

# **Engineering Technicians – Technician, Associate, Senior, Specialist, Land Surveyor Occupational Group**

## **Overview of Findings**

In the Engineering Technician (ET) Occupational Group, the Associates, Technicians, Senior, Specialist, and Land Surveyor roles have different levels of complexity in their work assignments which are influenced by their agency's needs, usage of the class series, and organizational structure. An employee in one agency may be classified at the lowest level in a class series while an employee in the same class series in another agency may be classified at a higher level of the series while doing the same level of work. Depending on agency, the ET's has a set progression when it comes to promotion. ET's have several specialties they can go into: perform material and soil testing in a field or laboratory setting, i.e. concrete and steel, asphalt, aggregates, bituminous, payments, etc. ET's can also do field monitoring and inspection of major structures, i.e. bridges, culverts, head walls, retaining walls, barriers, rails, and reinforcing steel. There are other ET's whose duties involve using AutoCad. They draw useable areas, graphics, and special projects that come up. The higher levels may require certification and they may or may not supervise, and lead a project.

## **Distinction Between the different Engineering Technicians**

An ET Associate is considered a training class. A driver's license and HS Diploma are required for hire. They have a minimum of 1 year before they can test out to move up to ET Technician. ET Technicians have a little more experience and abilities than Associates. They are considered to be a lead-type worker and must have 3 years at a minimum before moving up to ET Senior. ET Seniors have considerably more abilities and experience than ET Technicians but is still considered a lead type worker who, on occasion, may supervise & sign off on evaluations as well. Depending on the agency the ET Senior may supervise outside contractors and be a project manager of some sort. ET Specialist is a higher level ET Senior; they manage bigger projects than seniors and have more responsibilities. They are still considered a lead type worker.

## **Distinction Between the different Land Surveyors**

The distinctions between Land Surveyor I (LS-I) and Land Surveyor II (LS-II) depends on what agency they belong to. They both supervise with the LS-I supervising up to 5 people while LS-II's can supervise up to 28. They both work statewide and are assigned in groups of 4 – 5 per team. Other than the number of people supervised, both LS-I and LS-2 share similar work making it more difficult to distinguish the levels of work between them. However the similarities, both find that they need a training class for people being to be hired without a license.

## **Minimum Qualifications**

Most of the participants agreed that the current minimum qualifications are required. Some of the reoccurring comments from the participants are as follows:

- Some experience in a discipline are would be helpful.
- Continue with the Training class even if most of the work is learned on the job,
- Trainee class should be considered for hire w/out a license

## **Full Performance**

### **Amount of Time to Reach Full Performance**

Participants indicated that it takes anywhere from one year to two years to reach full performance. The distinction between an entry-level ET Technicians and the ET Senior or Specialist primarily based on certification, time, and the experience acquired through on the job training. The time periods are more defined due to specific testing and licensure requirements of the classification. However, some Associate positions are required to complete specific certification or training requirements before being able to move to higher level ET or LS classification.

Some participants have indicated that the length of time to reach Full Performance may be dependent on cyclical or seasonal issues, depending on the agency.

### **Type of Supervision Received**

The higher level ET's generally receive limited supervision but the lower class ET's receive a little more supervision. The same is true for the LS's. While supervision is limited, employees generally do not have authority to make independent decisions outside of standard operating procedures or guidelines. As one becomes advanced or seen as a expert in their processes, employees are given more independent judgment to act on their own discretion requiring the use of technical knowledge to resolve problems. Supervision exists to provide general direction and guidelines, review judgments made by employees, and clarify standards, policies and procedures that are normally seen as the day-to-day work activities of a supervisor. Additional, specific instructions are given for new, difficult, or unusual assignments.

**What Criteria Should Compensation be Based?** The participants seem to be in consensus that performance and skill set is the top tier for basing pay. Seniority plays a factor only if the employee is performing to standards. They also mentioned being paid proportionally in reference to their counterparts outside of state government or whatever the fair market value of their respective positions are. Participants also noted that they should be paid for working a full-time travel status basis and that something should be done on the very low shift-differential rates they are getting now. The issue of pay equity was brought up by some of the participants. The concern was that someone with 15 years in an agency is making the same if not less than a new hire.

# Occupational Survey Summary: Engineering Technicians and Surveyor

## Participation Rate: 67%

### SUMMARY BY ROLES

	<b>Engineering Technicians</b>	<b>Land Surveyor</b>
<u>Participation Rate:</u>	382 out of 572 total ET's responded to the survey.	The population is too small to do analysis on. There are currently 17 filled positions
<u>Time Worked in Occupation:</u>	About 16% of the employees in this field have 1-3 years work experience; 26.8% have five or more years; and 37.3 % have ten or more years.	
<u>Work Experience</u>	Most positions at entry will have some skill, knowledge, and up to 2 years of work experience, and needs a HS Diploma.	
<u>Behavioral:</u> <b>(Core)</b>	<ol style="list-style-type: none"> <li>1. Working with Computers</li> <li>2. Communications</li> <li>3. Processing Information</li> <li>4. Coordinating Work</li> </ol>	
<u>Work Context:</u> (Every Day)	<ol style="list-style-type: none"> <li>1. Contact with Others</li> <li>2. Face to face Discussions</li> <li>3. Work in teams</li> <li>4. Decisions w/out supervision</li> <li>5. Prioritize tasks or goals</li> </ol>	
<u>Level of Complexity:</u> (Level 4 or Higher)	37% - Level 2 - You gather and analyze information to determine the best course of action, based on general guidelines or rules of operations. Your judgment to choose alternatives, many of w/c may be correct, but one is better than another depending on situations.	

<p><u>Supervision Received/Independence:</u> (Level 4 or Higher)</p>	<p>39.7% - Level 2+ - Receive limited supervision and the work requires employees to use independent judgment or act on their own discretion. Requires the use of initiative and creativity to resolve problems or interpret policy to develop solutions. A manager may be available to provide general direction or advice, but employees usually act independently based on their own judgment.</p>	
<p><u>Supervision Given:</u></p>	<p>No responsibility of supervision 39%; gives supervision 41%. Response generally has equal distribution between not having any supervisor responsibility; supervising others who perform essentially the same work, supervising others and where one's time is spent in supervisory tasks, and managing others</p>	
<p><u>Decision Making:</u></p>	<ol style="list-style-type: none"> <li>1. 47.2% - Decisions may affect a work unit or area within a department/division. May contribute to business and operational decisions that affect the department/division.</li> <li>2. 25%- Decisions have major implications on the management and operations of an area within a department/division. Job may contribute to important strategy, operational and business decisions that affect the</li> </ol>	

	department/division.	
<u>Problem Solving:</u>	<ol style="list-style-type: none"> <li>1. 71% - Problems are varied, requiring analysis or interpretation of the situation. Problems are solved using knowledge and skills, general precedents and practices.</li> <li>2. 13% - Problems are highly varied, complex and often non-recurring, requiring novel and creative approaches to resolution. New concepts and approaches may have to be developed.</li> </ol>	
<u>Fiscal Responsibility:</u>	Only 63.3% has no budget responsibility and 28.5% assists in planning monitoring, and/or managing budget in functional area of a program	