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NCHRP SYNTHESIS 349

Developing Transportation Agency Leaders

A Synthesis of Highway Practice

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TRANSPORTATION RESEARCH BOARD

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FOREWORD

*By Staff
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Highway administrators, engineers, and researchers often face problems for which information already exists, either in documented form or as undocumented experience and practice. This information may be fragmented, scattered, and unevaluated. As a consequence, full knowledge of what has been learned about a problem may not be brought to bear on its solution. Costly research findings may go unused, valuable experience may be overlooked, and due consideration may not be given to recommended practices for solving or alleviating the problem.

There is information on nearly every subject of concern to highway administrators and engineers. Much of it derives from research or from the work of practitioners faced with problems in their day-to-day work. To provide a systematic means for assembling and evaluating such useful information and to make it available to the entire highway community, the American Association of State Highway and Transportation Officials—through the mechanism of the National Cooperative Highway Research Program—authorized the Transportation Research Board to undertake a continuing study. This study, NCHRP Project 20-5, “Synthesis of Information Related to Highway Problems,” searches out and synthesizes useful knowledge from all available sources and prepares concise, documented reports on specific topics. Reports from this endeavor constitute an NCHRP report series, *Synthesis of Highway Practice*.

This synthesis series reports on current knowledge and practice, in a compact format, without the detailed directions usually found in handbooks or design manuals. Each report in the series provides a compendium of the best knowledge available on those measures found to be the most successful in resolving specific problems.

PREFACE

This synthesis will be of interest to state department of transportation (DOT) personnel, as well as to other professionals in both the public and private sectors, dealing with the issue of leadership training and succession management in the 21st century. Workforce issues remain at the forefront of discussions occurring within the ranks of public agencies and throughout corporate America. Leadership development is viewed as a key success factor. This synthesis examined practices and programs in search of optimal solutions to this important aspect of state DOT management and operations. Program information is presented about practices and innovative approaches that address the development of transportation leadership in today’s work environment. Four key subtopics were examined: demographics, recruitment and retention, leadership training, and succession management. Appendices offer narrative survey responses, leadership resources, and examples of leadership development programs.

This synthesis report of the Transportation Research Board contains information derived from a survey distributed to state DOTs. Twenty-five agencies responded. In addition, a literature review was undertaken to ascertain the depth of published information on the topic. Private-sector companies that engage in these types of programs were identified. Seven private-sector companies were willing to share their experiences and policies. Because they view leadership development as an investment and an important contribution to their long-term productivity, it is suggested that state DOTs might benefit from studying these examples in seeking further improvement.

A panel of experts in the subject area guided the work of organizing and evaluating the collected data and reviewed the final synthesis report. A consultant was engaged to collect and synthesize the information and to write the report. Both the consultant and the members of the oversight panel are acknowledged on the title page. This synthesis is an immediately useful document that records the practices that were acceptable within the limitations of the knowledge available at the time of its preparation. As progress in research and practice continues, new knowledge will be added to that now at hand.

CONTENTS

1	SUMMARY
3	CHAPTER ONE INTRODUCTION Background, 3 Synthesis Objective, 4 Approach, 4 Organization, 4
6	CHAPTER TWO LITERATURE REVIEW Demographics, 6 Recruitment and Retention, 6 Leadership Training, 7 Succession Management, 8 General Leadership Publications, 8
10	CHAPTER THREE STATE AGENCY OVERVIEW Background, 10 State Organization, 10 Summary, 13
14	CHAPTER FOUR RECRUITMENT AND RETENTION OF LEADERS IN STATE DEPARTMENTS OF TRANSPORTATION Recruitment, 14 Retention, 15 Other Actions, 16
18	CHAPTER FIVE LEADERSHIP TRAINING: PROGRAM ATTRIBUTES
24	CHAPTER SIX SUCCESSION MANAGEMENT State Program Status, 24 Existing Succession Management Programs, 25
27	CHAPTER SEVEN PRIVATE-SECTOR LEADERSHIP DEVELOPMENT
30	CHAPTER EIGHT CONCLUSIONS
31	REFERENCES
32	BIBLIOGRAPHY
33	APPENDIX A SURVEY QUESTIONNAIRE

40	APPENDIX B	STATES RETURNING QUESTIONNAIRES
41	APPENDIX C	NARRATIVE RESPONSES
48	APPENDIX D	LEADERSHIP DEVELOPMENT PROGRAMS

DEVELOPING TRANSPORTATION AGENCY LEADERS

SUMMARY The dawn of the 21st century has brought with it significant challenges for state departments of transportation (DOTs). Increasing demand for customer service, limited revenues, and workforce issues requires exceptional leadership at all levels of a public transportation agency. This synthesis project focused on developing transportation agency leaders and examines both public- and private-sector leadership programs in search of optimal solutions to this important aspect of state transportation agency management and operations. For the study, programs in 25 states as well as 7 private-sector firms were considered.

One of the most serious issues state DOTs must face is that large numbers of their employees, including those holding key leadership positions, will soon leave state service, either through retirement or by accepting employment elsewhere. This departure of skilled, experienced personnel, particularly from the leadership ranks of a DOT, will be devastating if not addressed proactively by each public agency. Although it is a trend that has been discussed for many years, some agencies are not acting on this knowledge in a way to ensure that capable individuals are there to fill the positions vacated by these experienced leaders.

State DOTs have launched a variety of initiatives focused on developing transportation leaders to fill both present and future needs. Some of these programs rely on group development with large general training classes and curriculum. Others emphasize the employee's individual needs and work to prepare them to assume a future leadership role. Both provide value in their own way and individually address a portion of the workforce problem.

Many agencies understand that filling the ranks of their leadership positions should begin with the original recruitment efforts engaged in by the DOT. Hiring the right people, those with an aptitude and interest in assuming leadership roles in the transportation agency, serves as an excellent foundation for further development programs. Some would simplify the hiring process through their reference to a "workforce pipeline," as if it were a single conduit delivering qualified individuals to an agency to fill its vacancies. In reality, this pipeline has many branches and the route to DOT employment can be circuitous at best. A variety of methods are used to ensure that the right people are hired. These include the specific questions being asked during the interview as well as the selection of individuals who have a comprehensive view of their profession and organization.

It is not possible to address the issues of leadership and succession management without considering general workforce development. Training, educating, and otherwise improving the overall level of professional expertise among employees in general is key to creating a culture in which leadership and succession initiatives will thrive. Unfortunately, in challenging budget times, workforce development efforts are often the first element of a public agency to be cut. Employers, both public and private, who understand workforce development, work aggressively to ensure this does not happen, because they know this important investment affects the future success of their organization.

The important concept known as "succession management" should be considered along with recruitment and training. Succession management is the deliberate process of grooming

and developing leaders who will assume key roles in the agency's future. Some programs are formal, whereas others are not. Most are administered by the DOT's human resources director, although some are personally directed by the agency's chief executive officer (CEO). Research indicates that the most successful are those in which the state CEO takes a personal interest and role. Many of these state programs have experienced limited success owing to personnel rules and the absence of senior leadership involvement.

An important element of this review was an analysis of how private-sector companies are handling the development of their future leadership teams. Many private-sector firms, both in and out of the transportation industry, take leadership development and succession management very seriously. They view their investments in these efforts as contributions to their balance sheets that will result in long-term profitability. Key attributes of these private-sector programs include significant involvement from the company's chairman, CEO, or president; and diversity of experience focused on developing nontraditional skills in future leaders, such as finance for engineers, research for administrative personnel, and so forth. In addition, private companies have a profit motive because senior leaders know that their individual retirement programs will eventually be in the hands of those they select and develop as future leaders.

Leadership development is a key success factor for public- and private-sector companies in the 21st century; having such programs is no longer optional. The existence of effective programs will allow organizations to excel in these tumultuous times. Public-sector agencies will find value in the lessons and programs found among their private-sector counterparts.

INTRODUCTION

BACKGROUND

Transportation agencies face many challenges in this first decade of the 21st century. These challenges include the following. There is an increasingly high demand for more services. Infrastructure, once new and fully functional, now needs significant investment and renewal. Funding, although never plentiful, is in short supply, with no apparent remedy. Security concerns are a new issue that transportation professionals must address while in an unpredictable environment. These issues and others present transportation leaders with unprecedented and formidable obstacles and challenges.

Solutions to these challenges are complex and multidimensional. Agencies must recognize that whereas current or former strategies have been effective in dealing with past problems, they are often inadequate in dealing with present and future challenges. Historically, a transportation agency could rely on a skilled engineering workforce to step up and solve these problems—were they generally technical in nature. Today, however, technical skills are not enough, because they are not adequate in addressing current policy, procedural, operational, and legal issues.

Leadership is emerging as a potent discriminator between agencies that excel in meeting 21st century challenges and those that merely operate in a survival mode. Understanding the nature of leadership includes comprehending how it differs from management, because these terms are often incorrectly interchanged.

The skill set for leaders is, in most cases, not technical, nor is it related to the basic engineering work routinely performed by transportation agencies. Today, the transportation world needs leaders who are able to help their organizations thrive on present challenges and develop new strategies for the future. Such leaders must be able to take agencies with modest financial resources, constrained staffing levels, and increasingly complex legal issues and transform them into operational systems that give exceptional customer service. The challenge is to find, cultivate, train, motivate, and liberate these individuals who will then be able to accomplish this significant task.

This synthesis project focused on developing leaders in transportation agencies. The choice of the term “leader” was careful and purposeful. As stated previously, leadership is

not merely management. Leaders inspire people; they leverage the skills and abilities of team members in ways that cause synergy in accomplishing goals and facing challenges.

In further emphasizing the difference between leaders and managers, it is safe to say that leaders often manage but that management does not define leadership. In traditional organizations, the supervisor/manager manages things—vehicles, personnel systems, property, and other tangible assets and activities, whereas leaders lead people. Leaders achieve objectives by providing vision, inspiration, coaching, encouragement, and commitment to team members, then allowing these same individuals to excel. A manager cannot inspire this kind of performance, but a leader can. Leaders are facilitators who remove barriers. In the words of Max DePree, “Leaders don’t inflict pain; they bear pain” (DePree 1989). This distinction between leaders and managers is important because it will be the leaders who transform our transportation system in the coming years, not those who function strictly as managers.

An interesting phenomenon of state departments of transportation (DOTs) is that the chief executive officer (CEO) and many of their direct subordinates are appointed officials. Although some may have worked their entire career at the state DOT, others are positioned in the organization following the election of a new governor or the appointment of a new transportation commission or board. When a leader comes from outside a traditional organization, such as a state DOT, he/she face additional challenges. For example, loyalty and trust must be earned in a short period of time. Depending on the political climate, longevity may be an issue, because the leader may have fewer than 4 years experience. The expectations of those making the appointment may not be compatible with the realities of a public agency. In some respects, a situation where a public official serves at the will of an elected official or board is really no different than a key leader in a private-sector company who serves at the will of a CEO or a board of directors.

Good leaders do not necessarily have to be charismatic. For example, Jim Collins, in his book, *Good to Great* (2001), identifies the leaders of some of our country’s most financially successful companies of the last century. Each performed ahead of the financial markets over a recent period of 15 years. Some of the companies considered “great” included Circuit City, Walgreen’s, and Gillette. In his book, Collins includes profiles on Alan Wurtzel, Cork Walgreen, and Colman Mochler as the

CEO's who made these companies great. To qualify, a company had to adhere to the following basic pattern: "fifteen-year cumulative stock returns at or below the general stock market, punctuated by a transition point, then cumulative returns at least three times the market over the next fifteen years." With much less fanfare, their companies outperformed many well-known and higher profile industry giants. These leaders are not generally familiar, nor are they household names, such as Jack Welch or Lee Iacocca.

Although the performances of private companies offer a definitive tool for measuring the effectiveness of their leadership team, a state DOT has no such gauge. Margins or overhead are not measured, nor do they have the same accountability to shareholders that exists in a private-sector organization. Nevertheless, public-sector agencies are measured, if not specifically through profit margins, then through the eyes of a discerning public and critical analysis by elected officials. Succeeding in either or both of these forums requires more than just the routine execution of construction, maintenance, or operations activities. Leadership is the key to ensure that an agency fulfills its responsibilities to the public it serves. Without it, the agency is a rudderless ship, drifting without bringing specific achievements to the state's transportation.

Additionally, private-sector leaders are not the only group recognized for contributing to their respective industries. A number of entities offer honors or rewards to those in the public sector who have excelled in leadership and management. For example, *Engineering News Record* annually highlights the top 25 newsmakers of the year and chooses one from that group as the top newsmaker. These individuals are often from the public sector and have made major contributions to the engineering profession as well as to their constituent communities. *Governing* magazine offers similar recognition, as does the American Public Works Association, which each year identifies and honors the country's top 10 public works leaders. As with the highlighting of private-sector leaders, those identifying the successes within the public world can offer valuable insights into the characteristics of great leadership.

Compounding the challenge of providing leadership in transportation agencies is the issue of the aging workforce. Some estimates put the range of possible retirements from agencies at 40% to 50% of the workforce within the next few years. Many of those retiring have three and four decades of experience. The loss of this wealth of knowledge and experience is certain to be a major issue for state DOTs in the future, because it will leave a void that must be filled. Replacements will most likely have less experience yet face greater challenges than their predecessors: the learning curve will be steep, to say the least. However, experience has shown that they will learn, develop, and rise to the challenge and that the ensuing changes in the agencies will be positive.

Although this report focuses on state DOT leaders and leadership programs in their agencies, there is a striking sim-

ilarity between DOTs and other public entities. Cities, counties, and other public organizations are under many of the same pressures to serve customers, maintain facilities, deal with straining budgets, and cope with often inflexible personnel systems. As this is the case, much of the information in this report can be directly applied to other public agencies.

The new leaders for this century will have to be trained, seasoned, and developed in an accelerated fashion. Thus, the topic of this synthesis, Developing Transportation Agency Leaders, is both important and timely for the transportation industry.

SYNTHESIS OBJECTIVE

This synthesis will document state practices in developing transportation leadership and report on innovative approaches that address this issue in today's work environment. The report will cover hiring, development, evaluation, and retention of current and future leaders and also evaluate the effectiveness of these practices.

APPROACH

The study approach for this synthesis involved a number of efforts designed to assess initiatives among transportation agencies in their leadership development and succession management programs. A survey was prepared and distributed to the states with questions comprising the following four key subtopics related to the overall report:

1. Demographics,
2. Recruitment and retention,
3. Leadership training, and
4. Succession management.

States were offered three means for completing the survey; facsimile, U.S. mail, and the Internet. The complete project survey is found in Appendix A. Twenty-five states responded to the survey, and this information serves as the basis for the analysis provided in the report.

In addition, a literature review was undertaken to ascertain the depth of published information on leadership development and succession management. Finally, private companies that also engage in these types of programs were identified and, to the extent they were willing to share their experiences and policies, are included in the synthesis.

ORGANIZATION

Chapter one contains a brief summary of the current situation in state DOTs concerning the specific workforce challenges of hiring, developing, evaluating, and retaining current and future leaders. It also includes a statement of the synthesis

objectives and study methods, as well as information regarding the organization of the report.

Chapter two provides a summary of the literature review, with common themes and observations presented. This chapter focuses on the practices that appear to be the most successful in addressing the synthesis topic. In addition, practices from other industries, as identified through the literature review that appear to have application, are included.

Chapter three highlights the background information gathered in the survey. It emphasizes demographics by state, attrition levels by experience and position, and other external and internal constraints. Additional pertinent background material will be provided to establish the context and foundation for the remainder of the report.

Chapter four is a consideration of state practices for recruiting and retaining current and future leaders. Possible trends and practices that could serve as models for other agencies to follow are identified.

Chapter five is a review of the various state leadership development programs, including information regarding their implementation and effectiveness.

Chapter six contains a summary of state-reported succession management initiatives currently in place in the respective DOTs. Best practices are identified and discussed. Both formal and informal succession management practices are considered.

Chapter seven discusses the private sector, which has much to contribute to state DOTs concerning leadership development programs. This chapter covers a sampling of private-sector firms and highlights their programs.

Chapter eight presents the major conclusions reached in this synthesis effort. The discussion covers an array of the most successful practices relating to hiring, developing, evaluating, and retaining current and future leaders in transportation agencies. Based on the results of the effort, suggestions are made for areas that need further study.

LITERATURE REVIEW

The topic of leadership has been considered often and in great detail. On this subject, nearly as many theories and approaches exist as there are authors and speakers. For the results of this synthesis to be relevant, reviewing a sampling of the available literature is both appropriate and necessary. In addition, leadership analysis includes related issues that must be reviewed to provide a full picture. Therefore, some of these subjects will also be covered.

DEMOGRAPHICS

Demographics will play a large part in the future of agency leaders. Some authors who have focused on transit agencies have identified changes in demographics and technology as the hardest problems they face. As workforce demographics change, so will the workers who are slated to become future agency leaders. The Hudson Institute projects that participation of older workers in the workforce will continue to increase, especially in areas where workers are more educated (Judy and D'Amico 1997). This increasing number of older workers and leaders will offer transportation agencies and private companies a cadre of experienced individuals to draw on for key leadership positions. By the year 2020, Americans over the age of 65 are expected to constitute 16.5% of the population, and this segment of our society will continue to increase as the baby boomers age. Participation by women in the workforce is also expected to increase along with increases in immigrant labor—both will continue to make up large portions of future workforce increases.

Training magazine conducted a survey on the state of training in the United States. Its findings included information on the demographics of training programs and on the actual leadership training programs offered by organizations (Delahoussaye 2001). The studies showed that, in the transportation industries' leadership development programs, participants are 63% male and 37% female, with 74% of European decent and 24% of non-European decent. For comparison purposes, current census data show that 22% of the U.S. population is of non-European descent. Of those entering their company's leadership development program, 20% are younger than 30 years of age, 37% between 30 and 39, 31% between 40 and 49, and 14% over age 50. Sixty-two percent of managers are participating in some kind of leadership development program. Of entrants into leadership programs, 83% have previous full-time, salaried work experience and 77% have in-company experience. Interestingly, 73% lack a Mas-

ters in Business Administration or a similar degree. The authors reported that nearly half of the participants in leadership training make less than \$50,000 and speculated that organizations are offering training to a wider base than ever before.

RECRUITMENT AND RETENTION

Recruitment and retention are important for the overall workforce within an agency, but become major factors in determining the depth and breadth of an agency's leadership corps. In a 2000 survey, only 20% of the survey respondents stated that they have the talented leaders they need to meet their requirements, with 99% reporting that their management pool needed to be stronger in 3 years. The workforce will grow by 12% between 1998 and 2008; however, the 25 to 44-year-old age group, the future leaders, will decrease by 6%. The next generation of leaders will be different in many ways from their present counterparts. They will have high career expectations in the transportation industry and require opportunities in the work place, including the ability to grow, learn, and overcome challenges. Survey respondents were found to value the ability to make independent decisions, to be involved, and to make a meaningful contribution (Mure 2001).

The workforce of today is more willing to relocate than it was in the past. *The War for Talent* survey (Michaels et al. 2001) found that 20% of managers reported that there was a strong chance, and 28% that there was a moderate chance, that they would leave their current employer in the next 2 years. Furthermore, it was found that younger managers are 60% more likely to leave than their older counterparts. Individuals reporting a 30% chance of leaving their company within 2 years were asked to list the reasons. The top five were as follows: insufficient career advancement opportunities, better wealth-creation opportunity elsewhere, do not feel valued by my company, insufficient reward or recognition, and higher salary and benefits elsewhere.

To retain key employees, companies must make them feel that they are part of the greater vision of the company and allow them to participate in company leadership. Companies that do not offer these opportunities will lose employees to more progressive workplaces (Mure 2001). Research has found that managers want a job that is exciting, offers challenging work within a well-managed firm, provides a wealth-creation opportunity, helps to develop their skills, and meets personal and family needs (Michaels et al. 2001).

One of the reasons employees cite for leaving an organization is their relationship with the manager. With this in mind, Ahlrichs (2003) describes about how to become an employer of choice. She suggests organizations add recruitment and retention to their strategic plan, set measurable objectives, build a top-employer reputation, hire well or not at all, treat employees like customers, and develop current employees for tomorrow's needs. To become a manager of choice, leaders must master five competencies: talent scouting, relationship building, trust building, skill building, and organization brand development.

To retain individuals, agencies must focus on long-term retention goals, including career paths, training, and lifestyle benefits. Employees give reasons such as lack of career development opportunities, burn-out jobs, difficulty balancing work and family, and lack of appreciation as reasons to leave a company. To avoid losing employees, companies must keep them from becoming bored and allow them to see a long-term future within the company. Areas that companies must focus on include basic leadership skills training for both new employees and existing management. Companies also need a performance management program with rewards for both above-average performance and for managers who retain good employees. Although compensation is not the most frequently cited reason for leaving a company, employers must stay current and offer competitive compensation to their employees (Mure 2001).

Employees must be given feedback concerning their role in the overall success of the company. They want information about the goals of the company and how they can contribute to those goals. Companies can also offer flexible work schedules, casual dress codes, and reasonable time off for family activities to help employees balance their work life with their life outside of the work environment (Mure 2001).

Ashby and Pell (2001) discussed *Fortune's* 100 best companies to work for in their book *Embracing Excellence*. These companies have a turnover rate of 12.6% per year, which is lower when compared with other companies, with annual turnover at 26%. These companies also receive more job applications and have better stock performance than those with higher turnover rates. According to the authors, human resource consultant William Byham, speaking of a survey of 150 *Fortune 500* companies, stated that "The average company expects 33% turnover at the executive ranks in the next five years, and fully one-third said they're not confident that they will be able to find suitable replacements. . . . The average one-year estimated replacement cost is \$750,000," including costs for finding and training the new hire.

LEADERSHIP TRAINING

In *Training* magazine's survey of training practices, the authors found that of the leadership training programs queried,

33% are formal, 25% are informal, 20% are ad hoc, and 20% are mixed. Seventy-eight percent of participants attend only one session or attend only occasionally, whereas 42% of the organizations reported an ongoing program with multiple sessions. Participation has both mandatory and voluntary components in 55% of the organizations. Most companies are using classrooms (97%), conferences and meetings (83%), and videotapes (72%) for their leadership training. The survey also found that the most important factors for choosing participants are job performance within the organization and current function or department specialization. The average cost per participant varies by company size. It ranges from just over \$6,000 for organizations with fewer than 500 employees to more than \$7,500 for organizations with more than 10,000 employees (Delahoussaye 2001).

The same survey of training in the United States showed that, for formal training efforts, the transportation industry used instructor-led training 71% of the time, which is near the national average of 73%. Almost 40% of training is devoted to teaching computer skills. The study also showed that 48% of the training "purchasing power" was done by the training or human resources departments, whereas 38% was from information technology departments. In the transportation industry, 78% of the training was designed, and 53% was delivered, by outside sources. The average of all industries is 58% for design and 45% for delivery from outside resources (Delahoussaye 2001).

According to several transit industry authors, leadership is a direct result of corporate culture. The culture of an agency will determine the values espoused by both the leaders and the employees. Culture will also determine how leaders are chosen, whether through succession planning or a more fixed, bureaucratic process. These authors also found from survey answers that many agency leaders believe that they are able to make most training decisions on their own, but that they must get permission to do anything viewed as outside traditional approaches. Authors advocate making leadership training available to more employees and making it available earlier in their careers. They advocate using methods such as job rotation to allow employees to gain the needed skills to lead an agency. These authors also found that upper management needed to be involved with employees in the lower levels of the organization to seek potential future leaders. They found that employees involved in organizational decision making early in their careers were more successful leaders. They also found that employees expect to be involved in these decisions (Davis 2003).

In *The War for Talent*, survey managers ranked job experiences as the most effective training tool, followed by coaching, feedback, and mentoring. Classroom training ranked considerably lower. The jobs that managers listed as best for development were position with a larger scope; involvement in turning around a business; starting a new business; working on a large, high-profile special project; and working outside

the home country. The authors suggest that because such opportunities may be limited, it is important to assign them to those with the most potential talent.

They also recommend two types of leadership training as being effective. The first is foundational managerial education offering basic skills for new or junior managers. Second is leadership development training, given to members of middle- and upper-level management; they advocate that it should be offered by top-level management, plus give high-quality feedback to participants (Michaels 2001).

SUCCESSION MANAGEMENT

In *The Leadership Pipeline*, Charan et al. (2001) define succession management as “perpetuating the enterprise by filling the pipeline with high-performing people to assure that every leadership level has an abundance of these performers to draw from, both now and in the future.”

Succession management must be tied to leadership development. This means that succession management should be more than a list, but must also allow employees to develop the skills they need to meet company requirements. Classroom learning experiences do not necessarily make this happen. Employees need opportunities such as job rotation, special assignments, or action groups that make recommendations on a timely and significant topic. Organizations should also consolidate succession management and leadership development to extend their view of potential executive talent. The authors note that a focus on linchpin positions is important; those that are extremely important to the success of the company or those that first show the potential of a future leader. They also advocate some level of transparency in succession management, which may range from informing employees that they are marked as having potential to disclosing actual rankings of employees (Charan et al. 2001). Another suggestion is to place employees in charge of keeping their own files up to date, with a check from supervisors to avoid over-exaggeration (Conger and Fulmer 2003).

According to Sorcher and Brant, “CEOs and other top executives know that one of their most important jobs is management succession, and they are well aware that the process of identifying potential leaders is neither simple nor straightforward.” They suggest that leadership is hardwired into people in their early to mid-twenties. This means that CEOs need to spend time on identifying, and not developing, leaders. Corporate leadership development is only useful for creating better managers (Sorcher and Brant 2002).

In *The War for Talent*, Michaels et al. (2001) suggest that CEOs and senior human resource officers should run succession management or talent review meetings. These meetings should include the top 400 to 800 managers in a large

company or 40 to 100 managers in a small company. Of high performing companies, 49% make talent one of their top three priorities for selecting and advancing leaders in their organizations.

GENERAL LEADERSHIP PUBLICATIONS

Outside the realm of basic study on leadership, such as this project, there exist many publications that cover the topic in great detail. They cover the spectrum of philosophies with their respective advocates and critics. Some are considered biographical in nature, such as *Jack Welch & the G.E. Way: Management Insights and Leadership Secrets of the Legendary CEO* by Robert Slater (1998), which describes how Welch’s almost legendary style transformed the culture and leadership of one of the world’s largest companies. An older book, *Iacocca: An Autobiography*, recounts the leadership and management attributes of the man who brought Chrysler back from near failure and how innovative thinking in the early 1960s created the popular Mustang automobile (Iacocca and Novak 1986).

Other contemporary books on leadership include such works as *Leadership Is an Art* by Max DePree, the former CEO of Herman Miller, Inc. DePree offers a view of leadership that contrasts with the larger-than-life images included in the books on Welch and Iacocca. He suggests that leaders should have a strong human side; they should share the pain of employees and not be autocratic or despotic in their approach but rather compassionate, kind, and humble. DePree is perhaps one of the best authors at delineating the differences between management and leadership (DePree 1989).

Covey’s *Principle-Centered Leadership* (1991) offers the reader a vision of leadership that focuses on the core values and attributes of an individual and suggests that these attributes are what drive leaders and organizations to excel. He also asserts that if one is true to this principle-centered core, then decisions and actions will always be in accordance with fundamental values and culture.

The list of authors writing about leadership methods is long. The extensive nature of leadership literature may be a reflection of the topic’s complexity; it is hard to define, looks different under varying circumstances, has diverse applications depending on the individuals involved, and seems to change over time. Ultimately, leadership style must match organizational culture, or one of them must change. The variety of works on leadership offering various opinions, approaches and strategies to fit each person, organization, and culture can be a valuable tool. The Bibliography contains additional works considered to be most useful, but that are not cited in the text, and may be used as a beginning reference list for the student of leadership training techniques.

In completing this literature review, it is worth mentioning that there is a conspicuous absence of works specifically written for public-sector agencies. Although there may be some publications that mention leadership in the public sector, there are few works that are focused strictly on government agencies and their leadership teams. Therefore, more often than not, public agency leaders turn to private-sector literature and examples for two reasons: First, the number of popular books and writings from the private sector on the subject of leadership and second, because most government organizations are

encouraged to emulate private-sector models of management and leadership and not other public agencies.

This sampling of literature on the subject of leadership, developing new leaders, and succession management is compelling in its observations and insights. Transportation leaders could benefit from combining the knowledge available in these publications with that contained in the remainder of this synthesis to properly advance leadership and succession management programs in their respective organizations.

STATE AGENCY OVERVIEW

BACKGROUND

Leadership at state DOTs has some unique characteristics. In some cases, the top position is filled by an engineer who has risen through the ranks and is a career professional. Others are appointed from outside the agency and may have little or no experience with a transportation organization. Neither approach is guaranteed to be successful 100% of the time, nor is either immune to disappointing results. Indeed, exceptional leaders have emerged from both processes.

One challenge facing a new state DOT executive is length of service. Most are appointed by the state's governor and serve at his or her pleasure, meaning that they can be removed from their position at any time. Although some states show great stability, such as Arkansas, where Dan Flowers has served for many years as the DOT's chief executive, others have seen more turbulent times. With short tenure comes the leadership challenge of inducing change in a state DOT over a relatively brief period of time. It has been said that change in a government agency can be described as Darwinian in nature and thus not susceptible to changes attempted by short-term political appointees.

Key to making substantive changes in a state DOT is buy-in from middle management and the agency as a whole. Time and again, fundamental change has been resisted by the rank and file despite the well-meaning efforts of a state CEO.

The lessons learned in examining the state of leadership in a DOT reflect the need for change to occur quickly and with as much support and buy-in from the employees as possible. A state CEO may have 4 or fewer years to affect the kind of change necessary for the agency to move forward in a dynamic world. Key leaders who can carry forward the programs that the CEO establishes from within the organization will have to be identified. Most employees involved will be in civil service positions, so the CEO will have to use persuasion and passion to advance ideas and programs, whereas private-sector leaders may have more threatening options available. Leading a state DOT is a tremendous task, one to be undertaken with deliberateness and conviction.

STATE ORGANIZATION

To fully understand the findings of this synthesis it is helpful to examine the characteristics of transportation agencies

today. This project effort included a survey assessment of various attributes of state transportation agencies (STAs) to establish a basic profile and also to form a basis for the comparison of leadership programs. Although state DOTs have much in common, they also have unique characteristics depending on geography, location within the United States, and mix of urban and rural elements. Therefore, what may seem a homogeneous group of agencies is really a collection of organizations with similar elements yet many differences. Twenty-five state DOTs responded to the survey request, providing a large amount of information from which to draw observations and conclusions.

Organizationally, most transportation agencies are similar; all have many business units in common including:

- Planning,
- Environmental,
- Engineering,
- Construction, and
- Administration.

These areas make up the business core of an STA. On the other hand, some agencies have additional units as part of their organization. Activities not shared by all agencies include the following types of business units:

- Motor vehicle,
- Driver's license,
- Ports,
- Rail,
- Bus, and
- Aeronautics.

In discussing leadership and succession management, the type of organization, its fundamental business units, and any special requirements may dictate the kind of programs an agency uses to develop its future cadre of leaders.

Agency size, in terms of total personnel, was assessed. This information was gathered with the dual purpose of profiling the agencies that responded and determining if fundamental differences in leadership development and succession programs were influenced by agency size. Overall, agencies

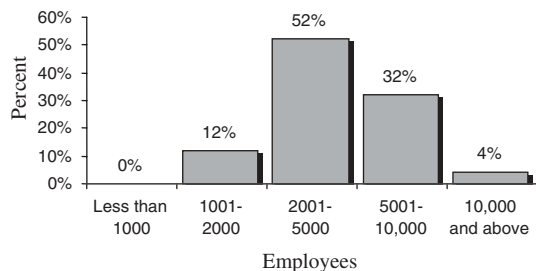


FIGURE 1 Distribution of DOTs by number of employees.

that responded to the survey ranged in size from more than 1,000 individuals to more than 10,000, with the average size in the 2,001 to 5,000 range. Figure 1 shows the distribution of agencies by number of employees.

Staffing trends were also sampled to determine if agencies were predominantly increasing or decreasing in size. Figure 2 shows how state staffing levels have changed in the last 2 years (from 2002) and reflects the predictions by each DOT of future trends. Although the majority of responding agencies saw a reduction in staffing levels during the last 2 years, these same groups anticipate stabilizing full-time equivalents in the future.

One of the demographic trends of interest in this project was the average age of the workforce in individual agencies. Figure 3 reflects these data as specified by the states. Although the age distribution shown in this figure is not itself alarming, some issues must be analyzed regarding this important demographic. The data reveal that 61% of agencies have an average age of 41 to 45, showing that the workforce is largely “middle-aged,” with approximately 20 years of service. Thus, most employees are not ready to retire immediately. Perhaps more important to consider are those agencies with an average age of 46 to 50 and those in the 51 to 55 range. These individuals are closer to retirement; and, in many cases, states

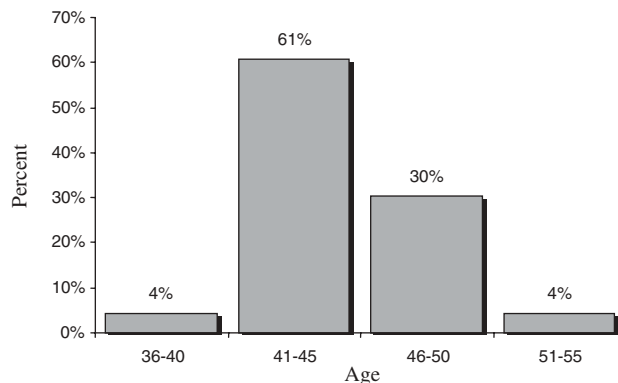


FIGURE 3 Employee age distribution in state DOTs.

reported that they hold key leadership positions. Note that no agency has an average age younger than 36 to 40.

Some of the questions in the state survey were designed to gain an understanding of the number of individuals in senior management/leadership positions eligible to retire in the near future. Each state was asked to identify how close key leaders were to retirement. Although intuitively the problem of retirements has been known for some time, it was felt that this report should explore the timing of this phenomenon. Figure 4 shows the information provided by the states regarding how soon their key leaders may retire. The following noteworthy observations may be made about the data in this table. First, over one-third of the top three levels in the state DOT leadership hierarchy are currently eligible to retire, with another 10% able to do so in the next 3 years. Also significant is that the three middle leadership levels show that more than 20% are eligible to retire immediately, with 10% able to leave in the next 3 years. Thus, although the average age of the workforce is in the low 40s, agencies face a high level of possible turnover of top leaders during the next several years.

This exodus of senior leaders from transportation agencies can be influenced by external factors, which may either

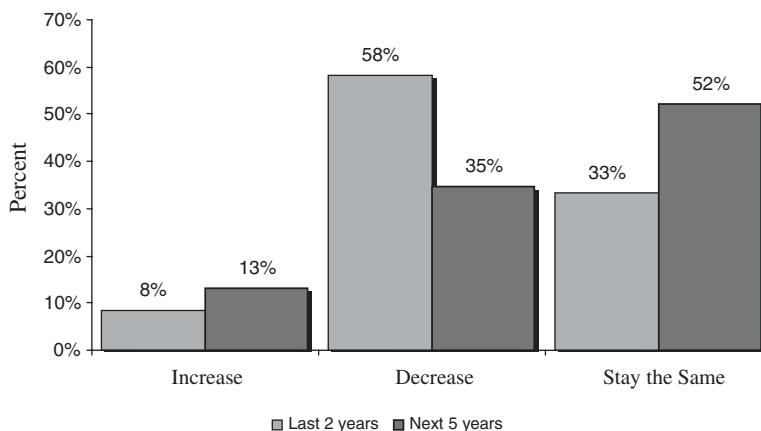


FIGURE 2 Recent and predicted staffing trends.

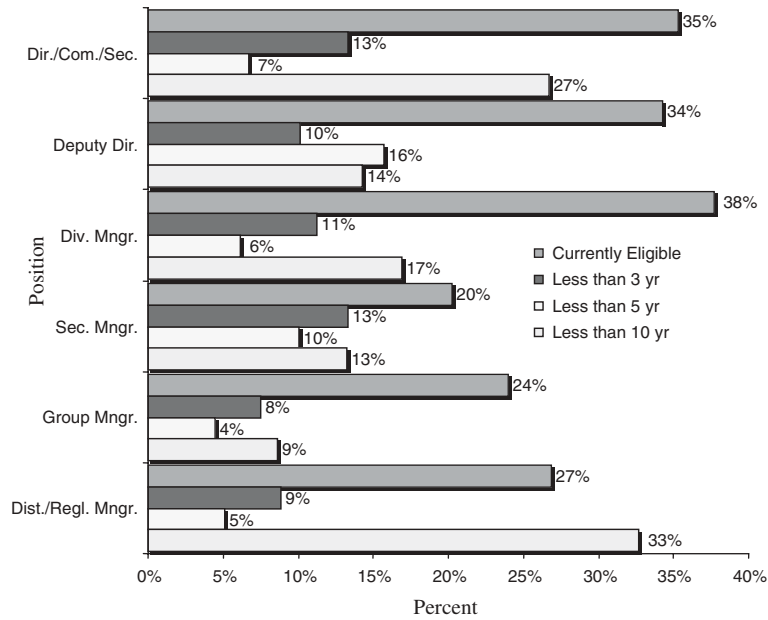


FIGURE 4 Retirement eligibility of senior management, by position. Dir. = director; Com. = commissioner; Sec. = secretary; Mngr. = manager; Dist. = district; Regl. = regional.

accelerate individual departures or cause leaders to leave in greater numbers. STAs were asked which factors were most significant in influencing senior leaders to retire early, thus increasing the pressure on leadership development and succession management. Figure 5 reflects the reasons offered by the states and the incidence of occurrence. Note that competition with the private sector ranks first, with 54% citing this as a reason. Both lack of pay raises and early retirement incentives were reported by 46% of the states as key reasons why senior leaders leave state service. One-third mentioned health reasons as a factor.

The challenge facing STAs in dealing with such external factors is that in most cases their influence cannot be mitigated through means internal to the transportation agency. For example, state legislators control salary levels for state employees. In many states these levels are not competitive with

the private sector. Depressed salaries, coupled with opportunities in the private sector offering competitive compensation packages, may cause leaders to terminate their state service prematurely and move to these other positions.

A strategy used by legislators to reduce pressures on state agency budgets is early retirement incentive programs. These programs are tailored to encourage high-salary state employees to retire earlier than they would under normal circumstances. The theory is that these individuals will be replaced with lower salary employees and the cost of this early retirement will be borne by the states' benefits programs and not come out of general operating revenue. It is a fiscally logical strategy, but it does not consider the consequences on the leadership needs of a state agency.

Some agencies are attempting to halt or at least slow this exodus and have implemented measures to ensure that key leaders remain as long as possible. The responses were varied, but the most often mentioned strategies for retention of leaders are the following in decreasing order:

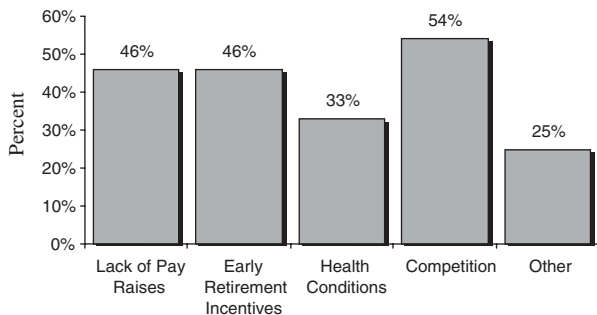


FIGURE 5 External factors influencing leader departures.

- Training, 46%
- Flexible work schedules, 38%
- Monetary incentives, 21%
- Possibility for increased retirement payments, 4%.

The overall response from the agencies reflects their limited ability to provide incentives to key senior leaders to entice them to continue their employment.

SUMMARY

State DOTs are facing key challenges in the 21st century. Pressure for timely delivery on customer's demands has never been greater. These organizations have evolved over the years so that agencies are similar in many respects but often have unique business units based on state requirements. Although agency size varies from state to state and titles may also differ, one issue agencies share is the looming crisis in leadership. Significant numbers of senior leaders will leave in the next few years, requiring, in many

cases, the appointment of younger and less experienced successors. The need to shore up leadership development and succession management programs in state DOTs has never been more critical. In spite of these challenges, this change may not be all bad, as new leaders often offer fresh perspectives on issues and practices. Cultures are altered as new leaders take charge and move ahead. How DOTs respond to changing demographics and current workforce pressures will, in large part, determine their future effectiveness as an agency.

RECRUITMENT AND RETENTION OF LEADERS IN STATE DEPARTMENTS OF TRANSPORTATION

Before discussing succession management and training programs directed at agency leaders, a sound recruitment program for quality individuals should be in place. Leadership development begins with the recruiting process, whereby quality individuals are brought into the organization and groomed to become future leaders. This process is complex, as anyone knows who has engaged in attempting to identify leadership potential or the lack thereof. Regardless of difficulty level, recruiting should include careful screening for individuals who may be candidates for future positions of responsibility. One DOT executive director would speak at all new employee orientations and each time single out the engineers, informing them that they were not hired to spend the rest of their careers as engineers in training or resident engineers, but that they were expected to rise through the ranks and become key leaders.

Once an agency has invested many years of training and experience in an individual, it becomes very costly to lose that person to another employer; therefore, an effective retention program should parallel an agency's recruitment efforts. Past review contained in *NCHRP Synthesis of Highway Practice 323: Recruiting and Retaining Individuals in State Transportation Agencies* indicates how challenging it is for state DOTs to have an effective retention program. In that report, a strong relationship was drawn between significant factors for recruiting individuals and those effective in retaining employees: basically, they were one and the same (Warne 2003).

The survey sent to the states asked for responses to a series of 10 questions regarding recruitment and retention efforts specifically related to current and future leaders. The following sections reflect the input received and provide an interesting perspective on how states are individually and collectively handling this important issue.

RECRUITMENT

States were first queried about recruitment programs and activities. Fifty-four percent reported a specific recruiting plan. When asked if they hire new employees with an eye toward future leadership potential, 83% responded positively. Although not all new hires will eventually become commissioner, director, or agency secretary, many may certainly be promoted into other significant leadership positions,

including district engineer or directors of planning or engineering, and so forth. Hiring "future leaders" is necessary before beginning any leadership development program in a transportation agency.

Many employers have had an opportunity to interview, assess, and hire individuals for their organization at some point. It is a challenging prospect to read a résumé, ask relevant questions, check references, and otherwise attempt to determine if a candidate is suitable. Quite possibly, nearly every reader of this report can relate positive experiences where exceptional individuals were hired and then became extremely successful. Conversely, each reader could also probably recall a hiring decision where the outcome was less satisfactory and may have resulted in the individual's dismissal. Sometimes, personnel rules can make a person's removal an untenable option. In other cases, leaders have failed to remove individuals when it is clearly evident that a change was necessary. Tolerance of poor performance then becomes the leadership challenge for the agency. With a limited number of positions to fill, restrictions on full-time employment growth, and other constraining factors, the need to hire only the best becomes more crucial each year.

Transportation agencies were asked to identify the key attributes sought in considering candidates for important hires. When interviewing possible future leaders, it would be helpful to be able to tell if the candidate was able to see the big picture and function as a strategic thinker. In this survey, 83% indicated that this attribute was specifically assessed in the interview process.

The states also employed other means for determining an individual's future leadership potential. The following shows state responses to the question, "What specific actions does your agency take to ensure that it hires future leaders?" Answers are provided in descending frequency of mention.

- Use specific questions in interviews that would reflect an applicant's leadership potential, 88%.
- Look at past leadership related activities, 83%.
- Consider references provided by applicants, 83%.
- Conduct multiple interviews with each candidate, 80%.
- Contact current supervisor, 71%.
- Administer tests or other instruments that would indicate leadership potential, 13%.

With the exception of the final answer, there is a strong indication of attempts in the interviewing process to identify future leaders. Clearly, most survey respondents use specific questions and other means to determine both a candidate's suitability for a position and future leadership potential.

Some additional responses to this question are interesting and disclose more tools for achieving the objective of finding future leaders. These responses included the following:

- Review applicant against leadership core competencies.
- Use outside recruitment agencies.
- Consider academic record for management and leadership curriculum.
- Consider diversity of professional and managerial work experience in the transportation field.
- Use an "assessment center" type approach to hiring leaders with living or role playing exercises, including external stakeholders and partners (i.e., engineering consultants) as part of the exercise development and evaluation team.
- The Maryland State Highway Administration asks quality orientation questions as part of the interview process and rates the responses.

These responses allow insight into how seriously state DOTs take the recruitment process and the creative means they use to clearly identify the highest quality candidates. Although not all apply in every state, others might consider these ideas.

Two specific skill sets are examined when hiring leaders in an organization. First, they must be technically qualified. Second, they must have the leadership skills necessary to assist the agency in its quest for success. This synthesis did not explore the technical side of this process, but focused solely on the leadership element.

States were asked to identify the core competencies that are important for leaders in their organizations. The responses were detailed and involved many common themes. They included competencies in the following:

- Leadership
- Communications skills
- Team building
- Change management
- Ability to work with the public
- Coaching, self-motivated
- Decisiveness
- Strategic thinking
- Partnering.

The Maryland State Highway Administration, an agency that has aggressively pursued leadership and employee development initiatives, also considers humility criteria for recruiting evaluations.

Technical abilities are not considered unimportant or irrelevant by any means. However, the need to have technical skills is a given, and an assumed competency in this area is the starting point for evaluating all other factors. For a full description of state responses to the question of core competencies, refer to Appendix C.

RETENTION

Some employees will leave any organization; no agency has a zero turnover rate. Reasons given for leaving are varied and often unique to individual circumstances. Therefore, the need to fill positions is a never-ending process and replacing any employee, especially a valued leader, is expensive. Some of the costs can be easily defined in monetary terms. These include the costs of recruiting a replacement and training a new employee and, perhaps, even the higher salary required to recruit a new leader. Other costs are less specific, but may have a bigger impact on the organization, including work-flow disruptions, morale issues, and distractions incident to others taking on additional duties until the new hire is able to assume all of the responsibilities of the position. Certainly, it is almost always better to retain competent leaders than to see them leave the agency.

The survey questions attempted to determine the kinds of problems transportation agencies face in retaining potential leaders. The state responses follow in descending order:

- Competition with the private sector, 61%.
- Pay and benefits, 59%.
- They do not want to deal with the administration/bureaucracy, 26%.
- They do not want to leave technical areas of the agency, 26%.

Other factors mentioned, but less than 25% of the time, were:

- Reluctance to contend with internal politics.
- Inadequate funding for projects.
- Perceived favoritism or other problems with promotions.
- Lack of training.
- Reluctance to contend with external politics.
- Lack of challenging work.

Note the clear break between "Competition with the private sector" and "Pay and benefits" and the other factors. Clearly, these are the two most critical areas for agencies as they address retention of key individuals, including leaders, in their organizations.

In a previous synthesis, recruitment and retention practices of state DOTs were explored in greater detail (Warne 2003). A review of that information will supplement what was reported by the states for this project. That report,

NCHRP Synthesis of Highway Practice 323, focused primarily on practices relating to agency professionals, including engineers, information technology professionals, and others. Although recruiting and retaining leaders was not the sole purpose of that review, it may be said that many of the professionals hired by these agencies will become leaders.

In that synthesis, it was found that key factors contributing to individuals leaving their state DOT positions included the following:

- Future salary opportunities, 62%
- Current salary, 47%
- More promotional opportunities, 28%.

In addition, when employees were queried about their reasons for joining the agency in the first place, they noted that state benefits, including vacation, health, and retirement potential were important. Interestingly enough, this review indicated that these same benefits also attracted those who left for private-sector positions and then returned to state employment (Warne 2003).

The key point of this retention discussion is that in attempting to retain departing leaders and future leaders doing nothing is not the answer. Understanding why individuals leave and effectively addressing those issues is something each state DOT must do. It has been found that many employees who are considering leaving do not understand the subtleties in how benefits differ between the public sector and the private sector. Often, state DOT benefits are far better but are not understood to be so by the employees. Given the trend toward benefits as a critical factor in attracting and retaining quality individuals, a simple analysis may be a powerful tool to use.

OTHER ACTIONS

Assuming that upholding the status quo was not the final answer to retaining quality leaders, the states were asked what more could be done to increase the likelihood that capable individuals will be prepared and retained to fill important future leadership/management positions. The answers were thoughtful and held valuable insights for those studying ways to become more effective in their own methods. A few are offered here, with a full listing found in Appendix C.

- Launch “Executive Workforce Development Program FY2004.”
- Reinitiate an aggressive succession planning model that focuses on leadership traits and competencies with continued development of executive coaching and skills training.
- Introduce a formal succession planning and leadership training program with thoughtful attention to department values and leadership characteristics, which are more comprehensive than the informal ones currently in place.

- Improve pay; encourage mentor/protégé links for succession planning; modernize the basic organizational structure to include manageable spans of control. (One respondent noted being directly responsible for 16 employees, 12 of whom are senior managers.) Provide more opportunities for leadership and management training, including hands-on opportunities to implement basic and advanced principles. (This individual also reported that a management reorganization plan had been submitted to a sister agency for approval and that they were awaiting such action before being allowed to proceed.)
- Develop a more comprehensive workforce development plan for the agency. Various components of a plan are being addressed. For example, leadership and management training is being offered to prepare employees for management positions and organization charts are being reviewed to identify positions that will be vacated because of retirement options that will be exercised during the next 3 to 5 years. However, it all needs to be pulled together in a systematic approach.
- The Michigan DOT is part of a pilot program within the state of Michigan to close the gap between values that are important and the evidence of those values in our behaviors. In the pilot, the Michigan DOT leadership team will participate in a 360-degree leadership profile. (A 360-degree profile includes querying subordinates, peers, and superiors regarding an individual’s performance.) The plan is to have all managers and supervisors participate as subjects, thus giving line staff the opportunity to participate in direct reports.

An additional increasingly important area of focus is recruiting women and minorities into positions that will ultimately lead them into the senior ranks. Experience has shown the need to actively pursue these efforts. The survey attempted to determine what actions states were taking to prepare women and minorities to be appointed to senior leadership and management positions in their agencies.

In response to the question of whether specific programs are geared toward women, states indicated that they were involved in the same training and other programs offered to male counterparts. However, no additional specific programs or special initiatives are offered by any state responding to the survey. Also, when asked if specific programs focus on minority employees to ensure preparation for senior leadership positions the answers were similar: minority employees are invited to participate equally in leadership and other training initiatives; however, nothing has been set up to specifically address their needs. Again, a full listing of responses by state can be found in Appendix C.

Diversity in the workforce is a growing phenomenon in state DOTs. What was once a very homogeneous group of white male engineers in state DOTs has changed into a workforce where many cultures are represented and women have

newfound roles. This has been a positive change for state DOTs and will continue to benefit agencies where greater diversity is experienced. A surprising result of this study is that specific programs that focus on the recruitment and retention of women and minorities are not reported by the states. Although this synthesis did not investigate this topic, there is the related matter of what state DOTs are doing to attract women and minorities to their agencies. Clearly, recruitment is the first step to creating a diverse cadre of leaders.

Leadership development starts with the recruiting process and the hiring of capable, high-quality individuals who have core competencies that will help them mature into great lead-

ers. States responding to this survey indicated a focused effort on finding the people with not only basic technical skills but also apparent leadership abilities. The states seem to know what they want and are making an effort to attract future leaders. DOTs face retention challenges owing to current and future salary levels. Strategies are in place to improve retention in their leadership corps, but most do not focus on the salary issue because they do not have control over this area of their human resources system. Private-sector competition will always be a factor. Agencies will need to be more aggressive in their recruitment and retention practices in the future to ensure the presence of qualified and competent individuals for key leadership positions in their organizations.

LEADERSHIP TRAINING: PROGRAM ATTRIBUTES

Leadership theories are numerous and diverse. One is that leaders are born and there is little an organization or management team can do to cultivate and train them. Others state that many individuals may rise to become leaders given the right circumstances and necessary skill sets. A significant premise of this synthesis has been that the latter of these two theories is correct.

Each of the 25 responding state DOTs has a leadership-training program in place, geared toward developing current and future leaders. This uniformly affirmative response from agencies whose overall purpose is focused on technical engineering activities reflects the importance attached to this vital human resource activity.

Questions in the state survey attempted to evaluate the basic characteristics found in each agency's leadership training program. Additionally, data were examined with the intent of ascertaining critical trends and areas of commonality, especially when program effectiveness was measured. The following discussion considers the attributes of the programs surveyed.

The survey first focused on who provided leadership training for state DOTs. Figure 6 reflects the states' responses. Note that nearly all agencies (96%) provide some element of their leadership training program. Oregon was the only state DOT not doing leadership training in-house; it is provided by another state agency. That a high percentage of states surveyed also use other state organizations to provide some leadership training is not surprising. Experience indicates that this usually is a human resources agency task. Also, 63% of state DOTs rely on the private sector to supply supplemental leadership training. Use of the private sector is further reflected in that one-third of states responding to the survey reported private-sector involvement when they do turn to another state agency for leadership training assistance.

Additionally, more than 40% indicated that they turn to other organizations when training leaders. Responses to this question cited two AASHTO management courses, including a 2-week program offered at the University of Indiana and 1-week courses offered around the country. FHWA is cited as an outside source, and so is higher education. The answers show that states are definitely engaged in obtaining leadership training from a variety of sources depending on their various circumstances.

The study also attempted to determine the current level of the individuals that were being trained. The survey offered the respondents five choices:

- Future leaders/supervisors/managers (those who will be appointed as leaders at some point in the future),
- New leaders/supervisors/managers (those who have recently been appointed to a leadership position),
- Mid-level leaders/supervisors/managers,
- Senior leaders/managers, and
- Others.

The results give important insights into the nature and focus of the state DOT programs for training leaders. Figure 7 provides a summary of answers to this question.

The group receiving the most emphasis is the mid-level leader. All states have some training element of their leadership program that is meant for this group. New leaders and senior leaders are the focus of training programs in 92% and 88% of the states, respectively. It is interesting to note that of the 25 state DOTs providing information for this project, 2 (8%) do not provide basic leadership training to new leaders and 21% are not investing in those individuals in the "future" leaders' group who may some day assume critical positions in the agency. These groups would appear to need training before anyone else.

Often training is a function of soliciting and receiving approval. One measure of a DOT's ability to be responsive to training needs is the ease of obtaining approval for training. For the purposes of this report, ease of approval was considered a function of the number of approvals required.

States were asked to identify which approval levels were required to allow an individual to attend a specific training course. Twenty-one states, or 84% of the respondents, cited the first level of approval as the immediate supervisor. Sixteen, or 64%, of the states indicated this to be the only level of approval necessary to attend the requested training. This is the most streamlined approach reported. In the five remaining states where the immediate supervisor first approves the request report, the second level supervisor must further endorse the candidates. In three state, California, Georgia, and Louisiana, where the immediate supervisor does not approve the training request, consent is obtained at another level.

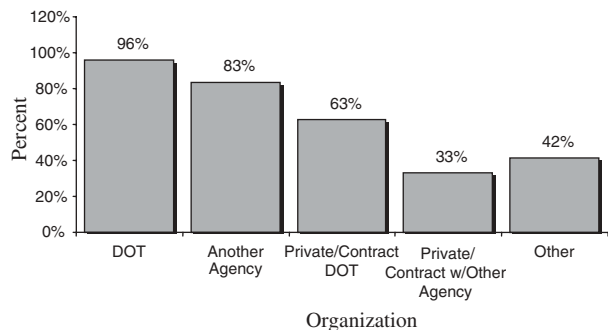


FIGURE 6 Distribution of organizations providing training to state DOTs.

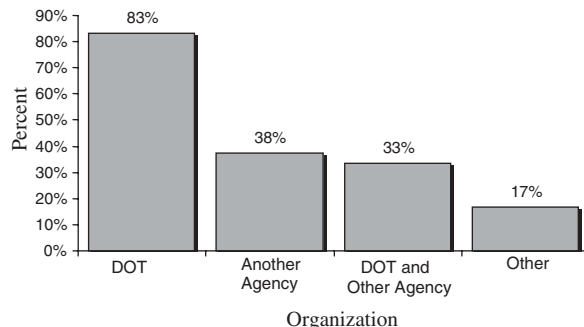


FIGURE 8 Who defines course content.

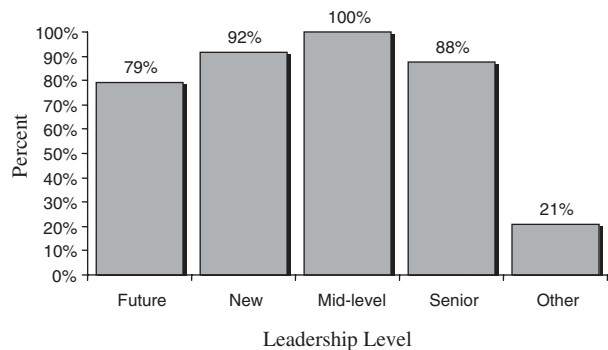


FIGURE 7 Training availability leadership level.

Who determines course content was also examined. It is not uncommon for senior leaders in state DOTs to be passionate about leadership and have a significant interest and influence on the course content of training programs. Figure 8 shows the answers to this question. It should be noted that the states were allowed to provide multiple responses to this question; therefore, the percentages in this figure will exceed 100.

Although 20 states indicated that they determine course content for their training programs, a consideration of all the state responses shows that almost all are also influenced by either another state agency or some other party. Of 20 states reporting that they determine the content or format of their programs, only 6 did not indicate some other influence. Thus, only 6 states (24%) that responded to this survey have complete independence in setting the tone, content, and format of

their leadership training program. This is undesirable only if the outside entities are requiring subject matter that is less than ideal for strong and effective leadership training.

This survey also sampled how training was delivered, with some interesting results. Delivery methods for leadership training among the states vary widely. Figure 9 shows the primary methods used. Notice that 100% of the states use some type of formal classroom training, which is an important key to accomplishing this task. Nearly half of the responding states indicated that they have a mentoring program in place that provides for a senior leader to help an individual who is just developing organizational and leadership skills. This powerful coaching tool can produce significant results owing to the concentrated efforts surrounding its implementation. However, it has been shown that mentoring programs require commitment and discipline on the part of both mentor and protégé to be effective.

Web-based training is also widely used among the states. This reflects two phenomena. First, the acceptance of web-based training as an effective tool for deploying training courses to large numbers of people has increased its use. Many universities and secondary education institutions as well as private-sector companies have also begun to use this approach. Second, web-based training is a cost-effective means for supplying a student with training information and materials. No travel expenses are involved, a single instructor can provide training to a larger number of students, and learning can occur at the convenience of the students rather

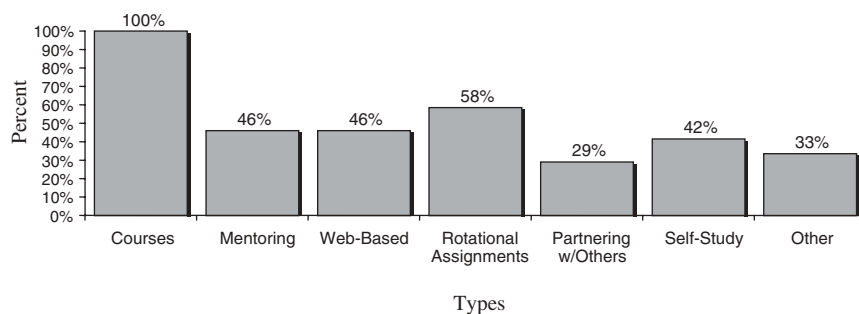


FIGURE 9 Distribution of types of training offered.

than that of the instructor. Current trends in training and education indicate that web-based instruction in all areas will continue to rapidly increase.

A strong showing (42% of the states) indicates the existence of some kind of self-study program directed at leadership training. Self-study programs are the natural precursor to web-based training.

Many states have some kind of rotational or engineer-in-training program to provide development opportunities for their employees; 58% indicated they use this method. Although this synthesis effort attempted to analyze the nature of state DOT leadership training programs, it was difficult to determine whether rotational programs are designed to train newly hired engineers in technical and operational programs or if they are definitely oriented toward leadership training.

A series of questions were posed in an attempt to determine the effectiveness of leadership training programs within the states. “Effectiveness” is a difficult term to define—it has almost as many definitions as the term “leadership.” This survey made no attempt to define effectiveness owing to the considerable variety of expectations and interpretations of this term. For some, effectiveness is simply having a program in place. Others measure effectiveness by the amount of money that is spent. Still others outcomes defined effectiveness in terms of agency performance and change. Consequently, for the purposes of this review, each agency was left to define effectiveness in its own way.

To achieve some measure of understanding about the effectiveness of a state’s leadership development program one question sampled the respondent’s views of their leadership training programs for leaders at different career stages. It is one thing to have a program in place, but training exist-

tence and program effectiveness do not always occur together. Figure 10 is a summary of the responses.

In the case of future leaders, 20% were “not satisfied,” indicating a judgment that not enough was being done to cultivate and prepare potential leaders for future positions. These future leaders were defined as individuals who were either about to be appointed or would be appointed in the near-term. Of the four principal leadership roles sampled, this group gave the lowest ratings for the effectiveness of training in the survey. This group also had the most uniform distribution of responses of any of the leadership categories.

The highest satisfaction levels were found with new and mid-level leaders. Referring back to Figure 7, note that these were also the groups that had the highest amount of training available. This correlation to satisfaction and availability is not accidental.

On a scale of “1” to “5,” with “5” being “very satisfied,” most states reported a rating of “3” (“average”) for effectiveness of their training programs for new, mid-level, and senior leaders. This average rating appears to reflect that more could be done to improve training effectiveness.

With the exception of the future leader category, only a small number of respondents rated program effectiveness as either “1” or “2,” which would have indicated a serious dissatisfaction with agency efforts in this area. This trend is important because it shows that whereas many see an opportunity for significant improvement (a reflection of the high number of “average” scores), the absence of responses on the lowest end of the ratings spectrum (senior, mid-level, and new) indicates that there is satisfaction with the effectiveness of training in all three categories. On the other hand, agencies should take no comfort in the high number of average

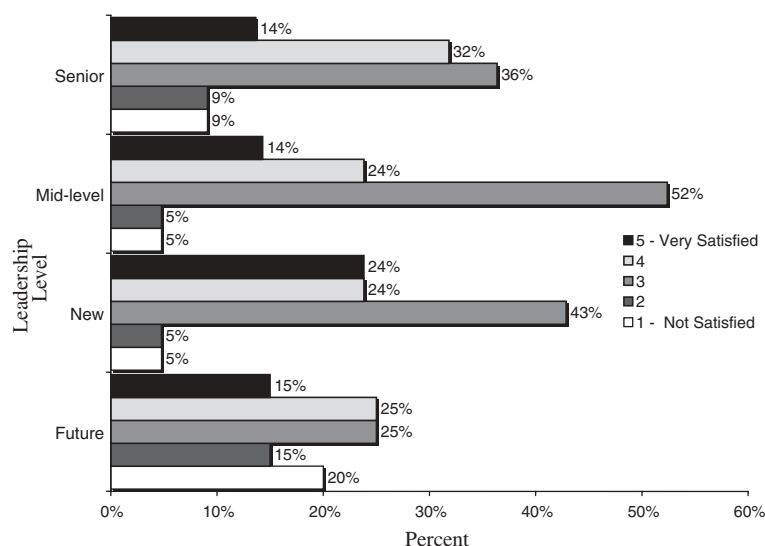


FIGURE 10 Satisfaction ratings of the quality and effectiveness of leadership training by leadership level.

scores. Average should not be acceptable when considering leadership training and development. The challenges facing the state DOTs are too significant to accept mediocre results in this critical area.

Figure 11 summarizes the survey responses with regard to who within the agency is in charge of leadership training programs. This element can play a major role in the content, effectiveness, and other attributes of a state agency’s efforts. Only two states (Michigan and Utah) reported that the CEO was in charge of their programs. In Arkansas, the deputy director is responsible for leadership development and training; therefore, only three states, or fewer than 16%, are directed from the senior leadership position. A good program need not be directed by the senior leader for that leader to have significant influence on the nature of such efforts. However, a lack of senior leadership involvement relegates leadership training to the level of “just another” course offered by the agency’s human resource department or training section. The most common response from the states about who is in charge of its leadership training programs was the Training Director (63%) and Director/Chief of Administration Services (25%). Again, the issue is not so much who is in charge as how much influence the senior leader has in crafting the content of the program. (Note that the percentages total more than 100 because one state selected multiple responses.)

When asked how much support an agency’s top management gives to leadership training, respondents indicated a high level of commitment. Strong support was cited by 63%, whereas another 29% noted moderate support from top management. Only 1 agency (4%) indicated little support and no one say reported an absence of support. Because a total of 92% of respondents reported moderate to strong support for their agency’s leadership program, a positive environment exists for such programs to grow and flourish.

Another question designed to determine the effectiveness of leadership programs asked for a grade on how well states are doing in preparing individuals for future leadership posi-

tions. Fifty-eight percent reported moderately effective efforts in producing future leaders. Only 21% mentioned that development programs were very effective, with 13% graded as not very effective. This lack of an overwhelming endorsement of DOT programs reflects a need to further improve existing efforts because of a looming shortfall.

When asked to clarify what could be done to improve program quality, states were offered seven specific options and could also volunteer additional options, as necessary. Two possible choices received very few responses: “change the instructor” (1) and “provide a training environment with fewer distractions” (2). Given these low scores, there is little reason to believe improvement lies with either option. On the other hand, “increased funding” was the most commonly mentioned impediment to improving the quality of leadership training programs. The “Other” option also ranked high and included the following responses:

- See that leadership development is a high priority activity and establish accountability for making it happen.
- Give priority to participants with a positive attitude for learning and aspirations to higher position.
- Revise the management selection process.
- Provide funding for senior leaders to attend executive development programs.

The areas for improvement that were cited are listed here in descending order of frequency of mention:

- Increased funding, 63%;
- Other, 63%;
- Provide more time for training, 46%;
- Make it more practical/applicable to the real world, 38%;
- Prepare the students better, 33%;
- Change the curriculum, 29%;
- Provide a training environment with fewer distractions, 8%; and
- Change the instructor, 4%.

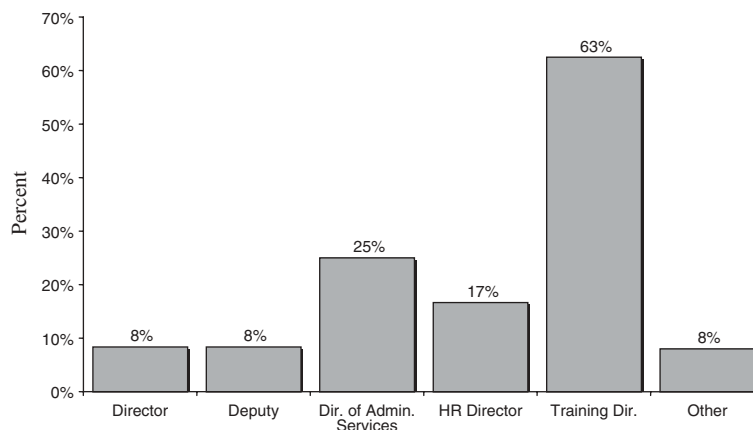


FIGURE 11 Who is in charge of leadership training, by position.

Agencies need more time and more money, both scarce commodities. They appear willing to improve leadership training programs and have a sense or conviction that an investment in this part of their employee’s professional development will pay dividends in the long term.

Figure 12 shows the actual number of employees able to participate in agency leadership training programs and the number who would under ideal conditions. The disparity between the two conditions is striking and worth noting. Where there is already a strong commitment to send employees to training, there is a desire to further increase that number. On the other hand, in agencies where few employees currently attend such programs, there appears to be little interest in improving that situation. This appears to reflect that where there is a strong commitment and appreciation for the value of training there will be a desire to advance those efforts even further.

Figure 13 summarizes the relationship between how much is currently being spent by the state DOTs on leadership training programs and how much they would like to spend. The contrast between the left and right sides of the figure again reflects that agencies with strong commitments to training understand the value this brings to their organization and a desire to further invest in this valuable resource—people.

This synthesis attempted to gain information, including the current status of their training, from states whose programs are in place. However, this is an area that is experiencing many dynamic changes; new and different initiatives are continuously being launched in one state or another. At the time of this synthesis, the Utah DOT was in the process of establishing an aggressive effort designed to cultivate its leadership team by offering a variety of on-the-job situations and position appointments to prepare leaders for future roles. In this agency key middle management employees volunteer to participate in a pool where they transfer laterally into other positions so that they can gain or further refine particular skill

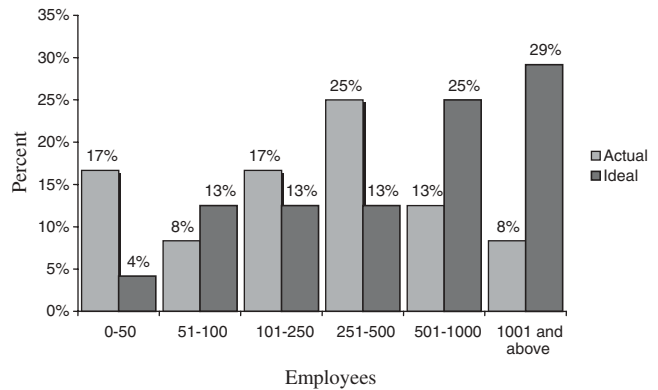


FIGURE 12 Employee participation in training programs, actual and ideal.

sets. It is a deliberate effort to prepare individuals in middle leadership positions for greater opportunities.

In Nebraska, the Department of Roads has launched a new initiative, modeled after some private-sector examples, which it anticipates will significantly improve its leadership development efforts. This program includes a disciplined approach to skill assessment, education, and training as well as mentoring. Both the Utah and Nebraska programs show initial promise and should be watched in the coming years as they mature and results are forthcoming. Key attributes of these programs include strong leadership and commitment from the state CEO and a structured approach that is clearly communicated to all participants.

State DOTs have invested considerable effort in establishing leadership programs. However, more can be done to increase the participant levels and the amount of funding dedicated to these efforts. In some cases, DOTs are in charge of their programs, whereas in others they share that control. Surprisingly few indicated that the CEO is in charge of their efforts, a situation that stands in stark contrast to the private

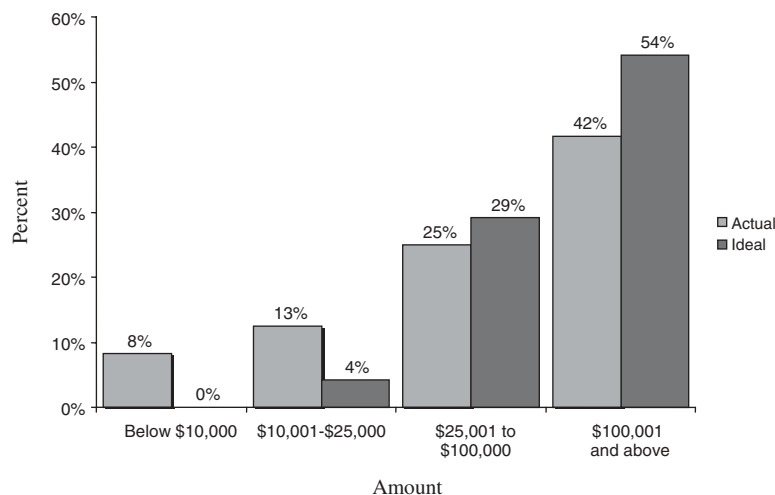


FIGURE 13 Training dollars spent, actual and ideal.

sector discussion in chapter seven. There is a consistency in the delivery methods offered, including presentation and instruction methods. Of note is that the most common rating of satisfaction with existing programs was “average,” indicating that there is considerable room for improvement. The bottom line is that DOTs can and want to do better at the agency level but must invest in the resources to do so.

One situation that emerges is that states may never have either the full control or the resources needed to advance leadership development to their total satisfaction. Funding will likely always be inadequate, personnel rules change

slowly, and other influences may always be present and limiting. Nevertheless, states are moving ahead and are putting forward credible and effective initiatives in leadership development. This being the case, they would do well to advance whatever programs they can within the constraints they are operating under. In reality, much can be done even under the most onerous of bureaucratic circumstances.

In addition to the information gathered during the course of the survey, several examples of programs were found to add value to this discussion of leadership development. Appendix D contains three such examples.

SUCCESSION MANAGEMENT

Succession management has a variety of definitions and is subject to interpretation, just as are many of the other concepts in this study. For the purposes of this report, succession management is defined as a deliberate effort engaged by the organization's leadership to recruit, train, develop, and promote individuals to successively responsible leadership positions to the benefit of the organization. Although other definitions might be offered, this one captures the essence of the purpose of this synthesis.

Succession management applies to all levels of leadership. Failure on the part of leaders to prepare their subordinates for promotional opportunities is unacceptable in today's environment. Succession management may be found in different forms or be more formal depending on the level of the leader involved, but the purpose remains the same: Preparing leaders to assume greater responsibilities within an agency or organization.

A discussion on succession management must first focus on the two types of positions found in a typical state DOT. The first class of employee is the "merit" class, which is defined as a typical civil service role where all personnel rules and protections apply. Personnel rules typically define in great detail what an agency can and cannot do in terms of promotions, training opportunities, and so forth. In some states where unions exist, there can be even more restrictions about what agencies are allowed to do in cases of seniority, longevity, and even testing.

The second class of employee is the "non-merit" class, which includes those not protected fully by personnel rules. These individuals serve at the pleasure of some appointing official, such as the DOT CEO, the governor, or some other official. These positions are filled without regard to the state's personnel rules, allowing the appointing official wide latitude in who is appointed. Correspondingly, individuals can be terminated without cause. A positive aspect of non-merit positions is that a state CEO has the freedom to move these individuals into roles and responsibilities that would not be possible otherwise. For an agency with both types of employees, succession management must be tailored to deal with both.

Succession management describes a variety of programs found in state DOTs and private-sector organizations. They range in nature from informal or loosely organized efforts to highly sophisticated and detailed approaches. Some focus on

key leadership positions, whereas others work on a wider selection of mid- to upper-management roles. Some private-sector companies have extensive procedures in place to facilitate replacing a CEO or other key position should that person be incapacitated, pass away, or unexpectedly leave the company. Other companies and organizations limit the number of board members or senior leaders who can travel together. Still others have formal committees that act immediately to establish new leadership when vacancies occur. All these situations fall under the definition of succession management.

The state DOTs were surveyed to determine the nature of their succession management programs. Of interest were whether or not such programs existed, whether they were formal or informal, and how the programs influence replacement practices. Responses from the states offer important insights into how transportation agencies are approaching this important area of human resource management.

STATE PROGRAM STATUS

The survey queried the states to determine if they had a succession management program in place and, if so, whether it was formal or informal. Although the existence of succession management programs is not unusual in large-size private-sector organizations, there is a striking absence of such programs in public transportation. Of the 25 states responding to the survey, only three (12%), Iowa, Nebraska, and Tennessee, have formal programs. Ten states (40%) indicated that they have informal programs. Tennessee and Nebraska actually have both. In total, 13 states—just more than half—have no succession policy.

A question was asked to ascertain why states do not have a succession management program. Responses varied, but included the following:

- Never had one before
- Personnel rules do not allow it
- Things are working well as they are
- Lack of time and resources—including funding
- Concerns with preselection issues
- Lack of executive endorsement.

Funding can be an issue in any program of this type because legislatures are often reluctant to provide money for

what they see as “soft” programs with little immediate benefit to their constituents. However, states seem to be moving forward, in spite of monetary shortfalls, by crafting career development programs that require little or no funding.

Some general concerns exist about personnel rules. For example, some believe that such a program will result in preselection issues and accusations of favoritism. Nearly all states operate within the bounds of a civil service system and must follow its rules as they plan either a formal or an informal program. It is clear that states with enough interest have found ways to create and maintain programs in spite of personnel rules. The responses to the question of why a program does not exist were not uniform and no clear pattern emerged from them.

EXISTING SUCCESSION MANAGEMENT PROGRAMS

One of the first considerations for implementing a leadership program is determining who will be responsible for it. Although experience shows that it is not essential for the CEO or another senior leader to be responsible for such a program, there is often a connection between stated CEO priorities and how much importance is attached to an initiative. In assessing existing succession programs in surveyed states it was found that such programs are led by one of the following:

- Executive director, secretary, commissioner, 17%.
- Deputy director, assistant secretary, assistant commissioner, 17%.
- Director/chief of administrative services, 13%.
- Human resources director, 21%.
- Training director, 13%.
- Other, 0%.
- No response, 19%.

These results clearly show a high level of interest by top agency leadership in these training programs. Apparently, they are not usually relegated to mid-level managers or other officials who may have little ability to substantially influence programs and outcomes.

The survey itemized seven possible attributes of a succession management program. This was done to identify a base set of characteristics and any possible trends that might serve as a template for a state’s desire to improve or implement its own succession management program. The options are presented here, with frequency of response in descending order:

- Specific actions are taken to address the development requirements for specific individuals, 38%.
- Individuals in the program have had an inventory of their skills and abilities prepared and key areas of further development requirements have been identified, 33%.
- Individual appointments to positions are done with development requirements in mind, 29%.

- Human resources director or someone other than the executive director, commissioner, or secretary is responsible for the program, 21%.
- Individuals are formally identified and know they are in the program, 17%.
- Mentoring relationships are established and active, 17%.
- The executive director, commissioner, or secretary is responsible for the program, 17%.

The three most common attributes of state DOT succession management programs focus on individuals; assessment of skill and training requirements and appointments to positions are done with specific skill development outcomes in mind. Such a focus on individuals with unique needs seems to be a powerful thread among the states as they seek to advance their leadership corps.

Other responses provided to this question further illustrate the attributes of effective programs. For example, in Tennessee, funds are available to assist in implementing its program, while additional personnel manage the effort. Virginia uses a 360-degree developmental tool that focuses on current and desired skill sets, as opposed to the other 360 tools described earlier, which are used for appraisal purposes.

One outcome of this study was that in only 17% of the programs were individuals formally identified and notified of their participation. States might be engaged in formal or informal succession management efforts without the participants actually knowing they are included. This may be a way states are able to have a program that does not conflict with accusations of preselection of candidates for positions. One observation about individuals unaware of their participation is that active knowledge would enhance a person’s contribution and progress in achieving the desired advancement skill sets. Otherwise, potential leaders are moving forward without knowing about management efforts to help and train them.

Each state was asked to assess the effectiveness of its succession management program. The choices ranged from “Excellent” to “Very Poor.” Although definitely subjective, the responses still present a glimpse into how well a program is functioning according to those who work with it. Of the states with a succession management program, only California ranked its program as being “Excellent.” Five states ranked their efforts as “Good”: Iowa, Nebraska, Ohio, Tennessee, and Utah; four ranked their programs as “Fair”; and one state rated its program as “Poor.”

A review of each state’s assessments, along with the attributes previously reported, offer interesting insight into state efforts. For example, almost all the states that rated their program as being either “Excellent” or “Good” had at least two of the three attributes cited here:

- Specific actions are taken to address development requirements for specific individuals.

- Individuals in the program have prepared an inventory of their skills and abilities, with key areas of further development requirements identified.
- Individual appointments to positions are done with development requirements in mind.

However, those with only “Fair” ratings also reported having at least two of these same attributes. Thus, the success or effectiveness of the state DOT succession management programs cannot be predicted based on the use of specific attributes or on the strategies rated earlier.

As part of the survey, the states were asked to identify what they would change about their programs if given the opportunity to do so. The responses varied, but also showed a common desire to formalize and expand the programs. Responses, without state identification, are as follows:

- We must formalize our program and provide training to all levels.
- Formalize the system to a greater extent, using trait-based and competency-based assessments. Structure mentoring relationships and/or formalized job rotation to give participant more experience in key areas important for our leadership.
- We are developing a pilot for a formalized executive workforce development process that will directly affect succession planning.
- Overhaul the entire program.
- Expand the program.
- Plans are underway to formalize into a structured program.
- Develop a more formalized program that incorporates the tracking of training and build in a mentoring program leading to advancement of leadership capabilities and potential consideration of future senior-level positions.
- Formalizing the program would be a good first step.

Sometimes a state turns to the private sector for successful program models to follow. These private-sector firms can be either within the transportation industry or from totally different fields. Five of the 18 states responding to this question indicated that they had gone to the private sector to find best practices or models to follow. Organizations mentioned

included Intel, Delta Airlines, BellSouth University, Virginia Commonwealth University, and Management Development, Inc. This represents a cross section of private- and public-sector firms with different business activities and interests. Leadership development and succession management activities cross industry boundaries and cultures without regard for type of business or product, so consideration of this resource is certainly valid.

The states offered many other insights into current programs and what they would do in the future to become more effective in advancing future leaders. A full set of their responses is found in Appendix C, with a summary provided here. Arizona offers a significant vote of confidence in the potential of individuals to step up and assume leadership positions, even to those who have less experience than their predecessors had when they were appointed. Missouri’s responses suggest that long-time requirements for professional certification in certain positions sometimes prevent the appointment of an individual even though the particular job does not require the performance of the technical functions related to that specific certification. Suggestions were made for more formal mentoring or “shadow” programs that allow mid-level leaders to learn first hand from senior leaders.

Succession management is not a simple process; it requires discipline and tenacity, along with leadership and commitment. Different succession management programs have the common component of focusing on individuals and their specific needs, but this does not seem to be a discriminator for effectiveness. No clear trend emerges that makes one program superior to another based on the presence of certain practices. Perhaps the most telling point of this chapter is that these programs need to be led at a high level and focus on individuals and their needs. Effectiveness is not affected by formality or informality, as the six states with “Excellent” or “Good” evaluations included three from each category. However, although all the states with formal programs had “Excellent” or “Good” ratings, not all of the informal programs were rated as highly. Therefore, the existence of a formal program is probably one of the best ways for an agency to be effective in this area. However, even informal programs can provide value, and states with informal programs did not indicate that they would like to change them.

PRIVATE-SECTOR LEADERSHIP DEVELOPMENT

The challenges facing state DOTs in the 21st century are not unique to the public sector. Issues previously mentioned—including leadership development, customer expectations, workforce aging, recruiting, retention, and others—are also part of the environment facing private-sector companies in this first decade of the new century and its economic challenges. In addition, both domestic and foreign market forces are making profitability ever more difficult. Leadership dynamics became even more complicated as our nation experienced the market uncertainties in recent years, slower than expected job growth, and worries about national and world security. If there was ever a time for strong leadership in the private sector, it is now.

One objective of this synthesis is to present an overview of leadership development and succession management programs in the private sector. The motive behind this investigation was to determine if any of the approaches, programs, or activities in the private sector might also be useful in state DOTs. Various means were used to investigate these private-sector programs, including literature reviews, journal profiles of companies, and personal interviews with involved individuals. The review determined that many successful programs are being used by private-sector companies; a few will be highlighted in this chapter. The observations offered at the end of the chapter will, hopefully, be of value to STAs.

Initially, this synthesis was to focus only on transportation-related firms or others whose business activities are similar to state DOTs. Subsequently, several others were also analyzed whose business practices are not similar to transportation agencies but whose programs have attributes worth emulating. Leadership training is an area of organizational development and management where methods of application transcend traditional boundaries.

One private-sector firm with an excellent program is General Electric (GE). GE has made a significant commitment to leadership development and training. Its efforts begin with newly hired individuals and proceeds through to the senior management corps. At each level, an individual is groomed and prepared to receive the skills and training needed to fill successively higher positions in the organization. It is a deliberate and expansive effort with strong management support. According to the literature available, GE reports an investment of approximately \$1 billion per year in this endeavor. The entry-level program is aimed at recent graduates who focus on five areas, three of which are engineering, opera-

tions, and finance. The objective of this future leader program is to ensure that these individuals gain a broad perspective on the company and do not focus solely on the engineering, although there is still a significant emphasis on technical skill sets, including systems, analysis, design, quality, reliability, integration, and testing. Those who participate in this program are ultimately assigned to one of GE's priority areas, where they can immediately apply what they have learned in their first developmental training program. GE recognizes that leaders need to be well rounded and offers a variety of instructional opportunities in other business fields, including presentation skills and risk management. Some of the training counts toward a master's degree. In addition to its new recruit programs, GE also has an extensive leadership development initiative that extends the emphasis on broad skill development to the highest levels in the organization.

In a review of GE's leadership program, the analysis must go beyond the formal side of the organization's efforts and consider the informal element. This informal development initiative is perhaps the most legendary famous portion of its program and has received substantial comment. In the 1980s and 1990s, GE's CEO, Jack Welch established a leadership style and approach that has been much analyzed. Although a complete review of the man and his particular approach to leadership is not possible here, a few observations may be made. His leadership culture had some unique attributes: Leaders were hand selected as trusted and loyal members of the team. They exhibited leadership traits, style, and mannerisms similar to those of the CEO. Those who did not fit the desired mold were passed over and others appointed in their stead. This approach has become well known in the business world. At one point, this model elevated GE to the position as the world's most valuable company. So successful was this model that many of Jack Welch's trusted lieutenants became captains of industry in their own right.

Another private-sector company with focused leadership development elements is Home Depot. In their book, *Built from Scratch* (Marcus et al. 1999), Bernie Marcus and Arthur Blank, cofounders of this home improvement giant, articulate their culture and leadership style; it includes many valuable lessons. At Home Depot, leaders are cultivated with care and generally come from within the ranks of the organization. This policy of promoting from within allows Home Depot's management team to create a leadership mindset that is focused on meeting customer needs and on the company's

specific business approach. Outside hires in key positions at Home Depot are required to work for at least 2 months “on the floor,” to ensure that they are fully aware of the basics of what makes the company work. Even the corporate attorney, hired to deal with complex legal initiatives and elements, filled this requirement before beginning legal duties.

Home Depot offers a 2-year leadership program that focuses on store operations, business activities, and merchandising. Additionally, promising individuals go through its Future Leadership Program, which includes rotations into many roles in the organization. This program provides for about 250 h of classroom training and uses an assigned mentor program.

Another element of Home Depot’s quest for strong leadership teams is an internship program that focuses on college seniors and graduate students. This program lasts from 10 to 12 weeks and provides students with the opportunity to learn all aspects of the company. Many, following graduation and at least a beginning organizational knowledge, return and rise to become effective leaders at Home Depot. It is a highly successful program by which Home Depot and these rising leaders have both benefited.

Lockheed Martin Corporation, a major national defense contractor, has a leadership training program for its new employees called the Leadership Development Program. This program focuses on individuals who will obtain a graduate degree and involves 3 years of intense leadership experience for all participants. During this period individuals are regularly brought together in person or by means of teleconferencing for specific leadership and management training in a group setting. Additionally, each participant has a specific plan for working in a variety of operating units to ensure that their experiences have the depth and breadth needed for future leaders. Although many other elements of their leadership development initiative exist, the Leadership Development Program is an important part of Lockheed Martin’s overall effort to ensure global leadership and profitability.

Another private-sector firm worthy of note is Johnson & Johnson. This company, which has 112,000 employees worldwide, averages 10% growth each year and had about \$40 billion in sales in 2003. It espouses the philosophy offered by Peter Drucker, who stated that “Leadership must and can be learned.” Driven by this conviction, Johnson & Johnson focuses its leadership program on assisting bright and promising leaders by giving them the skills they will need to lead their company in the future.

The Chairman and CEO of Johnson & Johnson offered this statement about leadership, which provides insight into the passion it has toward developing individuals for promotional opportunities:

Johnson & Johnson is well positioned in the global health care industry, and our organization is primed for future growth. Our Credo firmly establishes our values, and our Standards of Leadership set the behavior, character, and commitment we expect from those who will lead us to greater achievement.

The Credo Values include the following:

- Organizational and people development,
- Customer and marketplace focus,
- Innovation,
- Collaboration, and
- Complexity and change.

In attempting to instill these values, it has tailored a program that has significantly contributed to its overall business success in challenging economic times. The program includes informal mentoring, hiring approximately 80% of its positions from within, developing breadth of experience in its leadership team, attracting and retaining individuals with high values (e.g., integrity and work ethic), and specialized “Action Learning” opportunities, during which individuals work on specific projects in close collaboration with senior Johnson & Johnson leaders. In addition, it has a disciplined succession management program that surveys the likelihood of future vacancies occurring and takes deliberate action to prepare individuals for those positions.

Contractors make up a large segment of the state DOT world, with many daily interactions between the agency and the contractors. When discussing leadership programs several contractors stand out. Peter Kiewit and Sons, Granite Construction, and Granite Rock all focus extensive resources on leadership training and development.

Granite Construction Company, Inc., headquartered in Watsonville, California, is ranked by *Engineering News Record* as one of the largest transportation contractors in the country. Although they have millions of dollars in capital assets, including large amounts of heavy equipment, it knows its greatest asset is the people who have made Granite successful. Some years ago it launched a program called Employee Development Initiative, which focuses on advancing the leadership skills of its field supervisors, office managers, and other leaders. The Employee Development Initiative program is led by a group of Employee Development Leaders from each branch of the company, including the Heavy Construction Division Regions. Project managers, engineers, estimators, and field supervisors take 2-year sabbaticals from operational or day-to-day activities to build their leadership and organizational skills. They are given opportunities to apply these newfound skills on specific projects throughout the organization. The key themes for these groups include sharing knowledge and connecting people to learning opportunities so that Granite remains their employer of choice.

On the engineering side, many good examples exist of firms that invest heavily in the leadership development and succession management activities associated with their businesses. HDR has a well-developed initiative that includes mentoring, formal skill assessments, and development plans for participants. Training includes classroom instruction and work assignments geared toward cultivating future leaders in their organization. The program includes both rigor and discipline in its implementation.

HNTB, another national engineering firm providing a wide variety of services to the transportation industry, also has an aggressive program. Recently impressed by the presence and leadership exhibited by young military leaders associated with the war in the Middle East, senior leaders at HNTB have deliberately crafted its program after the military's model. The initiative included hiring former military leaders to duplicate the training and skill development activities that have resulted in many fine young men and women leading their units through challenging circumstances. HNTB's program includes training by key members of the senior leadership team as well as specific assignments geared toward developing important skills in their future leaders. The HNTB effort (as well as the HDR program) is supervised by the CEO, whose involvement explains the high profile their program enjoys in the organization.

In reviewing the issues surrounding leadership development and succession management in private organizations a number of key issues emerge. The first is the profitability issue: companies are usually either publicly owned and traded or are privately held by employees of the organization through a direct shareholder program or an Employee Stock Option Program. Ultimately, whether the company is publicly or privately owned, shareholders focus on company profitability and are motivated to endorse efforts that will positively affect the balance sheet. Many private firms have clearly determined that profitability is directly affected by both their leadership and the effectiveness of their efforts to develop future leaders.

A second area that should be mentioned is slightly different, but related. Senior leaders in a private company likely hold substantial shares of stock and have a significant portion of their retirement tied up in the value of that stock. Depending on company policies, these individuals will either sell their stock on retirement and accept a note for their repayment or continue to hold onto the majority of their stock and sell it at a specific rate over their retirement years. In either case, they have a vested interest in the value of the stock and in the continued viability of their company. Thus, private-sector leaders seem particularly focused on the future leaders of their companies and in ensuring that the succession

management program allows the finest individuals to rise to the top and ensure the financial viability of their future retirement. It is an important motivation found in the private sector that is missing from public-sector programs.

Leadership training and succession management in the private sector is taken very seriously owing to its value to the company and, therefore, the shareholders. Although only a few firms have been highlighted in this report, some key attributes emerged, which seem to be common among all of the programs reviewed and deserve mention in summarizing this discussion:

- Leadership is values based.
- Leadership is fundamental to future company profitability.
- Leadership programs are either led or strongly influenced by the chairman, president, CEO, or some combination of the three.
- Private companies do not differentiate leadership development from succession management—they advance together.
- Private companies have programs that develop leaders with a wide variety of skills, including those for which they have received no formal education (e.g., engineers working in finance, marketing, or research).
- Leadership development programs within private companies are structured, have definite objectives, involve specific activities, and almost always include skill assessments and development plans.
- Private companies use a variety of classroom and on-the-job training opportunities to develop the desired skills in future leaders.
- Private companies start early in developing leaders.
- Private companies believe that the first step in developing future leaders and having an effective succession management plan is to hire the right people in the first place.
- Most companies promote the majority of leaders from within.
- Leaders are hand-selected based on their ability to be successful in achieving the operating and profit objectives of the company. Longevity is not an issue—performance is what counts.

Leadership development in the private sector is an important subject. Private-sector leaders see their programs as an investment and not as an expense. They take their initiatives seriously and, in many cases, are personally involved in leading the programs and even providing actual training. The public sector would benefit from emulating private-sector counterparts when it comes to developing future leaders for their organizations.

CONCLUSIONS

Leadership is clearly a major issue facing state departments of transportation (DOTs) in the 21st century. However, it is not unique to state DOTs, for many other public entities face the same issue. Other challenges facing the public sector have never been more intense or difficult: funding shortfalls, workforce limitations, baby boomers approaching retirement in large numbers, higher than ever customer expectations, and system needs that far outstrip revenues. Collectively, these factors weigh heavily on transportation agencies and their leadership teams. State agencies need highly qualified and capable leaders now and in the future.

This study reveals two aspects of state DOT demographics that will converge in the coming years. First is the pending retirement of a high percentage of seasoned employees, including those holding key leadership positions. Second is that many agencies have a younger workforce rising through the leadership ranks that will result in filling critical leadership positions with individuals who have less experience than their predecessors.

Many states recognize how important recruiting the right individuals is to the strength of their future leadership cadre. Their selection processes reflect the seriousness with which they take this task. Once employed, however, there is always the chance that promising leaders will leave the state DOT; attrition seems inevitable. Competition with the private sector and its usually higher salaries present difficulties for public agencies in their efforts to retain key individuals. On the other hand, states often offer superior benefits, including health, dental, vacation, and retirement programs that are strong enticements for state leaders to continue public service.

Interest is high at the state DOTs in establishing leadership development and training programs in their organizations. Several trends are noteworthy, including that they desire to add funding and more students to their programs, that curriculum and program content are rarely dictated solely by the DOT, that less than 20% of the programs are led by the state CEO, and that only one state, California, rated its program as excellent. There is great opportunity for improvement in these leadership development programs.

Succession management programs in state DOTs is an area that could use more emphasis in nearly every agency surveyed. The value a good program brings to strengthening the leadership team over time is indisputable. However, some agencies have struggled to establish either a formal or informal program. There are many difficulties with establishing a program

in a public entity like a state DOT, not the least of which is that the appointment of CEOs and other key leaders is often a political decision. Personnel rules and other constraints make advancing an effective leadership development program challenging at best. Nevertheless, there are several examples of states that have transcended these challenges and put excellent programs in place. Doing nothing is not an option.

Private-sector leadership development and succession management programs are excellent and offer state DOTs an effective model. These programs are driven by the cost imperative evident in all private-sector companies, with the understanding that an effective leadership program is not a cash drain on the balance sheet but rather an investment in future company profitability. Private programs are generally led at the CEO level, are more defined and rigorous than their public-sector counterparts, and emphasize more diverse areas of business.

The attributes of these private-sector programs create a valid model for state DOTs to follow. If a state DOT were to establish a leadership development program that was CEO led, included both succession management and leadership training elements, developed a wide variety of technical and nontechnical skills in its participants, started early in an individual's career and was otherwise deliberate in its implementation, then that DOT would be well on its way to having an effective initiative. These are among the attributes that have proven effective for the private sector and will be the keys to the success of state DOTs as they endeavor to enhance their leadership development efforts.

This study was, by design, focused specifically on state transportation departments. Nevertheless, the concepts presented, the results, and the conclusions drawn are directly applicable to transit agencies as well as other public organizations at all levels of government. Leadership development and succession management are issues for public-sector leaders from the smallest municipal agency to the largest state organization.

Leadership development and succession management will be critical to the future effectiveness of state DOTs in delivering services to their customers. The state programs surveyed in this project reflect some advances in establishing effective leadership initiatives. However, state DOTs would benefit from using methods similar to those of their private-sector counterparts as they seek to further improve their own programs, and ultimately, the caliber of their leadership corps.

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APPENDIX A

Survey Questionnaire

Part I—Demographics

To correlate data about your agency with that of other agencies certain demographic information must be gathered.

1. Total number of employees in this agency:
 - Less than 1,000
 - 1,001–2,000
 - 2,001–5,000
 - 5,001–10,000
 - 10,000 and above

2. Activities/divisions within this agency (check all that apply):
 - Highways
 - Motor vehicle
 - Aeronautics
 - Planning
 - Administration
 - Engineering
 - Rail
 - Bus
 - Ports
 - Other (specify) _____
 - Other (specify) _____

3. In the past two years, has your agency's staffing level
 - increased
 - decreased
 - stayed the same

4. In the next two years, do you expect your agency's staffing level to
 - increase
 - decrease
 - stay the same

5. Which of the following are considered senior management in your agency? (Check all that apply.)
 - Executive Director, Secretary, or Commissioner
 - Deputy Director, Deputy Secretary, or Deputy Commissioner
 - Division Manager/Director
 - Section Manager/Director
 - Group Manager/Director
 - District/Regional Engineer/Director
 - Other _____

6. Please rank the following positions by seniority starting with the highest to the lowest and record the approximate number of employees in each level of position.

Rank	Employees
<input type="checkbox"/> Executive Director, Secretary, or Commissioner	_____
<input type="checkbox"/> Deputy Director, Deputy Secretary, or Deputy Commissioner	_____
<input type="checkbox"/> Division Manager/Director	_____
<input type="checkbox"/> Section Manager/Director	_____
<input type="checkbox"/> Group Manager/Director	_____
<input type="checkbox"/> District/Regional Engineer/Director	_____
<input type="checkbox"/> Other (Title) _____	_____

7. What is the average age of your agency's workforce?

- Less than 30
- 31-35
- 35-40
- 41-45
- 45-50
- 51-55
- 55-60
- 61 and above

8. What percent of your senior management in each of these positions is currently eligible to retire?

	Currently Eligible	Less than 3 years	3-5 years	6-10 years
Executive Director, Secretary, or Commissioner				
Deputy Director, Deputy Secretary, or Deputy Commissioner				
Division Manager/Director				
Section Manager/Director				
Group Manager/Director				
District/Regional Engineer/Director				
Other				

9. Are there any external factors existing today or which may exist in the near future that would influence your senior managers to retire sooner than later?

- Lack of pay raises for state employees
- Early retirement incentives
- Health conditions
- Competition from the private sector
- Other (please specify) _____
- Other (please specify) _____

10. Is your agency doing anything specific to increase the likelihood that your senior management personnel will continue to be employed by the state?

- Monetary incentives
- Training
- Possibility for increased retirement payments
- Flexible work schedules
- Other incentives (please specify) _____
- Other incentives (please specify) _____

11. Is there anything else about the demographics of your agency that would be of interest to this study or of value to share with other state DOTs? Please specify.

Part II—Recruitment and Retention of Leaders

1. Does your agency have a recruitment and retention plan?

Yes
 No

2. Do you recruit new hires with the understanding that they could eventually become leaders and managers in your agency?

Yes
 No

3. Does your agency seek “Strategic Thinkers” when recruiting leaders?

Yes
 No

4. What specific actions does your agency take to ensure that it hires future leaders?

Look at past leadership related activities
 Administer tests or other instruments that would indicate leadership potential
 Consider references provided by applicants
 Conduct multiple interviews with each candidate
 Use specific questions in interviews that would reflect an applicant’s leadership potential
 Contact current supervisor
 Other _____
 Other _____
 Other _____

5. What core competencies are important for leaders in your organization?

6. What are some of the problems with retaining potential leaders who might fill senior leadership/management positions some day? (Please rank, with 1 as the most significant problem.)

Competition with the private sector
 Pay and benefits
 They do not want to deal with administration/bureaucracy
 They do not want to leave the technical areas of the agency
 Lack of funding for projects
 Perceived favoritism or other problems with promotions
 Lack of training
 They do not want to deal with internal politics
 They do not want to deal with external politics
 Lack of challenging work
 Other (please specify) _____
 Other (please specify) _____

7. What more could your agency do to increase the likelihood that capable individuals are prepared and retained to fill important leadership/management positions in the future?

8. Is there anything specific that your agency is doing to prepare women to be appointed to leadership/management positions in your agency? Please specify.

9. Is there anything that your agency is doing to prepare minorities to be appointed to leadership/management positions in your agency? Please specify.

10. Is there anything else about the recruitment and retention of future leaders in your agency that would be of interest to this study, and that would put the information you provide in this survey into context and assist the authors in their analysis of your information? Please specify.

Part III—Leadership Training

1. Is specific training available for your managers/leaders that would assist them in obtaining or developing leadership skills?

Yes
 No (If No, skip to Part IV)

2. Who provides this training? (Check all that apply.)

The state DOT
 Another state agency
 A private-sector trainer under contract to the state DOT
 A private-sector trainer under contract to another state agency
 Other (please specify) _____

3. At what level is leadership training available to the employees in your agency? (Check all that apply.)

Future leaders/supervisors/managers
 New leaders/supervisors/managers
 Mid-level leaders/managers
 Senior leaders/managers
 Others (please specify) _____

4. How many levels of approval are required to obtain leadership training? (Check all that apply.)

Immediate supervisor
 Second level supervisor
 Selection/recommendation panel
 HR Director
 Senior management
 Other (please specify) _____

5. Who determines the course content for the leadership training that is available to your employees?
- The state DOT
- Another state agency
- The state DOT and another state agency
- Other (please specify) _____
- Do not know
6. What types of leadership training are offered? (Check all that apply.)
- Courses
- Mentoring programs
- Web-based training
- Rotational assignments
- Partnering with other organizations/companies
- Self-study programs
- Other (please specify) _____
7. How satisfied is your agency with the quality and effectiveness of the leadership training that is available to employees at the following levels? (Scale of 1–5, with 1 being not satisfied, 5 being very satisfied).
- Future leaders/supervisors/managers
- New leaders/supervisors/managers
- Mid-level leaders/managers
- Senior leaders/managers
- Others (please specify) _____
8. Who is in charge of the leadership training function within your agency?
- Executive Director, Secretary, Commissioner
- Deputy Director, Assistant Secretary, Assistant Commissioner
- Director/Chief of Administrative Services
- HR Director
- Training Director
- Other (please specify) _____
- Other (please specify) _____
9. What level of support does your agency top management give to leadership development?
- Strong support
- Moderate support
- Little support
- No support
10. Our agency's leadership development program is:
- Very effective at producing the future leaders our agency needs
- Somewhat effective at producing the future leaders our agency needs
- Not very effective at producing the future leaders our agency needs
- Needs to be overhauled.
11. What could be done to improve the quality of the leadership training that your employees receive in your agency? (Check all that apply.)
- Change the curriculum
- Change the instructor
- Prepare the students better
- Provide more time for training
- Provide a training environment with fewer distractions
- Make it more practical/applicable to the real world
- Increased funding
- Other (please specify) _____
- Other (please specify) _____

12. How many individuals are able to attend your leadership training each year?
- 0–50
- 51–100
- 101–250
- 251–500
- 501–1,000
- 1,000 and above
13. Under ideal conditions (no budget constraints, timing issues, etc.) how many individuals would you put through your leadership training courses each year?
- 0–50
- 51–100
- 101–250
- 251–500
- 501–1,000
- 1,000 and above
14. Approximately how much does your agency spend on courses specific to leadership training (excluding employee salaries and benefits)?
- Below \$10,000
- \$10,001–\$25,000
- \$25,001–\$100,000
- \$100,001 and above
15. Under ideal conditions how much would your agency like to spend on leadership training (excluding employee salaries and benefits)?
- Below \$10,000
- \$10,001–\$25,000
- \$25,001–\$100,000
- \$100,001 and above
16. Is there anything else about your agency's leadership training program that would be of interest to this study or which would be valuable to share with other state DOTs?
- _____
- _____
- _____
- _____

Part IV—Succession Management

1. Does your agency have a formal Succession Management program?
- Yes
- No
2. Does your agency have an informal Succession Management program?
- Yes
- No
3. If an informal or formal program does not exist, what is preventing your agency from having a Succession Management program?
- Not applicable (skip to question 10)
- Never had one before
- Personnel rules
- We do not seem to need one
- Things are working well as they are
- Other (please specify) _____

4. If you have a Succession Management program, who is responsible for its implementation?

- Executive Director, Secretary, Commissioner
- Deputy Director, Assistant Secretary, Assistant Commissioner
- Director/Chief of Administrative Services
- HR Director
- Training Director
- Other (please specify) _____

5. Please indicate the attributes of your Succession Management program. (Check all that apply.)

- Individuals are formally identified and know they are in the program
- Mentoring relationships are established and active
- The HR Director or someone other than the Executive Director, Commissioner, or Secretary is responsible for the program
- The Executive Director, Commissioner, or Secretary is responsible for the program
- Individuals in the program have had an inventory of their skill and abilities prepared and key areas of further development requirements are identified
- Specific actions are taken to address the development requirements for specific individuals
- Individual appointments to positions are done with the development requirements in mind
- Other (please specify) _____
- Other (please specify) _____

6. How well is your Succession Management program working?

- Excellent
- Good
- Fair
- Poor
- Very poor

7. What would you change about your Succession Management Program?

8. Have you used any private-sector firms as models in developing your leadership training or succession management programs?

Yes (please specify which company or companies and provide contact information if possible)

No

9. Is there anything else about your agency's Succession Management program that would be of interest in this study and to other state DOTs?

10. What could be done to improve the preparation of your employees for higher positions in management in your agency?

11. Does your agency do anything else not previously mentioned in this questionnaire that would be of interest for the synthesis on developing leaders in state DOTs?

APPENDIX B

States Returning Questionnaires

Alaska
Arkansas
Arizona
California
Florida
Georgia
Hawaii
Idaho
Illinois
Iowa
Kansas
Kentucky
Louisiana

Maryland
Minnesota
Missouri
Nebraska
New Hampshire
Ohio
Oklahoma
Oregon
South Carolina
Tennessee
Utah
Virginia

APPENDIX C

Narrative Responses

Demographics—Part I, Question 11 Other Demographic Info

Florida

Motor Carrier Compliance Office (MCCO)—Protect Florida’s transportation infrastructure from accelerated damage caused by oversize and overweight vehicles. Ensure public safety by protecting lives and property through a program of enforcing both state and federal laws, including both traffic and criminal laws in which the MCCO has jurisdiction.

State Materials Laboratory—Develop and implement a state-wide sampling and testing (acceptance) program and certify compliance of completed projects. Provide Districts with information and support services to implement construction and maintenance operations. Assist Districts in solving materials-related problems during construction. Provide technical laboratory and field-testing support. Perform in-house research and assist in the technical management and assignment of outside research to find better ways of using existing materials. Investigate the potential of new materials or processes for usage in highway construction

Hawaii

Location: We are an island state with limited human and fiscal resources. Critical shortage of available, qualified professionals; i.e., engineers, surveyors, and technicians. There are ongoing efforts to tap into the Highway Special Fund for nontransit uses and to abolish established positions.

Michigan

Question 8: Data are only available for the entire DOT. Of Michigan DOT’s employees, 12% have more than 25 years of service and therefore are eligible for retirement.

Missouri

Missouri state agencies’ workforce has been affected by the “80 and out” rule; where, if the combination of an employee’s age and years of service equal 80, the employee is eligible to retire with full benefits.

New Hampshire

Average length of service for employees is 13 years.

Tennessee

922, total leadership development candidates
742, male white—80%
90, female white—10%
65, male Asian/African American/other—7%
25, female Asian/African American/other—3%

Utah

Our organization experienced several retirements from the ranks of senior leaders 3–5 years ago. We now, generally, have senior leaders who are mid-career with 10–15 years until their retirement.

Recruitment—Part II, Question 5

What core competencies are important for leaders in your organization?

Alaska

Analytical thinkers, visionary planners, registered professionals, leadership.

Arizona

We have a leadership matrix with competencies at each level.

Arkansas

Ability to make a decision, works well with others, diplomatic.

California

Change leadership; strategic thinking, communication, team building, and motivation; self-awareness; and personal growth.

Florida

Florida DOT senior leaders identified five (5) core competencies executives and managers must possess to lead today’s FDOT.

1. Leading People
 - Teambuilding, cultural awareness, integrity, honesty, conflict skills.
2. Leading Change
 - Ability to communicate a vision and energize the organization to action to reach it.
 - Recognizes and understands internal and external forces impacting the organization.
 - Ability to influence others to embrace change.
3. Communications and Building Coalitions
 - Interpersonal skills, oral communication, written communication, negotiating, influencing, partnering.
4. Business Judgment
 - Selecting the right people for the right job.
 - Managing the budget.
 - Prudent risk taking.
 - Well-trained workforce.
5. Results Driven
 - Timely decisions, but well-informed.
 - Accountability and empowerment.
 - Structuring and organizing work to meet valid customer requirements.

Georgia

Problem solving, respects dignity of others, collaborative and team player, organizational commitment, decisiveness.

Hawaii

Highway Program Administration—state and federal-aid programs; personnel management; public policy administration; fiscal management; public relations/public speaking; media relations; networking with business, political, and bureaucratic stakeholders; organizational development and the management of change; understanding the functions within the highway project system delivery continuum—systems planning, long- and short-range planning, fiscal management, right-of-way, design, construction, maintenance, operations, etc.

Idaho

Strategic thinking, visioning, partnering, leadership.

Iowa

Administration and management, conflict resolution, creativity and innovation, decision making, external awareness, financial management, human resources management, negotiation skills, integrity and honesty, interpersonal skills, leadership, planning and evaluating, strategic thinking, written and oral communications skills.

Kansas

Under development.

Kentucky

People skills, decision making, organizational skills, time management, speaking public, writing, math/technical, and strategic thinking.

Louisiana

Good people skills, inter-functional, knowledge/cooperation, change management, ethical behavior, planning, problem solving, communication/listening, innovativeness, future-oriented, influence, team building.

Maryland

Strategic focus: change management, technology management and application, vision. Business focus: budgeting, business knowledge, creativity and innovation, quality centered, planning and executing, problem solving and decision making. Workforce focus: coaching, commitment to workforce diversity, human resource management, team leadership. Interpersonal focus: conflict resolution and negotiation, interpersonal skills, influencing, oral communication, writing. Personal focus: action orientation, flexibility, results focus, role modeling, time management, self-development.

Michigan

Building trust, communications, developing a successful team, facilitating change, leading through vision and values.

Missouri

Communication—listening, speaking, writing, delivering presentations; Interpersonal skills—managing conflict, exhibiting empathy, negotiating, networking and organizational awareness; Self-management—working with integrity, managing emotions, adapting to change, managing time; Leadership—influencing, coaching, developing, delegating, building teamwork, motivating, championing change, encouraging creative solutions; Managing for results—managing projects, applied performance management, developing business plan, managing finances, managing policy compliance, using process improvement tools.

Nebraska

(A) Leading people, (B) leading change, (C) business acumen/results driven, (D) building coalitions/communications, and (E) strategic thinking.

New Hampshire

Communication skills, performance measure assessment, coordination, strategic thinking.

Ohio

Core competencies of importance for leaders in our organization include: decision makers; risk takers; people skills; communications, written/oral/presentation; fiscal capacities; business management; info technical abilities skilled in technical areas relative to position; well-informed, accountable.

Oklahoma

Technical expertise, political acumen, communication, problem solving, and human resource management.

Oregon

Leadership abilities vs. management, leadership in charge of management, performance measurement, strategic thinking/planning/futuristic planning, visionary skills, ability to obtain buy-in/cooperation, negotiation, partnering/relationship building skills, public speaking, politically savvy.

South Carolina

Organizational change and development: leading and managing change, strategic planning, visioning, and budgeting and resource balancing; managing and sharing knowledge; communication skills; human resources management: mentoring and coaching, team building, leveraging diversity, motivating, recognizing, and rewarding; problem solving and decision making: thinking.

Tennessee

Leadership, communication, organizational effectiveness, people management, operational management, strategic thinking, and change management.

Utah

Leadership skills, administrative skills, interpersonal skills, communication skills, thinking ability, self-management, tech-

nical knowledge, ability to motivate others, ability to address the concerns of citizens.

Virginia

- a. Knowledge (bodies of information).
- b. Skills, abilities (capacities to perform).
- c. Personal characteristics.
- d. Person-based factors that distinguish superior performance from average performance.

Specific competencies include:

1. Dealing with ambiguity
2. Timely decision making
3. Decision quality
4. Delegation
5. Ethics and values
6. Integrity and trust
7. Interpersonal savvy
8. Perspective
9. Priority setting
10. Drive for results
11. Strategic agility
12. Managing vision and purpose
13. Highway transportation operations
14. Engineering principles and practices
15. Project management
16. Planning and execution.

Recruitment—Part II, Question 7

What more could your agency do to increase the likelihood that capable individuals are prepared and retained to fill important leadership/management positions in the future?

Alaska

Provide cross training and mentoring opportunities; also opportunities to act in leadership roles.

Arizona

Pay for performance (statutory limitations).

Arkansas

More leadership/management training.

California

Rotational assignments; training and development assignments; special assignments/projects; executive, leadership, management, and supervisory training.

Florida

Secure funding and then take advantage of some of the executive development programs offered, such as the Kennedy School of Business and others.

Georgia

Systematic succession planning.

Hawaii

Improve pay, encourage mentor/protégé links for succession planning, modernize the basic organizational structure to include manageable spans of control (I now have 16 direct reports, 12 of which are senior managers). Provide more opportunities for leadership/management training, including hands-on opportunities to implement basic and advanced principles.

Idaho

Introduce a formal succession planning and leadership training program with thoughtful attention to department values and leadership characteristics, which are more comprehensive than the informal ones currently in place.

Kansas

Initiate a succession planning program.

Kentucky

Mandatory leadership training for merit and non-merit managers. Increase the mentoring program to extend beyond the advanced leadership academy. Formal assessment for potential leaders.

Louisiana

Institute a formal mentoring program.

Maryland

Maryland State Highway Administration could improve on its ability to change pay scales and offer salaries closer to the median salary of transportation professional.

Michigan

Michigan DOT is part of a pilot program within the state of Michigan to close the gap between values that are important and the evidence of those values in our behaviors. In the pilot, MDOT leadership team will participate in a 360-degree leadership profile. The plan is to have all managers and supervisor participate as subjects, thus, giving line staff the opportunity to participate as direct reports.

Missouri

Reinitiate an aggressive succession-planning model that focuses on leadership traits and competencies with continued development of executive coaching and skills training.

Nebraska

Continue to develop and advance/expand the leadership development program to make it better. Provide additional opportunities for employees to grow.

New Hampshire

Establish a professional development program focused on organizational management/leadership.

Ohio

Implement targeted training and mentoring. Regarding retention, Ohio DOT took steps to implement a new category of

employee termed Career Professional. Career Professional service covers some mid- and senior-level positions linking security to work performance in terms of the department business plan. The business plan is filed formally with the legislature.

Oklahoma

Compensate competitively with the market, encourage cross training and mentorships, make management training and employee development a priority.

Oregon

Make management more attractive, provide more training in areas of relationship building/politicking, rectify pay compression issues, engage in succession planning activities, identify creative retention strategies, and develop mentoring programs.

South Carolina

Develop a more comprehensive workforce development plan for the agency. Various components of a plan are being addressed such as: Leadership/management training is being offered to prepare employees for management positions and organization charts are being reviewed to identify positions that will be vacated because of retirement options, which will be exercised during the next 3–5 years. However, it all needs to be pulled together in a systematic approach.

Tennessee

Launch Executive Workforce Development Program FY2004.

Utah

Mid-management training and rotation among a variety of jobs.

Virginia

Purposeful executive development program including job shadowing; special, challenging assignments; and other developmental opportunities.

Recruitment—Part II, Question 8

Is there anything specific that your agency is doing to prepare women to be appointed to leadership/management positions in your agency?

Arizona

Succession planning.

Arkansas

Providing equal opportunities under Question 7.

California

The department follows the state of California's civil service objective of equal employment opportunity.

Florida

We do not have separate leadership development programs for women. However, we do ensure that women are propor-

tionally represented in all of our training and development programs.

Georgia

Identifying and nurturing talent.

Hawaii

No.

Idaho

All training programs are open to all employees and we do have an engineer-in-training mentoring program, which mentors both women and men equally. We have no specific program for women.

Iowa

Develop a succession-planning document that identifies strategic areas where problems may occur.

Kansas

Not at this time.

Kentucky

Support enrollment in Certified Management Program. Support enrollment in Advanced Leadership Academy (ALA). Provide mentoring while in ALA. Open positions; require interviews of women and/or minority applicants.

Louisiana

No.

Maryland

Women are encouraged to participate in the agency's Advanced Leadership Program.

Missouri

Missouri DOT has a progressive diversity initiative.

Nebraska

No. Our Leadership Development Program is individualized. All employees are offered the same opportunities, regardless of gender.

New Hampshire

Ensure that all females filling key positions attend the Senior Leadership Conference. Manage assignments where permissible.

Ohio

Affirmative Action goals are part of succession planning. Senior leadership and HR are a part of our business plan review (5 of 13 division managers, 38%, are female.)

Oklahoma

No.

Oregon

Nothing specific.

South Carolina

Providing women's forums bi-annually, which address issues that are identified by a random sample survey of women employed at South Carolina DOT. A pool of potential future leaders is being developed and women in the agency are participating in the training and development opportunities that are available to all employees in the agency. Three specific leadership development programs are available: the Engineer Development Program, Strategic Training and Education for the 21st Century (STEP-21), and Strategic Training for Transportation Agency Representatives (STTAR). All three programs have women from different levels within the organization who participate each year.

Virginia

No.

Training—Part III, Question 11

What could be done to improve the quality of the leadership training that your employees receive in your agency?

Alaska

More classes offered.

Arizona

Design a validation system to measure use of skills on the job.

Florida

Funding for senior leaders to attend executive development programs.

Georgia

Add another level between middle management and senior management.

Hawaii

Give priority to participants with a positive attitude for learning and aspirations to higher position.

Illinois

Obtain new teachers.

Iowa

More management support.

Kansas

See that leadership development is a high priority activity and establish accountability for making it happen.

Missouri

Management selection process should be revised.

Nebraska

The workload of the employees.

Ohio

Provide for DEUs, CLEs, C.P.D.

South Carolina

Senior managers and mid-managers do a better job of modeling the leadership characteristics that are taught in leadership programs.

Tennessee

We are developing Long-Range Work Force Development Plan.

Virginia

Add more rotational and developmental programs for non-engineers.

Training—Part III, Question 16

Is there anything else about your agency's leadership training program that would be of interest to this study or which would be valuable to share with other state DOTs?

Arizona

WASHTO completed a similar survey on leadership training in 2003 and will share results.

Florida

We currently conduct the Supervisor's Academy, the Leadership Academy, and the Graduate Leadership Academy. All are connected and designed to be progressive. While covering successively higher degrees of leadership development, each reviews the critical soft skills required of all supervisors.

Illinois

(A) Illinois DOT has obtained certified status with the International Association for Continuing Education and Training (IACET). With this certification, the department is allowed to issue continuing education credits for approved courses. (B) In addition, the department has recently opened its own training center with wireless access for training for information processing and leadership management courses. (C) Partnership with the Interagency Training Council to provide DOT training to other state agencies. (D) Partnership with Illinois Association of County Engineers to provide leadership training to county engineers. (E) Partnership with various consultants groups to conduct leadership and technical training.

Kansas

All new supervisors are required to attend our 40-hour Basic Effective Supervisory Training Program. Nonsupervisors who have the title of "lead worker" are required to attend our 18-hour Leadership Basics Training Program. However, all

employees are encouraged to attend this program to help them begin or to continue developing their leadership skills. In addition, we offer modules from Achieve Global's "Leadership for Results" program for all employees to attend.

New Hampshire

Leadership training has to start at the top to create a structure that supports and fosters leadership tenets.

Ohio

Tuition reimbursement is provided for bargaining unit and exempt level positions. Courses may be taken in degree earning programs in Ohio DOT-related fields leading to advancement in leadership positions within the agency. In addition, the state of Ohio offers a program to certify employees as "Certified Public Managers" in which ODOT employees participate. Periodic training need assessments of job classifications within the departments are conducted to determine internal and external training programs to be developed, promoted, prioritized, and offered. Annually, ODOT employee training plans are developed.

Oklahoma

The department holds a two-day annual leadership development conference for managers and supervisors.

South Carolina

Yes, we have core courses on leadership development, as well as three special programs to prepare employees for current and future leadership positions. They are (1) STTAR—Strategic Training for Transportation Agency Representatives, (2) STEP-21—Strategic Training and Education for the 21st Century, and (3) EDP—Engineer Development Program.

Tennessee

In support of one of Tennessee DOT's Strategic Objectives of "Building organizational diversity and capacity," our transition from Human Resources Training to TDOT Workforce Development Office was greatly needed. This transition has enabled us to provide our organization and individuals with the knowledge, skills, attitudes, and competencies necessary for creating opportunities to achieve desired and required individual, organizational, and internal and external customer expectations. Viewing development of human capital as a value-add process from a "Whole Person" perspective to include technical, interpersonal, and leadership attributes development will assist in the move towards achieving the business goals of TDOT.

Succession Management—Part IV, Question 9

Is there anything else about your agency's Succession Management program that would be of interest in this study and to other state DOTs?

Florida

In the past we have "raised our own" through the organization. Now we are being encouraged and often strongly directed to seek outside managers to fill top-level positions. This does

not provide a strong incentive for a succession management program.

Illinois

Improved job rotation, cross training, and mentoring of lower-level talent pools.

Maryland

Currently developing a succession planning model based loosely on Byham, Smith and Paese's model of succession management

Missouri

In the event of death or disability, we have a succession plan to ensure immediate replacement.

Tennessee

Validation of executive leadership competencies before developing any learning activities will preclude "Quick Hit" mode of trying to rapidly implement an Executive Workforce Development Program that may prove to be ineffective.

Virginia

Scholarship program and engineer development program.

Succession Management—Part IV, Question 10

What could be done to improve the preparation of your employees for higher positions in management in your agency?

Alaska

More training courses; perhaps a job mentoring or shadowing program.

Arizona

Match competence to skill. List positions that would come open in 5–10 years.

Arkansas

Effective succession management program and adequate funding.

Florida

Identify leadership performance gaps early and use individual development counseling/coaching and training to eliminate these performance gaps.

Georgia

Develop a systematic program beginning with something like *7 Habits*, through several defined developmental stages that build on these concepts and add others, such as strategic management, and move to more purely leadership models and behaviors coupled with the specific leadership challenges of our organization.

Hawaii

Formal succession program with bargaining unit agreements.

Iowa

Leadership training, mentoring, rotational program.

Kansas

Initiate a Success Planning Program and a Leadership Development Program designed to prepare employees for higher positions in management. These options are currently under review.

Missouri

(1) Provide a better understanding of the political dynamics involved in working within state transportation leadership.
(2) Provide a better understanding of the leadership role versus the technical aspects of transportation work.

Nebraska

We enhance our program when we see the need or opportunity to do so. A formal rotation assignment program might be beneficial.

Ohio

More formal mentoring program, identification of critical experience, better promotion of the tuition reimbursement program.

Oklahoma

Establish and implement a management training and development curriculum. Cross train supervisors for a broader knowledge and understanding of the department. Develop a mentoring program.

Oregon

Having a formal succession planning program.

Tennessee

Extensive PR and marketing of leadership opportunities within the organization will create a need for individuals to actively participate in developing an "Individual Development Plan."

Virginia

Multi-faceted developmental opportunities and better identification of bench strength vs. need to "buy" strength.

Succession Management—Part IV, Question 11

Does your agency do anything else not previously mentioned in this questionnaire that would be of interest for the synthesis on developing leaders in state DOTs?

Arizona

Our maintenance leadership program is a separate program for development of maintenance supervisors and superintendents.

Hawaii

A senior manager shadow program for mid-level managers; subsidize employees' independent efforts to acquire leadership and management skills; i.e., college courses, AASHTO workshops, ASCE seminars, etc.

Missouri

Many Missouri DOT leadership positions require professional technical certification (e.g., Professional Engineer certification) to hold the position, even though some of these positions do not perform technical functions. This restricts MoDOT's applicant pool for many leadership positions.

Tennessee

Our Graduate Transportation Assistants (GTAs) program recruits civil engineering graduates from the state and regional universities to provide them with their first real experience in their profession. We provide the GTAs a structured on-the-job-training experience for 12 consecutive months, through formal classes and through hands-on developmental activities in the various functions of Tennessee DOT. The GTAs are moved throughout the state to specific functions within the four regions to give them the "Big Picture" of transportation systems design, development, and maintenance in diverse geographic environments.

Utah

We have a new program that is being announced called the Career Rotation Program. It is a formal method of moving mid-level engineering managers to other assignments to expand their knowledge and understanding of the organization.

APPENDIX D

Leadership Development Programs

NEW JERSEY DIVISION OFFICE, FHWA LEADERSHIP DEVELOPMENT PROGRAM

The following outlines how the New Jersey Division Office of the FHWA advanced leadership development within its organization.

Why We Initiated the Program

As part of the division's corporate management strategies, we created a voluntary "Leadership Development Program." The purpose of the program is to assist the staff in developing their leadership skills and to provide opportunities at the local and national levels to exercise their leadership talents.

Under the corporate management strategies, we have an obligation to develop the leadership skills of our staff. It became apparent to us when developing the program that we did not need to send people off-site for high-priced training. In fact, we believed that an office-based program would provide for better interaction and a greater potential group for the program.

How We Initiated It

We sent an e-mail message to the entire staff announcing the program and discussed it at an all-employees meeting. The notice made it clear that the program was voluntary, but that it would involve a commitment of time and a willingness to develop the needed skills. We treated it as we would any other on-the-job training. In other words, we did not expect the volunteers to do the work on their own time, but to fit it into their daily schedule.

Key Components of the Program

The program is loosely fashioned after the old U.S.DOT Fellows Program.

- **Self-Assessment**—Each volunteer was asked to complete a self-assessment instrument to assess his or her current skill in 20+ leadership attributes. The ADA and I also completed the same instrument for each volunteer. After the instrument was completed, the three of us got together to discuss strengths and opportunities for improvement.
- **Leadership Project**—As part of the feedback discussion on the self-assessment, each volunteer was asked to identify a leadership project. The project had to be one that expanded their skills beyond our office.
- **Monthly Meetings and Book Discussions**—We meet each month to discuss various leadership concepts. Specific activities include:
 - Leadership book reviews: We selected 10 books from a long list of available reading material to focus our discussions. Each month we read a few chapters from the book and as a team discuss how it applies to our office and each of us.
 - DA/ADA discusses leadership and management concepts learned at various leadership forums, workshops, etc. We use case studies to generate discussion and participation.
 - Participants discuss the status of their leadership projects and invite discussions.
 - A different leader moderates each monthly meeting. At the end of each meeting, participants evaluate the meeting and offer recommendations.
 - We plan to acquire and discuss videos on vision, strategic planning, power of words, etc., to add variation.
 - Our leadership group has recently recommended Myers-Briggs Type Indicator personality inventory for the entire office to facilitate better understanding of each other.

Results/Activities

We had nine volunteers in the original program when we started in December 2000. Two members have received promotions since then, but we added seven new people. Our group now comprises 14 leaders (out of 27 in the office).

We have identified changes needed in a number of areas, including:

1. *How we recognize our partners at NJDOT.* We created a Dave Powell Excellence Award to recognize individuals that have successfully worked with FHWA to make New Jersey a better place to live and work.
2. *We refined the Division "outstanding" award process as a result of our last self-assessment,* which was managed by one of our leaders as part of his leadership project.
3. *How we interview candidates for positions in the Division.* We have identified a number of critical traits that candidates need to fit into our office culture.
4. *How we look at training.* A number of our leaders have identified the "Transportation Virtual University"—a U.S.DOT web-based training package—as a very viable way to obtain training in leadership without leaving the office. As a result of this heightened interest in web-based training, we have provided a workstation in our

office library to ensure uninterrupted training time for the leader.

To improve the quality of our training program and to give it more focus, the ADA now meets with every staff member annually to discuss and ensure the Division training program is meeting employees' needs and is aligned with the agency objectives.

5. *Our leadership group recently participated in a 360-degree feedback survey* administered by the USDA. The participants considered this effort very informative and useful.

Leadership training is one of our highest priorities. Absent skilled leaders, FHWA will not be capable of leading the transportation community into this new millennium. Ours is but one of many approaches that can be taken. We encourage everyone to develop a leadership program for his or her staff.

LEADERSHIP DEVELOPMENT PROGRAMS AND OPPORTUNITIES—MARYLAND STATE HIGHWAY ADMINISTRATION, NOVEMBER 10, 2004

The following details the leadership development programs in the Maryland State Highway Administration (MSHA):

MSHA has two formal Leadership Development Programs:

- Advanced Leadership Program (ALP)
- Leadership Education and Development (LEAD)

MSHA provides many other opportunities for employees to develop the leadership skills necessary for advancement in the agency:

- Mentoring Program
- New Supervisor Training Program
- Rotational Program
- Personal Development Plan

In addition, technical training opportunities that incorporate leadership development skills are available to meet individual needs:

- Advanced Education Program
- Graduate Engineers' Training Program
- Project Management Training Program
- Engineering Technician Development Program
- Morgan State University Scholarship Program

The following provides a brief overview of each program.

Advanced Leadership Program Overview

The ALP started as the Management Development Program more than 15 years ago and to date there are more than 125 graduates. In this 2-year leadership development program,

MSHA managers are competitively selected and then provided with the opportunity to develop and enhance their leadership skills. The purpose of the program is to provide managers with the tools necessary to further enhance both their personal and professional development. MSHA benefits from this program by having leaders who will be better prepared to fill positions of increased responsibility and challenge and by having managers who will be ready to take on succession planning.

The individual manager benefits from the 2-year program in many different ways, which include, but are not limited to, the following activities and/or experiences: participating in the University of Maryland's Center for Creative Leadership Program, which provides managers with an honest and candid appraisal of one's leadership style and behaviors; developing and implementing an Individual Development Plan with guidance from MSHA's administrator; participating in teambuilding and leadership retreats, which provide managers with opportunities to hone their individual leadership and work group skills; participating in and/or leading monthly class meetings based on specific topics related to leadership development and learning the value of working together as a group; participating as a class in a highly visible class project sponsored by a senior manager; participating as a class in a community project; participating in a mentoring relationship with a senior level manager; exposure to working with all levels of MSHA to gain a broader understanding of the organization and engaging in various leadership training and developmental activities.

As a member of the ALP, individuals are expected to complete all of the requirements of the program and to continue to maintain a high degree of motivation, initiative, and commitment—many of the same qualities and characteristics needed to be an excellent leader at MSHA. Approximately 50% of the Senior Management Team of 29 completed MSHA's MDP/ALP program.

Leadership Education and Development Program

Leadership Education and Development (LEAD) is a leadership development program for managers and team leaders designed to enhance and hone an individual's management and leadership skills. LEAD is open to any manager, supervisor, or team leader who wants to further enhance his or her personal and professional development.

The program is comprised of a 360-degree feedback assessment, which enhances one's self-awareness of both strengths and weaknesses, and a specific curriculum that includes the following courses: Essentials of Leadership, Managing for Results, Basic Personnel Management, Meeting Boot Camp, Budget/Fiscal Management, Effective Presentation Skills, Coaching for Commitment, and a Leadership Wrap-Up Module, to assess how well the individual manager has been able

to apply the skills and behaviors in his or her day-to-day personal and professional life. The curriculum also includes several electives to choose from, including Conflict Management, Effective Communication, Managing Multiple Priorities, Managing Change, and Professionalism. Participants have 2 years to complete the entire curriculum; once completed, the participant is presented with a LEAD certificate.

Mentors Program

MSHA's Mentors Program is vital to the success of a diverse work environment. The program consists of two components: a Mentor/Mentee Program and a Peer-to-Peer Mentor Program. The program also works to

- Provide role models,
- Help build networking and relationship building skills,
- Improve understanding of the organizational culture of MSHA,
- Encourage and foster development opportunities and growth,
- Help the employee in his/her career development goals, and
- Improve organizational effectiveness.

The Mentor/Mentee Program is a formal one-on-one partnership between an experienced senior or mid-level person (mentor) and a less experienced person (mentee) intended to help foster the career development and professional growth of the mentee. The partnership is a sharing of knowledge, experience, skills, and organizational insight.

The Peer-to-Peer Program matches a current employee with a newly hired employee on a short-term basis to help the new employee become familiar with MSHA's culture, people, facilities and activities. The purpose is to foster and value new working relationships, assist in understanding the various opportunities within the culture of MSHA, and promote a sense of inclusion.

New Supervisor Training

The Maryland Department of Transportation implemented a department-wide Supervisor Certification Program 3 years ago. All new supervisors are required to participate in a supervisor and management curriculum within 6 months of being assigned supervisory responsibilities.

Rotational Opportunities

Rotational opportunities are encouraged for employees who would like to learn a different operational aspect of MSHA or new skills. At the same time the employee provides temporary assistance to meet the particular needs of the host office. Rotational assignments are often a tool for accom-

plishing organization and/or performance improvements and an excellent opportunity for exposure to different leadership styles. Most rotational opportunities originate with a solicitation from an office in need of assistance. The process is similar to MSHA's hiring process. Applications are submitted, applicants are interviewed, and a selection is made from among the applicants. Rotational opportunities may last up to 1 year.

Personal Development Plan

All MSHA employees complete an annual Personal Development Plan, usually in conjunction with a periodic performance evaluation. The Personal Development Plan is designed to encourage each employee to set both career and personal development goals, identify the resources needed to reach those goals, and set realistic time frames for completion of his/her objectives. Managers provide input and coach and mentor the employee for success.

Graduate Engineering Training Program

The Graduate Engineering Training Program was developed to provide new engineers with the highest level of technical and managerial enhancement available in the civil engineering field. Both aspects of the program, rotation and modules, are top-notch opportunities for the technical and managerial developments of MSHA's engineers. They open doors and provide diversity of experience.

Advanced Education Program

This program assists MSHA employees with their pursuit of higher education, which may include various certifications and degrees. It is an educational opportunity offered to employees to help satisfy their career objectives.

Project Management Training Program

Project management training was developed for MSHA consultant personnel who are either currently managing projects or will be given project management responsibility. The training is delivered by the University of Maryland College Park, Clark School of Engineering, as well as MSHA and consultant staff.

Engineering Technician Development Program

The Engineering Technician Development Program was developed to provide MSHA employees in the technical series at the Transportation Engineer Technician III, IV, and V levels with the opportunity to improve job performance. The participants in the program complete an extensive curriculum involving five college-level courses in addition to a series of

in-house core courses focusing on developing and enhancing management, communication, and technical skills.

Morgan State University Scholarship Program

This 2-year program provides engineering technicians who have already completed their Associates Degree the opportunity, upon selection, to pursue a Bachelor of Science degree in Civil Engineering. The scholarship includes tuition and regular salary for employees to attend school full time.

Continuing Efforts

MSHA sets goals for a diversified workplace where all employees are provided with opportunities for development of the leadership skills that are necessary for job performance and job advancement. To date, MSHA has met its goal in the hiring and retaining of women engineers. MSHA's Deputy Administrator for Finance, Administration, and Information Technology is a woman and the first African-American to hold a deputy position at the agency. Six members of MSHA's senior management team are women, three of whom have joined the team within the past three years. This is an evolutionary process.

ARIZONA DEPARTMENT OF TRANSPORTATION

The following details the leadership development model in effect at the Arizona Department of Transportation (ADOT) while the author was the Deputy Director/Chief Operating Officer of the agency in the mid-1990s.

ADOT was faced with many challenges in the early 1990s. Major program and leadership changes left the agency in need of a strong commitment to its current and future leaders to ensure its future success. In 1993, the new Executive Director and the deputy directors decided that a comprehensive leadership program was needed to cultivate and train individuals who were currently filling positions of responsibility and leadership at ADOT.

The foundation of the program was found in three popular texts of that era: *Leadership Is an Art* by Max DePree, *The American Samurai* by Bill Lareau, and Stephen R. Covey's *The 7 Habits of Highly Effective People*. It was felt that the concepts presented in these three books reflected the directors' leadership philosophy and that the books represented a

sound foundation of learning for all of ADOT's leaders. With this in mind, each participant in the ADOT leadership development program was required to read all three before attending training.

Training was offered to each of the divisions, largely as a unit. At that time, the 4,500 employees were divided into five divisions: Administration, Highways, Transportation Planning, Aeronautics, and Motor Vehicles. Each division was taken individually, with leaders gathered in groups of 20 to 40 for the training. It was felt that keeping the division groups together would facilitate further team building experiences as well as advance the desired leadership training objectives.

Training occurred off-site over the course of 2 days. Most of the curriculum was taught by the directors, with some elements presented by the division director or another key leader of that unit. Course work was taken from the materials found in the three books; it offered an opportunity for participants to explore and further develop their understanding of the principles presented in those works. The training was highly interactive and participatory for all involved.

Those selected for the initial phase of the training were from the division directors and their immediate subordinates. Subsequent phases included other leaders within the five divisions, until a large number of leaders throughout the agency had been trained.

It was a high impact experience for this leadership team to spend concentrated time together with the three top leaders of the agency addressing key topics and concepts that would further ADOT in its transportation objectives for the state. Outcomes were tangible and gratifying. Leaders developed sound skills. They recognized a leadership culture that was reflective of Max DePree's style of management articulated in his book, where leaders bear the pain and not inflict it. Bill Lareau's descriptions of undesirable traits in corporate America were the genesis for many subtle but significant changes in how ADOT operated and in how the hierarchy was broken down. Covey's seven habits became a common thread in communications and leadership efforts.

This program, borne out of necessity, became a powerful tool for advancing a culture of leadership that had been unknown at ADOT until that time. In the end, many leaders emerged from those training sessions and this program better equipped to lead in the 21st century.

Abbreviations used without definitions in TRB publications:

AASHO	American Association of State Highway Officials
AASHTO	American Association of State Highway and Transportation Officials
APTA	American Public Transportation Association
ASCE	American Society of Civil Engineers
ASME	American Society of Mechanical Engineers
ASTM	American Society for Testing and Materials
ATA	American Trucking Associations
CTAA	Community Transportation Association of America
CTBSSP	Commercial Truck and Bus Safety Synthesis Program
DHS	Department of Homeland Security
FAA	Federal Aviation Administration
FHWA	Federal Highway Administration
FMCSA	Federal Motor Carrier Safety Administration
FRA	Federal Railroad Administration
FTA	Federal Transit Administration
IEEE	Institute of Electrical and Electronics Engineers
ITE	Institute of Transportation Engineers
NCHRP	National Cooperative Highway Research Program
NCTRP	National Cooperative Transit Research and Development Program
NHTSA	National Highway Traffic Safety Administration
NTSB	National Transportation Safety Board
SAE	Society of Automotive Engineers
TCRP	Transit Cooperative Research Program
TRB	Transportation Research Board
TSA	Transportation Security Administration
U.S.DOT	United States Department of Transportation