

# Politics of Engineering: The Increased Need for Transportation Engineers in 2010

By: Thornton J. Williams, Williams Wilson P.A.



As Florida looks to growing the state's economy, ensuring a competitive business climate, building a world-class workforce, developing a strong and sustainable infrastructure and establishing Florida as a pre-eminent global hub, the interest in recruiting and retaining a trained and skilled workforce in such areas as transportation engineering takes on a significant role.

Transportation engineering is a sub-discipline of civil engineering.<sup>1</sup> Civil engineers design and supervise the construction of roads, buildings, airports, tunnels, dams, bridges, and water supply and sewage systems. In turn, they must consider many factors in the design process from the construction costs and expected lifetime of a project to government regulations and potential environmental hazards such as earthquakes and hurricanes.<sup>2</sup>

As I mentioned in my September 2009 article on *The Discipline of Transportation Engineering*, transportation engineering is a multidisciplinary field which encompasses a wide variety of issues and areas, including the design of streets, highways and intersections; mass transit systems; urban planning; traffic control systems and devices; travel demand and traffic flow; sizing of transportation facilities; operations and management for roadways; highway sign visibility; traffic congestion and safety hazards; and the management and economics of transportation systems.<sup>3</sup>

Federal, State, and local governments employed about 12 percent of engineers in 2008. In 2008, engineers held about 1.6 million jobs, with civil engineers accounting for 278, 400 of that number.<sup>4</sup> Additionally, civil engineers are expected to have employment growth of 24 percent over the projections decade, much faster than the average for all occupations. Spurred by general population growth and the related need to improve the Nation's infrastructure, more civil

<sup>1</sup> [http://en.wikipedia.org/wiki/Transportation\\_engineering](http://en.wikipedia.org/wiki/Transportation_engineering)

<sup>2</sup> <http://www.bls.gov/oco/ocos027.htm>

<sup>3</sup> Handbook of Transportation Engineering, Myer Kutz, Editor, McGraw-Hill Handbooks, November 17, 2003.

<sup>4</sup> <http://www.bls.gov/oco/ocos027.htm>

engineers will be needed to design and construct or expand transportation, water supply, and pollution control systems, and buildings and building complexes. They also will be needed to repair or replace existing roads, bridges, and other public structures.<sup>5</sup>

In Florida, because Transportation Engineering is such a comprehensive field, the Florida Department of Transportation (Department) has developed a Professional Engineering Training Program specifically designed for graduate engineers to pursue a career path in this discipline. The primary purpose of the program is to provide graduate civil engineers with broad, practical experience in the field of transportation engineering, in order to become a registered and licensed Professional Engineer in the State of Florida.<sup>6</sup>

In turn, the Florida Legislature is also looking at the issue of how to recruit and retain a skilled workforce in Florida; one that can develop and maintain the infrastructure needed to increase jobs and the economic growth of Florida. To this end, in the upcoming 2010 legislative session, proposed SB424, Relating to the Department of Transportation, provides a framework to the FDOT to maintain specified training programs for employees and prospective employees in the transportation engineering program.

Specifically, in SB 424, subsection (34) has been added to section 334.044, Florida Statutes, to read:

***334.044 Department; powers and duties.—The Department shall have the following general powers and duties:***

(34) To maintain training programs for department employees and prospective employees who are graduates from an approved engineering curriculum of 4 years or more in a school, college, or university approved by the state Board of Professional Engineers for the purpose of providing broad practical expertise in the field of transportation engineering and leading to licensure as a professional engineer. The department shall maintain training programs for department employees providing broad practical experience and enhanced knowledge in the areas of right-of-way property management, real estate appraisal, and business valuation relating to the department's right-of-way acquisition activities. These training programs may provide for incremental increases in the base salary of all employees enrolled in the programs following successful completion of training phases.

Undoubtedly, as we look towards building upon and improving Florida's infrastructure and roadway systems, we must also look towards increasing the education and training, recruitment and retention of our transportation engineers.

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<sup>5</sup> Id.

<sup>6</sup> <http://www.dot.state.fl.us/projectmanagementoffice/PETraining/default.shtm>



**About the Author:**

Thornton J. Williams is a Managing Partner at Williams Wilson P.A.  
He may be reached at: 850-224-3999 or by email:

[twilliams@twalaw.com](mailto:twilliams@twalaw.com)