



## Responding to the Changing Competency Requirements of the State DOT Employee

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## Now

**The DOT employee of today needs to have a much larger skill set than the DOT employee of 20 years ago.**

**More work needs to be done by an ever shrinking pool of qualified applicants.**



## How

**How do we increase the number of qualified applicants?**

**How do we recruit the applicants with the skills sets we need at the DOT?**

**How do keep these well-qualified applicants employed at the DOT?**



## What DOTs are Doing

**US State DOTs use a variety of methods to recruit, train and retain the well-qualified applicants.**

- Outreach programs for K thru 12 students.
- Internships for high school and college students.
- Scholarships for college students majoring in transportation related areas.
- Aggressive Recruiting Programs
- Employee Training Programs
- Succession Planning Programs
- Growing From Within



# Outreach

## Introducing Students to DOT Employees

- Career Days
- Job Shadowing Days
- Mentoring Programs



# Outreach

## Career Days

- DOT Employees making a presentation about their job and careers to students
- Presentation is usually followed by a hands on activity conducted with the students
- Career days take place in the classroom or at a DOT facility



# Outreach

## Job Shadow Days

- Brings a small number of students into the DOT Office.
- Students are assigned to a DOT employee and observe the employee as they go about their job duties
- As an enhancement, students are often given job related tasks to perform while shadowing
- Students shadow in an area of the DOT that they are interested learning more about.



# Outreach

## **Mentoring**

- DOT employees become Mentors
- Establish a long term relationship with the education community
- Adopt a school and visit the classroom on a regular basis
- The DOT mentor gives presentations and conducts activities along side the teacher



## DOT Outreach Programs



# Outreach

## **Arizona Department of Transportation (ADOT)**

- ADOT participates in Career Days at various high schools to explain potential future careers at ADOT

## **Idaho Department of Transportation (IDOT)**

- IDOT conducts pipeline educational outreach
  - AASHTO's TRAC Student Outreach Program
- Go to elementary schools
- Bring students to IDOT locations
  - See the equipment
  - Hear about various transportation career opportunities



# Outreach

## **New Hampshire Department of Transportation (NHDOT)**

- Uses AASHTO's TRAC Student Outreach Program to develop and maintain interest in the Civil Engineering field at the high school level

## **Washington State Department of Transportation (WSDOT)**

- Establishing a pilot mentoring program
  - Engineers team-teach in math & science classes as "guest lecturers" at the elementary school, middle school and high schools

# Outreach

## **Nebraska Department of Roads (NDOR)**

- The NDOR has job shadow programs for students in elementary, junior and senior high schools
- Conducts classes for schools and organizations setting up surveying courses, Microstation or CADD drafting classes

## **Nevada Department of Transportation (NDOT)**

- Implemented several outreach programs geared towards students in grades K-12
  - AASHTO's TRAC Student Outreach program
    - focuses on grades 4th through 12th.
  - Career, Science and Technology fairs
  - Engineering Summer Camps at the K-12 level.



# Outreach

## **North Dakota Department of Transportation (NDDOT)**

- AASHTO's TRAC Program for student outreach.
  - A retired engineer provides hands on experience in the classroom

## **Mississippi Department of Transportation (MDOT)**

- AASHTO's TRAC Program
- MDOT Developed RIDES Program
- Partnership between MDOT and the Mississippi Superintendent of Education.
  - Math and science teachers will work with MDOT engineers in the field



# Recruiting

**Recruiting at the High School, Community College and University Levels**

**Transportation is not the only industry facing future workforce shortages**

**Skilled and educated individuals are in demand**

**Recruiting at High Schools and Colleges is critical if Departments of Transportation are to have a strong workforce**



Recruiting

# DOT Recruiting



# Recruiting

## **Arizona Department of Transportation (ADOT)**

- The Summer Engineering Program
- Equipment Services Student Aides
- Interns - The Walter Cronkite School of Journalism and Mass Communication at ASU
  - Three interns per semester

## **Idaho Department of Transportation (IDOT)**

- The DOT partners with community colleges and other community entities



# Recruiting

## **New Hampshire Department of Transportation (NHDOT)**

- The DOT partnered with a recruiter to visit the technical high school programs to attract applicants to Highway Maintainer Positions

## **Washington State Department of Transportation (WSDOT)**

- Expanding the presence of recruiting for the Transportation Technician 1 positions to high schools, and technical and community colleges
  - Targeting high school graduates
- Apprenticeship Program focuses on attracting high school and GED graduates with an interest in entering a pre-engineering job class

# Recruiting

## **Nebraska Department of Roads (NDOR)**

- NDOR has formed partnerships with universities and colleges
  - Advertise Work Study opportunities for students
- Internships to help students complete requirements for graduation and CO-OPS

## **Nevada Department of Transportation (NDOT)**

- Offers 45 summer internships to undergraduate and graduate students studying for careers in civil engineering, planning, right of way, computer science, land surveying, and landscape architecture.

# Recruiting

## **North Dakota Department of Transportation (NDDOT)**

- Recruitment bonuses of up to 2.5 months pay
- NDDOT established a design center on the campus at North Dakota State University
  - Advancement has been rapid for the employees coming from this background.
- Scholarships are provided to a number of engineering or technical school students
- Internship program

## **Virginia Department of Transportation (VDOT)**

- The VDOT Transportation Engineer Scholarship Program provides a \$3500 scholarship per semester to selected students at least in their sophomore year and majoring in civil engineering.

## Training and Retention

**Its workforce must be continually trained if a DOT is to operate efficiently in the 21st century.**

- Keeping employees trained will help keep them at the DOT and keep them productive

**Helping employees get and maintain professional certifications will help to keep your workforce at the DOT**

**Job satisfaction is just as important as salaries**

**When an employee leaves, so does their knowledge and experience.**

- DOTs need to capture and pass on this knowledge and experience to the next generation of DOT Employee.



# Training and Retention

## DOT Training and Retention

# Training and Retention

## **New Hampshire Department of Transportation (NHDOT)**

- The NHDOT offers 50% tuition reimbursement to employees and funds other training that would support a career path at DOT.

## **West Virginia Department of Highways (WVDOHW)**

- The West Virginia Department of Highways and Fairmont State University have collaborated to form the Transportation Engineering Technical Program.
  - Certifies technicians at 5 different levels
  - Allows individuals to obtain an A.A.S. Degree on-line in ten years

# Training and Retention

## **Washington Department of Transportation (WSDOT)**

- Focuses on cross training at all Transportation Technician and Transportation Engineer levels
- WSDOT is planning to employ one Transportation Technician 1 apprentice for each Region.
  - Apprenticeship Programs have consistently shown that “home-growing” employees results in reduced absenteeism, reduced turnover, and increased productivity

## **Kansas Department of Transportation (KDOT)**

- Kansas Department of Transportation (KDOT) and the Kansas Contractors Association (KCA) established a training program
  - Designed to give construction workers the additional skills they need for career advancement

# Training and Retention

## Nebraska Department of Roads (NDOR)

- Succession Planning Program
- Overall training curriculum
  - includes a variety of training tools
  - formats
    - Classroom
    - Web-based Training
    - On the job training
    - Partnerships with the Community Colleges.





## Conclusions

**Recruiting and maintaining a skilled DOT workforce will be difficult**

- The DOT is competing with other industries for employees

**The DOT must reach out to and become part of the education community**

- Visiting the classroom at all grade levels starting in kindergarten and staying in the schools thru 12th grade
- DOTs must have a presence at the college and university level



## Conclusions

**The DOT must aggressively recruit those individuals with the skills needed to operate a 21st century transportation system**

**The DOT must continually train their workforce**

**The DOT needs to have a process in place to pass on institutional knowledge**