- Survey of universities of enrollment and graduation trends in civil engineering
- Generating interest in engineering from grades K–12
- Identify barriers to drawing more students to engineering
- Best Practices for recruiting strategies (i.e., engineers, IT, finance, etc)

Other Non-Research Funding Needs

- Internet clearinghouse for workforce management metrics
- Central clearinghouse for information on workforce management
- In-depth forums or workshops to share detailed practices
- Funding to provide linkages to HR professional associations
- Develop a Web site with best practices and contact names
- Problem solving forum for workforce issues updated quarterly (i.e., via a Web site)

- Place to share practices
- Website that addresses workforce questions with answers
- Reactivate AASHTO Administration Subcommittee

4.5 CONCLUDING REMARKS

At the end of the discussion on Friday, the conference was concluded by promising remarks from both King Gee of FHWA and Todd Lamphere from Washington DOT. Mr. Gee thanked the participants for coming and giving the NCHRP panel a lot of ideas on how to move forward with this issue. He assured the group that FHWA would continue to support state DOTs. Mr. Lamphere echoed the compliments of Mr. Gee and stated that while there are plenty of areas where improvements are needed, there are people out there making changes in the field and it is a matter of constantly evolving as an organization. He stated that his experience speaking at workforce management conferences and seminars (often to standing room only audiences) only supports his belief that workforce management is on everyone's mind. Mr. Lamphere emphasized to the group the importance of fully accessing and using the resources and organizations that are available to workforce and operations managers. The conference ended with each participant adding his or her own impressions of the conference. Bob Johns thanked the group for coming and wished them all luck in converting research to action.

APPENDIX A: State Departments of Transportation Interviewed

HUMAN RESOURCE PERSONNEL

STATE

Arkansas
California
Colorado
Connecticut
Delaware
Florida
Georgia
Hawaii
Indiana
Iowa
Kentucky
Louisiana
Maryland
Michigan
Missouri
Nebraska
Nevada
New Jersey
New York
North Carolina
Oregon
Pennsylvania
South Carolina
Tennessee
Texas
Virginia
Utah

TITLES INTERVIEWED

Human Resources/Personnel Director (15)
Human Resources/Personnel Manager (5)
Deputy HR/Personnel Director (3)
Personnel Resources Management Officer
Chief Human Resources Manager
Executive Director, Personnel Management
Personnel Manager

OPERATIONS PERSONNEL

STATE

Colorado
Connecticut
Florida
Georgia
Indiana
Iowa
Kentucky
Michigan (2)
Missouri
New Jersey
New York
Oregon
South Carolina
Tennessee
Texas
Utah
Virginia

TITLES INTERVIEWED

Chief of Organizational Development
Chief Engineer
Asset Manager
Director of Project/Planning Development
(2)
Contracts Director (2)
Central Services Director
Audit Director
Design Coordinator
Director of Maintenance
Manager of Highway Operations
ITS Manager
Director of Operations
Deputy State Highway Engineer
Director of Traffic Engineering
State Traffic Operations Engineer
Traffic Safety Manager

APPENDIX B: Challenges Identified for Outsourcing and Human Resources

<u>Target Area</u>	<u>Challenge</u>
Outsourcing Arrangements	More flexibility in negotiating task rates with contractors
	Standardized auditing of DOT procedures for cost comparison
	Standardized Manual for handling large contracts
	Needs to address “short-term” benefits of contracting vs. “long-term” benefits of in-house work
Personnel Regulations	More flexibility regarding pay grades, dual incumbency, providing individual incentives
Benefits Provision	More concentration on “low cash” bonuses that workers take seriously (i.e. telecommuting)
	Adequately provide for geographic cost of living differences
Communication	Reaching out to public and lawmakers to promote relative cost-effectiveness of DOT
	More effort convincing entry level employees of greater significance of DOT benefits packages

<u>Target Area</u>	<u>Challenge</u>
General/Philosophical	Lack of visioning about future of transportation and DOT's place in providing it
	Needs to address dual pressures of being more "business-like" yet inclusive and "fair"

APPENDIX C: Targeted State Human Resources Programs and Initiatives

Target Area	State	Strategy
Recruitment Expansion	Delaware	Hired a dedicated recruiter
	Georgia, Pennsylvania	Recently expanded recruitment departments
	New Jersey	Hires pre-graduated college seniors if they have completed set number of internship hours
	North Carolina	Starts new hires off as entry-level engineers while giving on-the-job training
	Missouri, Nevada	Offer compensation for moving expenses
Hiring Process	California	Utilizes online entry-level state employment testing
	Nevada	Permits “in-house” hiring for priority personnel, circumventing normal state personnel office
	Texas	Started “rapid-hire” program for difficult-to-fill positions
Retention Incentives	Virginia, Texas, NC	Offer Performance-based pay for individuals
	Georgia, Arkansas, Louisiana	Have Accelerated Promotions to increase entry-level employee investment
Succession Planning	Florida, Maryland, Colorado	Mandatory mid-level manager training
	California	Runs succession training for executive management
	Florida	Deferred Retirement Option Program (D.R.O.P.S.)—incentives to remain and train replacements

APPENDIX D: Workforce Management Workshop Documents