

SDOTs increase the amount of work they contract out, the way to accomplish their mission, as well as the knowledge, skills, and abilities needed, changes accordingly. This change is reflected in new agency core competency needs.<sup>4</sup> How contracting out can change key skill needs is described in Appendix E. These needs are also affected by such factors as the increasing application of intelligent transportation system (ITS) technologies.

## **RECRUITING QUALIFIED PEOPLE**

Recruiting for key positions in SDOTs and TAs must reflect current and future workforce needs and the labor market. Although traditional recruiting techniques are likely to continue to be used in addressing agency needs, customizing the recruiting process to better align tactics, market conditions, and the positions being filled can help agencies deal successfully with current and possible future recruiting issues, including multiple career paths, a pleasant work environment, training and education opportunities, work–life balance, freedom of location, and attractive financial and compensation/benefits packages. While government agencies and some private companies may not be able to address all these issues to the same degree, they can view them as useful benchmarks for evaluating strategies and innovative practices.<sup>5</sup>

Although SDOTs use a variety of recruiting approaches, most rely on campus recruiting. Many have traditionally hired newly graduated engineers and rotated them through a series of work assignments within the agency.<sup>6</sup> Some SDOTs have long-standing alumni

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<sup>4</sup> As organizations get better at identifying their core competency needs and skill gaps, they can document the skills they no longer need. Staff with unneeded skills must be retrained, re-assigned, or rotated out of the organization.

<sup>5</sup> James Krug, FMI Engineering Recruiters, told the committee that work–life balance is the primary issue for recruits under age 40, whereas the compensation package is the primary issue for those over 40.

<sup>6</sup> A survey of engineering job applicants to the Ontario Ministry of Transportation revealed that the ministry's 4-year job rotation program is an important attraction for engineering graduates seeking an employer that provides competitive compensation and opportunities for exposure to diverse disciplines and state-of-the-art technologies. The rotation program is structured to qualify participants for professional engineering licensure requirements by its conclusion.

connections with state universities, while others have research or other organizational ties that enable them to identify and encourage potential job applicants. The Kentucky Department of Transportation, for example, has a successful scholarship program that provides it with many graduate engineers (see Box 4-1). Other potential sources for job applicants are university cooperative engineering

#### BOX 4-1

##### **Kentucky Department of Transportation Scholarship Program**

Since 1948, the Kentucky Department of Transportation (KYDOT) has had a program of civil engineering scholarships at four state universities. At present, 75 scholarships are available annually. KYDOT currently has a workforce of 6,100, of whom 445 are engineers; two-thirds of these engineers are graduates of the program.

The scholarships have conditions. An applicant must be a Kentucky high school graduate or a Kentucky resident, maintain a minimum semester or cumulative grade point average of 2.5 based on a 4.0 scale, continue to maintain full-time student status (12 credit hours per semester), and complete 30 credit hours by the end of each school year. The student receives a stipend: \$3,200 for freshmen and sophomores, and \$3,600 for juniors and seniors. The student applies to the state university of his or her choice.

After graduation, there is a 1-year rotation program (2 months in six locations), followed by a 1-year intensive assignment. KYDOT may provide summer employment as long as the student is making reasonable academic progress. Salaries for summer employment are based on university credit hours earned and range from \$1,121 to \$1,427 per month.

**TABLE 4-2 Example College Recruitment Timetable (NAPA 1999)**

<b>Activity</b>	<b>Time Frame</b>
Establish company or organization identity on campus	Continuous
Identify candidates for formal job interviews	Fall or early spring semester
Job interviews on campus	Spring semester, earlier rather than later
Site interviews at headquarters	Invitation issued within days of campus interview—conducted soon thereafter
Decide whom to hire	Recruiting team generally makes final decision on the day of the interviews; other required approval, if any, obtained within a day or two
Issue job offers	Within a day or two of the interview
Decision by candidates	Generally flexible, with ongoing contact
Start work	Negotiable

education programs, scholarship programs, summer employment for promising undergraduate students, support for graduate student research, research partnerships between agencies and universities, agency support of student engineering association activities, and job fairs. Career development information can be provided via websites, videos, CDs, and printed materials; career-day participation; and support for mentoring programs, science fairs, and internship programs (Mason et al. 1992).<sup>7</sup> The timetable for the college campus recruiting process shown in Table 4-2 illustrates the many activities involved in such recruiting, as well as the continuous nature of the process.

A recent survey of SDOT recruiting practices confirms that the agencies are becoming more innovative in recruiting (Gilliland 2001). States are using benchmarking and salary surveys to increase salary levels, developing flexible employment arrangements for employees with special physical or family needs, and establishing employee satisfaction programs that include frequent communication with supervisors.

<sup>7</sup> Several sources stressed to the committee the importance of organization websites for attracting today's young college graduates and other potential job applicants who are computer proficient.

They are also instituting bonus programs for new hires, referrals by existing employees, and retention in critical job categories; streamlining the hiring process to reduce delays; and using multidisciplinary teams for recruiting visits and interviews (Gilliland 2001). More specific methods are used for some individual job categories. For example, when one state agency found it difficult to recruit information technology specialists, it instituted an internal training program for employees desiring a career change. Applicants who pass a screening test participate in a 6-month training program while continuing to receive their salary. Trainees are guaranteed the option of returning to their previous jobs if the training is not successful. In its initial year the program had a 100 percent retention rate. Other actions taken by SDOTs include the following:

- Partnering with a state university to establish individual development plans addressing both personal and departmental goals, with all employees being offered core competency courses to increase individual effectiveness and specialized courses to prepare them for future career opportunities;
- Providing incentives for highly motivated or economically disadvantaged students to complete their education while working at the agency;
- Working with the universities within a state to establish distance learning opportunities for advanced degree programs in areas of needed expertise; and
- Helping universities prepare and monitor senior design projects to provide undergraduate engineers with exposure to multidisciplinary projects that reflect agency experience.

Re-recruiting, or attracting adults making a career transition, has proved successful at several SDOTs looking to add or replace skills in middle- and upper-management positions. Highly qualified people who are retiring from another organization often remain interested in working in a stable work environment or wish to accumulate additional retirement benefits. Re-recruiting involves many of the same

approaches used to recruit experienced professionals. Some examples are described in Table 4-3.

Some TAs have also adopted innovative recruiting methods, especially for bus drivers and information technology specialists, two of the most difficult positions to fill. (See Box 3-2 for details of the technician apprenticeship program at the Metropolitan Transit Authority in New York City.) TAs have found that well-planned and highly targeted advertising and outreach programs can be successful in this regard. Some are recognizing the differences between what transit employees value most and what transit managers think they value, and they are tailoring their recruiting efforts accordingly (see Table 4-4). Some are awarding bonuses to employees who recruit new bus operators; others display a promotional bus at major public and sporting events and have bus operators available to talk to prospective operators. Other tactics, which apply to all organizations and most job categories, include the following (Moffat et al. 2001):

- Providing website access for potential recruits;
- Focusing on inside sources, current or former employees, and internal job postings;
- Seeking recruits through schools and fraternal, religious, and community organizations;

**TABLE 4-3 Recruiting Experienced Professionals (NAPA 1999)**

<b>Approach</b>	<b>Relative Success</b>
Newspaper and journal ads	Does not produce a high volume of candidates; best for marketing the firm to potential applicants
Job fairs	Can generate a few candidates, as with ads; can be used for marketing
Internet postings	High-volume source of resumes, but additional screening is needed
Company Web page	Can be a good source of applicants, especially as software becomes more sophisticated
Employee referrals	Unquestionably the best source of high-quality applicants
Direct sourcing	Direct calls to firms with a particular expertise (identified through news articles or websites) can be effective for specific skills. Can also be effective for senior positions

**TABLE 4-4 What Transit Employees Value and What Transit Managers Think Transit Operators Value (Moffat et al. 2001)**

<b>What Employees Value</b>	<b>What Transit Managers Think Operators Value</b>
Type of work	Competitive benefits
Respectful treatment	Safety
Ability of top management	Respect for employees
Coaching and feedback from supervisor	Performance recognition
Opportunity to learn new skills	Competitive pay
Training	Work environment
Recognition for a job well done	Equity and fairness
Pay Recognition	

- Specifically seeking recruits from traditionally underrepresented groups;<sup>8</sup>
- Orienting the recruiting message to the career life cycle; and
- Developing structured assessments of recruits.

Some state governments have elevated the issue of strategic workforce planning in all state agencies and consolidated state and local efforts to address workforce development issues. States can encourage and support business–government partnerships to address specific needs. A few states, notably Michigan, Maine, and Wisconsin, use the youth apprenticeship approach in which students and employers agree to a program of school-based and work-based learning to achieve a well-designed and broad occupational certification (21st Century Workforce Commission 1998). This approach motivates students not only through incentives to learn for future jobs but also through what they produce today in a work context. Youth apprenticeship helps connect young people with natural adult mentors, lessens the chance of a mismatch between training and career posi-

<sup>8</sup> Civil engineering programs, the traditional source of transportation professionals for SDOTs, are also striving to achieve greater participation of underrepresented groups, as noted in Chapter 3.

tions, and increases the likelihood that students will learn current practice rather than old approaches. Certification can reduce the uncertainty concerning the skills a worker obtains and increase the portability and the market value of the training. Wisconsin developed 20 occupational standards in collaboration with community colleges and associations of employers. The state has more than 1,200 apprentices in fields such as financial services, health services, printing, automobile technology, and biotechnology. States could partner to develop additional transportation-related programs.

## **TRAINING THE WORKFORCE: PROVIDING A CONTINUOUS LEARNING ENVIRONMENT**

Training and retraining have become essential components of an organization's human resource activities.<sup>9</sup> Technology change and innovation are requiring continuous or lifelong learning to acquire and retain skills at an appropriate level.<sup>10</sup> Formal training of new employees has been found to decrease time to competency significantly, as well as to reduce operational problems (LeMay and Carr 1999).<sup>11</sup> Benchmarking studies indicate that exemplary organizations spend the equivalent of about 2 percent of their payroll costs on training (Becker et al. 2001). Such organizations view training as an investment in their people and the organization's future. They recognize that this investment helps forestall the costs and lost opportunities associated with inadequately trained employees.

Training is a necessity at all job levels. Lerman and Schmidt (1999) report that more than two-thirds of employers indicated that the skills required for production or support jobs had increased over the prior

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<sup>9</sup> Retraining is an important means of upgrading employee skills in light of changing job requirements; it can also be an option for employees whose skills are no longer needed but who could continue to be effective contributors.

<sup>10</sup> The Federal Highway Administration has set a goal of spending 3 percent of annual agency payroll on training programs.

<sup>11</sup> Research has shown that new employees are vulnerable to voluntary turnover during their period of acclimation to the organization. Training and mentoring programs and coaching help forestall such turnover.