

5.0: PROFESSIONAL ENGINEER TRAINING PROGRAM FINDINGS

As part of the market salary survey for FDOT Executive staff, MGT was requested to review the salary schedule for the Professional Engineering Training Program (P.E.) and develop recommendations on appropriate pay for retention of P.E. trainees (market value) based on a salary survey of similar positions in the transportation industry.

5.1 PROGRAM OVERVIEW AND COMPENSATION

As documented by FDOT, the Department's P.E. Training Program is a four-year, two-phase training program encompassing all aspects of the Department's operations, and prepares the trainee for a role in organizational leadership. The purpose of the P.E. Training Program is to:

[...] facilitate the recruitment and hiring of graduate civil engineers by offering an initial career path providing broad, practical experience in the field of transportation engineering, leading to licensure as a Professional Engineer in Florida; [...] the program also serves as a resource for the succession of Professional Engineers who develop into future leaders and managers within the Department.

The P.E. Training Program is administered by the District Directors of Transportation Operations, while related administrative duties are performed by the Production Support Office in the Department's Central Office.

The first phase is the Engineer-In-Training (EIT) Program, a two-year rotational assignment encompassing all aspects of the Department's work. The second phase is the Senior Engineer Training (SET) Program, a two-year internship combining on-the-job training in the technical and managerial functions of a specific work area in the Department.

EIT is a professional designation from the National Council of Examiners for Engineering and Surveying (NCEES) used in the United States to designate a person certified by the state as having completed two requirements:

- 1) Completed a minimum of three years of post-secondary school at an Accreditation Board for Engineering and Technology (ABET)-accredited engineering program, or related science curriculum approved by the Board – Many states allow for the substitution of several years of engineering experience in place of the engineering degree requirement.
- 2) Passed the NCEES six hour Fundamentals of Engineering (FE) Examination.

Once an individual has passed the exam, the state board awards that person an Engineer in Training (EIT) or an Engineer Intern (EI) designation. EIT and EI are equivalent variations in nomenclature that vary from state to state. Receiving an EIT designation is one step along the path toward Professional Engineer (PE) licensure.

In Florida, the program is offered to candidates who have earned a Bachelor’s degree in Civil Engineering or a Bachelor’s degree in Science in Civil Engineering from an ABET-accredited university, or an equivalent per Chapter 471, of the Florida Statutes, and Rule 61G15, of the Florida Administrative Code. Candidates are required to have completed or be registered to take the Fundamentals of Engineering (FE) Examination administered by the Florida Board of Professional Engineers, or an equivalent examination administered by another state, prior to entering the P.E. Training Program. Applicants typically take the FE Examination during their final year of school or immediately after graduation. Candidates with more than two years of post-graduation engineering experience may qualify to start in the Program’s second phase, the SET Program, instead of the EIT Program. Candidates for the P.E. Training Program must also be citizens of the United States or lawfully authorized to work in the United States, as Trainees are employed by FDOT.

Exhibit 5-1 presents the P.E. Training Program’s current pay schedule for Trainees.

EXHIBIT 5-1: P.E. TRAINING PROGRAM PAY SCHEDULE

LEVEL	INCREASE	B/W SALARY	ANNUAL SALARY
Starting salary	\$ -	\$ 1,628.35	\$ 42,337.10
6 Months - 5%	\$ 81.42	\$ 1,709.77	\$ 44,454.02
12 Months - 5%	\$ 85.49	\$ 1,795.26	\$ 46,676.76
18 Months - 5%	\$ 89.76	\$ 1,885.02	\$ 49,010.52
24 Months - 5%	\$ 94.25	\$ 1,979.27	\$ 51,461.02
36 Months - 5%	\$ 98.96	\$ 2,078.23	\$ 54,033.98
48 Months - 5%	\$ 103.91	\$ 2,182.14	\$ 56,735.64
Passes PE - 5%	\$ 109.11	\$ 2,291.25	\$ 59,572.50

Source: Florida Department of Transportation, 2014.

As shown in **Exhibit 5-1**, Trainees receive a salary increase of five percent every six months during the first two years of the program (EIT Program, first phase), and then an annual salary increase of five percent during their third and fourth years (SET Program, second phase), as well as upon completion of the program.

Per FDOT policy, EIT performance evaluations and salary increases are shown in **Exhibit 5-2**.

EXHIBIT 5-2: EIT PERFORMANCE EVALUATION AND INCREMENTAL INCREASE POLICY

6-Month Evaluations – Incremental Increases

6, 12, and 18 months from when Trainee entered the Program, the Director, as appropriate, shall conduct a performance evaluation with the Trainee. The Director shall use trainee rating as a guide to determine the overall conduct, progress, and attitude of the Trainee during the previous six months. This information shall be completed on Form No. 010-000-51, Professional Engineer Training Program Trainee Rating using the evaluation described in Section 4(A). An "unsatisfactory" six-month evaluation shall warrant specific action, as defined in Sections 9 or 14 (A). If a six-month overall trainee evaluation is "satisfactory," the Trainee is eligible for a five percent incremental salary increase. All incremental salary increases are subject to budget and rate availability. The effective date shall be within one pay period from the six-month evaluation date. Incremental salary increases shall not be granted without signature authorization from the Director as required on the Trainee Rating. Such increases will be processed as an approved pay increase, in accordance with Training Schedule. Trainees are not eligible for superior proficiency increases; however, they are entitled to any legislatively mandated salary adjustment. The six-month trainee evaluations shall become a permanent part of Trainee's personnel file.

Source: Florida Department of Transportation, 2014.

Trainees must complete and pass four examinations administered during different phases of their training in order to complete the P.E. Training Program and qualify as a Civil Engineering Professional.

As shown in **Exhibit 5-3**, other similar civil engineer training programs offered in other southeastern states vary in length. In comparison, FDOT’s P.E. Training Program is the longest at 48 months.

EXHIBIT 5-3: ENGINEER TRAINING PROGRAMS IN SOUTHEASTERN STATES

STATE	PROGRAM NAME	PROGRAM LENGTH
Florida	Professional Engineer Training Program	48 months
Virginia	Core Development Program	24 months
West Virginia	Engineer-In-Training Program	24 months
North Carolina	Transportation Engineering Associates Program	18-24 months
Alabama	Professional Civil Engineer Trainee Program	12-24 months
Kentucky	Engineer-In-Training Program	12-24 months
Tennessee	Graduate Transportation Associates Program	12 months
South Carolina	No program offered. ¹	N/A
Mississippi	No program offered. ²	N/A
Arkansas	No program offered. ³	N/A

Sources: Florida, Virginia, West Virginia, North Carolina, Alabama, Kentucky, Tennessee, South Carolina, Mississippi, and Arkansas Departments of Transportation, 2014. Data was requested from Georgia’s Department of Transportation, but no response received.

¹SC had two different programs in the past; one was a six-month program offered at the central office, and the other was a six-month program offered in the field. The programs were discontinued because managers would lose their new hires for a year for training, and then the trainees would usually leave the unit once the program finished and they were promoted. An e-learning module was attempted, but did not get much traction.

²MS DOT offers courses in management and leadership, but no courses specific to engineering.

³AR DOT offers paid internships to students enrolled at local universities.

Exhibit 5-4 provides a sample of available training pay schedules for other southeastern state transportation departments, Tennessee and North Carolina. Tennessee’s Department of Transportation provides a five percent increase for trainees with a Master’s level versus a Bachelor’s level education. North Carolina’s Department of Transportation offers two percent incremental increases during their training program.

EXHIBIT 5-4: SAMPLE TRAINING PROGRAM PAY SCHEDULES, TN AND NC

TENNESSEE TRAINING PAY SCHEDULE¹	
LEVEL	PAY
Hired with a Bachelor's in Science	\$ 42,600
Hired with a Bachelor's in Science and Engineer-In-Training	\$ 44,736
Hired with a Master's in Science	\$ 44,736
Hired with a Master's in Science and Engineer-In-Training	\$ 46,968
NORTH CAROLINA TRAINING PAY SCHEDULE²	
LEVEL	PAY
Starting salary	\$ 46,510
3 months	\$ 47,663
6 months	\$ 48,845
9 months	\$ 50,056
12 months	\$ 51,151
15 months	\$ 52,429
18 months	\$ 53,728

Sources: North Carolina and Tennessee Departments of Transportation, 2014.

¹ TN DOT provides a five percent pay raise to trainees at the end of the program.

² In the NC DOT program, new bachelor's graduates are hired into the training program and rotate around various divisions for 18 months, at which point they are assigned to one. Salary adjustments are based on time in the program and strong evaluations.

In addition to reviewing the available trainee salary data of other southeastern states offering similar P.E. training programs, MGT also reviewed national salary data for recent Civil Engineering graduates, as this is the pool from which FDOT is most likely to draw P.E. Training program candidates. **Exhibit 5-5** presents the low, high, and average starting salaries offered to Civil Engineering graduates nationwide by degree level.

EXHIBIT 5-5: SALARIES OFFERED TO CIVIL ENGINEERING GRADUATES

CIVIL ENGINEERING DEGREE LEVEL	NUMBER OF OFFERS	LOW	HIGH	AVERAGE
Bachelor's	63	\$ 36,240	\$ 82,944	\$ 58,260
Master's	20	\$ 42,996	\$ 91,200	\$ 62,916
Doctorate	3	\$ 54,000	\$ 78,000	\$ 68,664

Source: 2013-2014 Annual Salary Survey, National Association of Colleges and Employers. Note: The January 2014 Salary Survey issue contains employer-based data from approximately 400,000 employers; gathered from government and other sources, the data include actual starting salaries, not offers.

MGT also compared the salaries of FDOT P.E. Training program participants to external transportation industry salary survey data sources (as identified in **Chapter 2.0**). These data are displayed in **Exhibits 5-6** and **5-7**.

Exhibit 5-6 presents the actual average salaries for Transportation Engineer-in-Training (1st in series) positions for Florida and the southeastern states identified in previous **Exhibit 5-3**. As defined in the American Association of State Highway and Transportation Officials (AASHTO) salary survey data source, a Transportation Engineer-in-Training (1st in series) position requires a Bachelor's Degree in Engineering, but no previous engineering experience. This position *"performs introductory engineering work assignments under the direct supervision of a licensed Professional Engineer [and] learns to apply engineering techniques, procedures, and criteria within rules, regulations, and operating procedures."* As shown, Florida falls below the average actual salary of \$45,406 of other southeastern states included in this exhibit for this position category.

EXHIBIT 5-6: ACTUAL AVERAGE SALARIES OF ENGINEER-IN-TRAINING POSITIONS BY STATE, 2013

STATE	ACTUAL AVERAGE
Virginia	\$ 53,200
Alabama	\$ 49,861
Tennessee	\$ 46,470
Louisiana	\$ 46,222
Florida	\$ 44,754
West Virginia	\$ 44,581
North Carolina	\$ 43,643
Kentucky	\$ 33,865
Average (excludes Florida):	\$ 45,406

Source: 2013 Salary Survey, American Association of State Highway and Transportation Officials (AASHTO).

Exhibit 5-7 shows the national salary figures for Engineers-In-Training and Engineer Interns.

EXHIBIT 5-7: SALARIES FOR ENGINEERS IN TRAINING / ENGINEER INTERNS

ENGINEER CATEGORY	NATIONAL SALARY FIGURES					
	AVERAGE	10TH PERCENTILE	25TH PERCENTILE	MEDIAN	75TH PERCENTILE	90TH PERCENTILE
Engineer-In-Training / Engineer Intern	\$ 68,764	\$ 45,000	\$ 53,000	\$ 60,320	\$ 74,990	\$ 90,001

Source: 2013 Engineering Income Salary Survey, National Society of Professional Engineers (NSPE).

Exhibit 5-8 shows national salary figures for civil engineers as reported by the annual National Society of Professional Engineers (NSPE) salary survey.

EXHIBIT 5-8: NATIONAL SALARY FIGURES FOR CIVIL ENGINEERS

ENGINEER CATEGORY	NATIONAL SALARY FIGURES					
	AVERAGE	10TH PERCENTILE	25TH PERCENTILE	MEDIAN	75TH PERCENTILE	90TH PERCENTILE
Civil Engineers (all types)	\$ 93,007	\$ 56,000	\$ 67,200	\$ 82,000	\$ 106,655	\$ 149,000

Source: 2013 Engineering Income Salary Survey, National Society of Professional Engineers (NSPE). N = 417.

Exhibit 5-9 shows salary figures for engineers (all types) as reported by the annual NSPE salary survey for southeast states, categorized into two areas: middle southeast and lower southeast.

EXHIBIT 5-9: SALARY FIGURES FOR ENGINEERS IN SOUTHEASTERN STATES

ENGINEER CATEGORY	NATIONAL SALARY FIGURES					
	AVERAGE	10TH PERCENTILE	25TH PERCENTILE	MEDIAN	75TH PERCENTILE	90TH PERCENTILE
Middle Southeast	\$ 101,978	\$ 61,000	\$ 72,000	\$ 90,054	\$ 112,500	\$ 151,645
Lower Southeast	\$ 97,167	\$ 57,900	\$ 68,100	\$ 90,505	\$ 120,000	\$ 140,000

Source: 2013 Engineering Income Salary Survey, National Society of Professional Engineers (NSPE). Note: Includes all engineer types. Middle southeast states include West Virginia, Kentucky, Virginia, Tennessee, North Carolina, and South Carolina; lower southeast states include Georgia, Florida, Alabama, and Mississippi. N = 417.