5 – Stage Model to Attract and Retain Employees for Public Works and Road & Bridge Departments for Texas Cities and Counties

Recruiting and Selecting

Succession Planning

Onboarding

Retained Engaged Employee

Engagement and Evaluation

Training and Development

SKILL GAP

Performance Planning
Communicate criteria and expectations

Performance Feedback
Continuous activity from performance plan to appraisal

Development
Continuous actions to promote effectiveness

Appraisal/Evaluation
Determine what happened during the last performance period and set expectations for the next period

Indentify Key Positions

Maintain Skills Review & Adapt

Build Job Profiles

Succession Planing

Create Individual Plans

Assess Current Staff Skill Level

Training Actitives

6 Stages of Onboarding

Pre-Boarding	Day 1	1st Week	1st Month	3rd Month	6th Month
• Preparation for new employee	• New employee orientation	• Introduction to organization, people and tasks	• On-the-job training and education	• Check in and feedback	• Check in and feedback

Version Date: January 2024

TABLE OF CONTENTS

PURPOSE OF THIS PROJECT

This special project was awarded to The University of Texas at Arlington (UTA) Division for Enterprise Development's, Texas Local Technical Assistance Program (TxLTAP) under a Federal Highway Administration (FHWA) and Texas State Transportation Innovation Council (STIC) grant to develop and distribute innovations in workforce development for Local Public Agencies (LPAs) across the state of Texas.

The focus of this project is to assist cities and counties in the ongoing process of attracting, onboarding, training, engaging, and providing succession planning for their Public Works and Road and Bridge personnel as much as possible.

Numerous resources have been used to develop the tools that are made available to you. The main objective of this project is to provide tools that will provide:

- Proven approaches to recruiting employees into a public sector job.
- Onboarding strategies and processes recommended for cities and counties bringing on new hires for higher retention rates.
- Training course resources recommended for new hires regardless of job classification.
- Training courses recommended for Public Works/Road and Bridge personnel.
- How to tie training, job descriptions, and employee performance plans together for continuous employee engagement.
- Employee engagement tools and strategies include personal and professional development, coaching, mentoring, and employee recognition programs.
- Providing guidance on which tools may work best depending on the size of your organization.
- All tools will be downloadable from the TxLTAP website so you can edit and make the tools your own.
- On-site consultation time to work with you in determining how to set up and use the How to Attract and Retain Employees: 5-Stage Model at no cost to your city or county.

Our special thanks to the following personnel who have taken time from their regular job duties to review and provide input on the *Guide* and resources. This project was only possible with their expertise and guidance to help all our municipalities and counties in Texas.

Lori Ardoin – Orange County
Tania Rushing – Wichita County
Baby Raley – City of Richardson
Kevin Godley – Bexar County
David Sanchez – City of Amarillo
Haley Smithson – Wichita County
Dana McWilliams – Ector County
Don Spear – City of Dallas
Kelly Rodriguez – City of Killeen, Texas Municipal League Trustee
Amanda Lehde – North Texas Tollway Authority
Angela Carrizales – Texas Department of Transportation

USE OF THIS *GUIDE*

This *Guide* has been developed as a hard copy reference tool for use by County Judges, County Commissioners, City/County Engineers, City/County Road Administrators, City/County Human Resource Officers, City Managers, City/County Classification, Public Works Directors, Supervisors and Managers, and any other personnel involved in the recruiting, development, and retention of Public Works and Road and Bridge personnel.

You may copy and redistribute the information in this *Guide* as it is provided as a no-cost resource to be used by LPAs in the state of Texas.

The *Guide* and Attachments in this handbook are available on UTA-DED's TxLTAP website under Library > 5 Stage Model at https://txltap.org and may be downloaded in editable Word or PDF format.

You may also contact TxLTAP for the templates and to answer any questions about the resources and technical assistance that can be provided at no cost to your city or county.

Texas Local Technical Assistance Program (TxLTAP)
TxLTAP@uta.edu
817.272.9678
817.272.9617

Again, the University of Texas at Arlington Division for Enterprise Development's Texas Local Technical Assistance Program provides high-quality training, on-site technical assistance, and workforce development programs at no cost to your organization.

Contact us today to let us help you!

Public agencies often refrain from implementing employee development or engagement programs for various reasons. Here, we look at more prevalent facts, myths, and frequently asked questions regarding employee development programs.

FACTS

Fact: Your organization competes with the private sector and many other public sector organizations to attract and retain the best employees possible.

Fact: Whether you are a metro, urban or rural city, or county, you will have employee turnover. Your high turnover rate depends on the programs and practices you have in place today. The fewer practices you have to address turnover, the higher your turnover will be.

Fact: You have direct and indirect costs that can reach 200% to replace employees who leave you.
> **Direct costs stem from**:
- Recruiting replacement of the worker. Hiring new employees is costly. Some charges are background checks, physical and drug testing costs, and your organization's time on the processes.
- Advertising. It costs money to post job ads online and other advertising costs.
- Onboarding. Providing new employees access to onboarding documentation, equipment, paperwork, and benefits packages adds up, as well as access to company resources.
- Time to interview and assess candidates. The number of hours you and others spend reviewing resumes, preparing and conducting interviews, and choosing a replacement.
- Time for training new employees. It takes time to train and coach new employees. These hours can add up quickly.

> **Indirect costs stem from:**
- Knowledge loss. With every employee that leaves, a certain amount of essential knowledge and expertise walks out the door with them.
- Productivity decline. Employees leaving a job tend to produce less once they decide to go. A production loss will also occur as the new hire employee learns their new job.
- Lost motivation. Employees can be challenged to stay motivated with high turnover in your organization.
- Morale. High turnover can hurt morale. Employees may feel they are "on a sinking ship." More pressure can be put on those who stay and must pick up the slack.

Fact: 94% of employees said they would stay with their company longer if it invested in learning and development. Source: (LinkedIn Learning Report, 2020)

Fact: According to a survey by Future of Work 2022 | Monster.com, many organizations are suffering from a "skill gap" in their existing workforce, or they do not have the employees onboard to perform all of the essential jobs required of the organization. The survey found that almost one-third of employers agree that the skills gap has increased from the previous year. This contributes to the problems with hiring qualified candidates, as 87% of employers report trouble finding qualified talent.

Fact: Clear onboarding processes improve retention rates by 23%. Source: Employee Retention

Statistics: A 2022 Overview | TeamStage

Fact: Companies that create a strong onboarding program are 50% more likely to produce productive employees. Society for Human Resources Management Survey

Fact: Higher early attrition rates are a result of 88% of organizations onboarding their employees inefficiently. Top 100 Hiring Statistics for 2022 (linkedin.com)

Fact: Inadequate employee training accounts for 40% of resignations. Source: TeamStage Employee Retention Statistics: A 2022 Overview | TeamStage

Fact: About one-third of employees resign within the first six months. Employee retention statistics in 2022 showed that of 1,000 employees, 31% quit their jobs within six months from their hire date. Employees listed onboarding experience and unclear job expectations as one of the top reasons for their resignation. Source: TeamStage Employee Retention Statistics: A 2022 Overview | TeamStage

Fact: Well-written Job Descriptions (JDs) help new employees understand their jobs, set them up for success, and be highly contributing employees to your organization. The JD, along with coaching and mentoring from their manager, helps set job performance expectations for the employee to achieve. How JDs are integrated into the Retention Plan is covered in detail.

Fact: Well-written JDs incorporated into a Performance Plan and Performance Evaluation help managers provide meaningful feedback to their employees on how they are doing and where they can improve. With a good Performance Plan and JD, it becomes easier for employees to know what is expected and for a manager to appraise them accurately and effectively.

The following facts are from the 2022 Department of Labor Statistics based on surveys of more than 100,000 employers and employees who have changed jobs within the last two years.

Fact: The top reason that employees leave is lack of opportunity.

Fact: One-quarter of employers admitted they did not provide employees the opportunity to grow.

Fact: One-third of employees do what they are best at or trained to do.

Fact: Fifty-seven percent of workers are open to new job opportunities.

Fact: Half of the employees who changed jobs did so because they felt they were undervalued and unappreciated at their jobs.

Fact: Half of the employees who left felt their manager could have done something different that would have caused them to stay.

If any of these facts apply to your organization and you have experienced high turnover rates, look at the tools, training, and other resources this project can bring to your organization to help retain your employees.

MYTHS

Myth: We don't need a retention program; lots of people want a city or county job.
Reality: A successful retention plan can decrease employee points of separation or attrition by engaging and motivating employees for the long term. Your organization's goals are critical to a successful employee retention strategy. Some of the elements of a sound strategy include:

- Salary and benefits that are in alignment with the local area.
- A transparent onboarding process.
- Support a work-life balance.
- Productive leadership.
- A culture of open communication.
- Employee engagement.

Source: TeamStage Employee Retention Statistics: A 2022 Overview | TeamStage

Myth: Implementing a Workforce Retention Plan sounds like a lot of work, and I don't have the time to mess with it.
Reality: The real question is, how much time and work production are you losing right now by not having a full staff? Implementing a plan takes time and effort, but it will pay for itself in terms of reduced re-work, increased productivity, and not tied to a constant hiring cycle.

Myth: I have heard that other organizations tried a program like this, which failed. I don't want to start something and invest a lot of time only to see it fall flat on its face.
Reality: Any program dealing with workforce development, retention, training, etc., is only as successful as its leaders and management make it. If you want to be a proactive organization rather than a reactive one, investing time and effort into a retention program will pay off in the short and long term.

Myth: If we adopt this model and training plans are put in place, as a supervisor, it puts my employees and me in a box, not having any flexibility in how I develop and train them.

Reality: Not so. The TxLTAP retention and training plans provided to you are based on your needs, not a "one size fits all" approach. You have the flexibility to change things around as needed.

Myth: I have heard that mentoring is complicated and does not benefit employees or the organization.
Reality: Mentoring is very easy. We cover mentoring in detail under Employee Engagement. The more you put into it, the better the outcomes will be.

Myth: I will train my employees when they need it so they can recall it and use it.
Reality: If they don't use it, they will lose it. Allow employees to use the skills they learn in a training class as soon as possible. For example, suppose you send an employee to an excavator class and invest 32 hours in their training but do not let them operate the excavator until much later. In that case, the skills they learned are severely degraded.

FREQUENTLY ASKED QUESTIONS

Q: Why does this project help counties with processes to retain and develop employees?
A: This project has a focused scope of work related to jobs aligned with a county or municipality's Public Works and Road & Bridge positions. However, this project's tools, information, and resources can be used for almost any business unit in your organization. This scope of work relates to the charter and funding under which the project operates. It is funded by a Federal Highway Administration Incentive Award and sanctioned through the Texas State Transportation Innovation Council. Work on this project is related to transportation-oriented positions, such as those typical in Public Works or a Road & Bridge department.

Q: What other assistance can I get under this project regarding how to use this information?
A: Provisions in this project are available for a Human Resources professional consultant to come on-site and help your HR personnel, administrators, commissioners, and managers (you decide whom to bring to the table) to discuss and customize plans for your organization – all at **NO CHARGE**!

Q: I need to learn how to implement a Workforce Retention Plan; where can I get help?
A: This project will give your organization a "jump start" to implement a Workforce Retention Plan with the developed tools. TxLTAP stands ready to provide a consultant to come onsite and help you.

Q: How much detail needs to be in a Workforce Retention Plan?
A: As much as you desire. This project has identified five critical phases in the lifecycle of an employee. You can decide whether to use all the different stages or eliminate some of them. You can expand the tools and information at any stage, or you may choose to scale it down. It's your program; you are the ultimate decision-maker.

Q: How much time and effort will creating and maintaining a Workforce Retention Plan take?
A: Another way to put it is how much time do you have to defend a wrongful termination lawsuit, an EEOC complaint, or a Worker's Compensation Claim because of a lack of a good retention plan that has critical components such as Job Descriptions, Performance Plans, and close out those plans? Using the tools and resources created for you provides a head start to develop and implement a good retention plan.

Q: If we adopt a Workforce Retention Plan for our employees, who should be responsible for reviewing, monitoring, and maintaining it?
A: If your city or county has a Human Resources Officer (HRO) or HR department, that would be the logical place to start. HR will routinely work with commissioners or managers to ensure they receive the required documentation for the employee file. In the absence of an HRO or HR department, it is recommended that a business unit in your organization with some HR experience handle the program's logistics. Again, if you need help setting up the program and training a person to administer the program, a TxLTAP Consultant can provide on-site assistance with such a request.

Q: Once a Workforce Retention Plan has been set up, can we change it?
A: Yes. As business functions change within any organization, the plan should be capable of changing if needed.

Q: Are we required by federal or state law to have a Workforce Retention Plan?
A: No. With a plan in place, you can avoid exposing your organization to risks and challenges previously identified.

When the day comes that you look to start developing and implementing the 5-Stage Plan to Attract and retain employees or any other type of workforce plan, it's important that you take certain steps to prepare yourself, your department, and the organization to ensure success.

Do not disillusion yourself after reading this Guide that you have the desire and drive to implement all stages as soon as possible. Forcing a complex program such as the 5-Stage model on a highly accelerated schedule will frustrate the workforce, other stakeholders, and, ultimately, you.

Thoughtful planning, active engagement of key stakeholders, and a realistic and clearly defined plan and implementation schedule are critical to making your program successful.

Attachment D: Workforce Strategy, Planning, and Alignment is offered if you are interested in how to plan, develop, implement, and align not only a Workforce Development Plan but almost any strategic program for your city or county.

Major topic areas covered in Attachment D include:
- Overview and Making the Case for Developing a Workforce Strategy
- What is _Strategic_ Workforce Planning?
- What is Workforce Planning?
- How Do We Develop a Workforce Plan?
- How do We Align Our Workforce Plan with Other Business Units?
- A Workforce Planning Example for Public Works or Road and Bridge Organizations

Public Sector Hiring Challenges

As all of us have experienced, hiring good-quality employees is becoming increasingly difficult. There was a time when an extensive talent pool was available from which to choose. That pool has grown smaller due to more people retiring from the workforce, competition from the private sector with increasing salaries that are difficult to match with public wages, and a segment of the workforce no longer interested in government work. Internally, decreased budgets, or budgets competing for salaried positions versus material needs, facilities, and public assistance programs, all impact positions funded by Local Public Agencies (LPAs).

A new recruitment challenge for the public sector comes from remote work during the COVID-19 pandemic. Many organizations in the private sector have begun offering permanent remote and hybrid work options for their workforce. Public sector organizations will face recruiting challenges if they do not provide similar flexible work options. Thinking "outside the box" for office staff or field operations scheduling can help relieve recruitment challenges such as condensing work schedules, offering earlier or later work schedules, offering off every other Friday or Monday, etc. Employees are seeking more of a work-life balance.

It's understood that remote and flexible working hours cannot apply to all jobs in the public sector, such as those in Public Works/Road & Bridge departments. However, offering employees remote or flexible hours in other positions in the city or county can also benefit the public by providing extended service availability.

Leveling the Playing Field: Strategies for Hiring Public Sector Employees

Despite the challenges we face in the public sector, there are still several effective recruiting strategies that LPAs can use. By understanding our unique challenges and implementing an effective recruiting strategy for your organization, LPAs can continue attracting good employees.

Sometimes, cities or counties that are rural or smaller municipalities have the mindset that because we do not have a large population, we are stuck with what we get for applicants, so why bother to make any effort to attract suitable applicants? If you make no effort, you will continue to get what is locally available, but if you look at some of the ideas and resources made available to you in this model, you can attract new talent.

Let's look at some strategies you can use today without much effort to get the employees you want. For each strategy, references are listed that you may wish to consider for your organization. It does not mean you have to try that strategy; they are suggestions for consideration depending on whether you are a metro, urban, or rural organization.

Benefits
There are numerous benefits that LPAs can offer, and some that the private industry cannot match. Among them are:

Medical: Have literature on hand to provide applicants with what your medical covers regarding cost for premiums, copays, and dates coverage begins.

Optional Coverages: Have literature about dental, eyecare, life insurance, disability, and any other optional coverages you offer, plus costs, copays, and coverage amounts.

Retirement: Most full-time governmental employees receive competitive retirement benefits as these organizations contribute money to a structured retirement plan, the public sector version of a 401K. Have literature on hand that details the program your organization offers, such as when they are vested, the amount of their contributions, and when they are retiring and begin drawing a monthly pension payment. Telling a potential candidate for a job about your retirement plan is an excellent point to make during the initial contact. But remember, the candidate is taking in a lot of information right now, but they need to remember critical details later. Having a brochure in their hand to look at makes all the difference that they consider your organization as an employer.

Paid Leave: Employer paid leave is an excellent tool to emphasize as one of your key recruiting tools. Layout the different types of paid leave programs, whether a Paid Time Off (PTO) structure allows for any leave out of a single pool or separate sick and vacation pools. Also, cover compensatory time or overtime and how your organizations handle it, such as banking the leave to be taken later or paid at the occurrence.

Paid Holidays:
Be sure to include information about paid holidays and that they are in addition to paid time off. Many private sector employers grant very few, if any, paid holidays in addition to PTO.

Other Paid Leave:
Some organizations offer other paid leave for special or unique events. Some examples are:
- Paid Leave Award. Awarded at the supervisor's discretion to award up to a certain number of hours to employees for exceptional work well done, approved at a higher level.
- Jury duty.
- Blood donation.
- Voting.
- Recovery time as an organ donor.
- Court proceedings to adopt a child.
- Community service.

Training and Development:
Many organizations say they will provide training for their employees but do not place a value on how much time they are willing to invest in each employee. This information needs to be included in your recruitment information.

Time is money. Training takes time. The employee is on the clock when they take training, so a monetary value should be placed on it.

Have training matrices developed and on hand when discussing the topics on which your employee will be trained. The following is an example of the training delivered for Equipment Operators at a specific county in Texas. This snapshot shows only the first year of training. It is a four-year training program, so employees know they will continuously engage in training and developmental activities, not just a quick one-time event.

Time Silo 1 Day 1 - 12 months Equipment Operator I, II & III
95 hours Safety & Traffic = 32 hrs. Personal Development & Communications - 3 hrs. Core Skills = 60 hrs.
Safety & Traffic
LTP411 Public Works Safety Overview (4 hrs.)
LTP401 Work Zone Construction Site Safety (12 hrs.)
LTP300 Flagger Training (4 hrs.)
WKZ100 Work Zone Safety Temporary Traffic Control (4 hrs.)
EXC201 Excavation Safety (8 hrs.)
Personal Development and Communications
TC3ED001-15-T1 Ethics Awareness for the Transportation Industry (3 hrs.)
Core Skills
LTP110 Equipment Preventive Maintenance (8 hrs.)
QLF100 Equipment Skill Assessment (4 hrs.)
LTP172 Equipment Load & Tie Down (8 hrs.)
LTP120 Asphalt Distributer (32 hrs.)
LTP193 Roller (8 hrs.)
Optional Development (above base hours)
TC3TS001-15-T1 Safety Orientation (2 hrs.)
TC3TS015-16-T1 Bloodborne Pathogens (1 hr.)
TC3CN001-15-T1 Daily Diary Basics (1 hr.)
TC3ED005-19-T1 Math Basics for Maintenance Technicians (1.5 hrs.)
TC3TS002-15-T1 Safe Use of Hand and Power Operated Tools (3 hrs.)

This Workforce Development plan is one of many developed by the University of Texas at Arlington's Division for Enterprise Development through the Texas Local Technical Assistance Program **for no charge**. Call TxLTAP at 817.272.9678 or email us at txltap@uta.edu if you want to set up an onsite consultation to help you develop such a program.

Tuition Reimbursement:
Many organizations have varying levels of tuition reimbursement programs. You are encouraged to develop and implement one if you do not have one. It might surprise you those employees who do want to better themselves. Your program can be structured in many ways. The most common tuition reimbursement programs available include:
• Select courses – the employee does not wish to obtain a degree but wants to take management courses at the local community college to better themselves.
• Degree completion – an employee started college in the past and now wants to finish the degree. It is recommended that a time completion be set on the completion date, such as completed within two or three years. It is also recommended that the degree aligns with a job that the employee could take with your organization that would benefit the organization.
• Degree – whether an Associate, Bachelor, or Graduate degree, it should align with a job classification your organization needs. An example would be a person who wants to obtain a bachelor's in liberal arts with a concentration in Sociology. Your organization may or may not have a job classification employees could enter when their degree is finished.

How you reimburse can be structured in many ways as well. How you structure your reimbursement tier is up to you, but some standard methods are:

• Payment in advance – not recommended unless you have 100% faith in all your employees. If you select this method, you must apply it across the board; otherwise, you could set yourself up for a discrimination lawsuit where you have one plan for select employees and another for others.

- Payment upon completion of the semester/course based on the final grade(s):
    - A = 100% + book costs + campus fees
    - B = 80 % + book costs
    - C = 60%
    - D, F, Incomplete, Drop = no reimbursement
- Maximum annual tuition reimbursement amount – allows the employee to maximize benefits and plan education costs in advance.

Merit Increases:
Not all employees should be paid the same that are classified the same. There are differences in their work product, how much effort they put into their work, and how they interact with others and the public. Those who stand out should be paid more.

If you are an organization that promotes a "pay for production" model versus all being paid the same, make that benefit known to candidates so they know they will not be locked in on a pay scale along with everyone else. If you are a "pay them all the same" organization, you should look at the benefits that a "pay for production" model can bring to your organization.

Longevity Pay:
Many cities and counties already have a longevity pay benefit in place. Many private employers do not; they don't care how long you have been there. Tell potential employees you have such a benefit, how much it pays additionally, and at what intervals.

Wrap It All Up into a 13th Check Scenario
When job seekers look at what an organization offers, they need to consider the value of what the cost of benefits brings to the table. Some public employers call it the 13th check (named from organizations that pay monthly, hence the "13th check). Layout a short scenario shown below on a handout. Add other paid plans that may apply to the position, such as a take-home vehicle, clothing allowance, or clothing service. Provide a sample Total Compensation Report for the recruitment position to promote overall benefits.

Benefit	Monthly Value	Annual Value
Health insurance premiums paid on behalf of the employee	$400	$4,800
Employer-paid contribution towards retirement (6.0% annual salary)	$186	$2,232
Paid time off, 80 hours annual	$120	$1,440
Paid holidays off (varies, but using 10 holidays or 80 hrs)	$120	$1,440
Training attendance, average 80 hours annual	$120	$1,440
TOTALS	$946	$11,352

* All figures are based on an employee making $18.00/hr
* Full time, 2080 hours = $37,440 annual or $3120/month

Attraction Benefits
You can offer benefits to encourage applicants to move to your geographic area so that you may reach beyond your immediate area. Some suggestions are:

Relocation Assistance:
You may wish to pay relocation costs for an employee depending on the job classification and if you want that particular candidate to come to work for your organization.

You can pay up to a certain cap, say $2,500, to encourage strong candidates to go to work for you. It is a good business practice to have a contract with employees that you offer this attraction benefit so that they must remain with the organization for 6 – 12 months, or repayment will be required.

Sign-on bonus (aka incentive):
Many people associate sign-on bonuses with private-sector jobs, but public-sector organizations can (subject to budget) offer them as well. However, public sector employers cannot use the word "bonus." Instead, public employers call these "incentives." If an organization has difficulty attracting employees for a particular skill set, for example, those with a Class A or B CDL, they may wish to offer a $1,000 signing incentive. You want to restrict the signing incentive to ensure your money is well spent. An example would be to pay the $1,000 incentive entirely upon six months of service completion or in two installments of $500 each at three and six months of service completion.

The signing incentive amount should be tied to the difficulty of recruiting employees in targeted job classifications and should not apply to all job classifications across the board.

Flexibility:
Many public sector employers provide different types of flexibility in their employees' work schedules than private sector employers. An example is that the public sector will allow employees to take two hours off to go to a doctor's appointment, whereas the private sector may make them take the entire day off, causing the employee to burn six hours of leave they did not need to use.

Employee Assistance Program (EAP):
Many public sector employers will offer EAP Programs at no charge to their employees. An EAP program can be very beneficial for employees who need counseling from time to time to help with various life issues in a confidential environment. Perhaps they or a family member has a severe or terminal health condition and need advice on coping. Maybe they are struggling with another employee or supervisor and need some guidance. If you have an EAP program, it must be part of your recruiting toolkit.

Clothing Allowance:
Many cities and counties already have a practice to provide clothing for their public works employees. Other employers who do not offer clothing pay a monthly stipend to replace the clothing for their public works employees.

Fuel Offset:
Some employers in the private sector now provide a "fuel offset or bonus" to employees required to drive to work every day. This practice began during the height of the COVID-19 pandemic. While office employees could stay home, saving fuel costs and commute time, those in "essential job" duties, such as public works employees, had to continue to make the daily recruit. Employers paid a fuel bonus to assist with leveling the playing field for those required to come in to work. Some employers are continuing this practice if they have employees who are allowed to commute a couple of days per week to those who cannot by the nature of their jobs.

Personal Protective Equipment (PPE):
You would be surprised to find that many private employers require employees to purchase their own PPE. While many cities and counties already provide PPE, many still need to offer what may be required by law or good common sense. If you have employees who routinely work in loud environments, provide earplugs. It has been noted that many cities and counties do not provide high-visibility clothing for their employees working on the roadways. This has been a law adopted in 2009 in Texas. If you do not provide high-visibility clothing for your road crews, what message are you sending them? It has also been noted that many cities and counties do not provide steel toe or composite toe work boots for their employees. While it is not a legal requirement to do so, common sense should be the driver. Do we not want to help keep our employees safe? What makes more sense, to invest in a $150 pair of steel-toed boots for your employees or pay out a $250,000 settlement for injury on the job that you could have prevented as an employer providing steel-toed boots?

Child Care Assistance:
While it is difficult for a public sector employer to provide a childcare facility and program, it can assist its employees who need such services. Some employers will subsidize their employees who need childcare or offer referral services for them when they have unique needs. Adding such a benefit to your program may make a difference in the candidates you attract.

Work-Life Balance:
Many public sectors have programs that started in the private sector and are presented under various names, but all boil down to your health, life, and work life. They need to be balanced.

An experience that many Baby Boomers can relate to: they were told to give it all to the organization, that they did not have a personal life, and that the company came first. Those attitudes and practices have evolved. The younger generations, especially the Millennials and Gen Z, look for organizations that actively promote a work-life balance. If your organization has programs that address this issue, make it a part of your recruitment strategy.

Having a Clear Mission:
Younger generations, such as public sector employers, seek organizations with clear missions, goals, and purposes. Many Millennial and Gen Z professionals list it as one of their top considerations, and the public sector often does well at creating clear and compelling missions. You can attract these generations by connecting the work they will do (purpose) with that mission.

Retention Bonus (aka Incentive):
Suppose you have a warning or signal that a highly experienced and regarded employee is considering leaving your organization or has given notice. In that case, you should have a strategy that makes an offer to retain them. Retention incentives should be used in hard-to-recruit and retain job positions. It is recommended that they be used sparingly and handled confidentially as possible.

For example, an organization with several Professional Engineers (P.E.) on its staff learns that one of their P.E.s has given a two-week notice. Hiring P.E.s with the credentials and experience you need is not easy. Although you may need to pay out a sum you find challenging to retain the P.E., it is more cost-efficient overall to pay the retention incentive versus the lost production and costs to rehire a replacement.

Presenting a Positive and Safe Work Environment:
Emphasizing a safe or positive work environment is critical in attracting and retaining top talent. This creates a professional and supportive environment for the public sector. You can achieve this by providing clear employee expectations and guidelines, specifying each position's duties, and outlining the expectations for behavior and performance. We will touch on Job Descriptions and Performance Plans in other Stages, but now is where you start that conversation.

Safety is not to be overlooked. We will touch on safety in Stage 2, Onboarding, and Stage 3, Training and Development. As part of the recruiting process, candidates should know what safety programs you have in place and your track record (if it's one you are proud of). Providing the number of accident-free injuries and other statistics is helpful to candidates looking at your organization. This could be the deciding factor in a job decision.

Diverse Work Environment:
All employers say they do not discriminate based on sex, religion, national origin, etc. because it's mandatory and the right thing to do.

Not all private sector employers can say they have a diverse workforce with the skill levels and experience that others already on the job bring to make the workplace a proper learning environment. As part of your recruiting strategy, highlight the diversity in place and how candidates can benefit from that diversity.

Job Security:
According to the Bureau of Labor Statistics, private-sector workers are three times more likely to lose their jobs than public-sector employees. It should be pointed out to applicants that public sector employment brings job security and a steady income.

Strategic Hiring Tips and Processes

The following provides some of the best advice guidelines from the private sector that you can use in the public sector to attract and hire employees. Some of these advice tips may not fit your organization's size, which is OK. Consider these tips and processes as you formulate your recruiting and hiring strategies.

Assess Applicants for Key Characteristics:
When hiring, consider applicants for crucial characteristics. Many qualified candidates might not be interested in government work. Ask questions about their motivation for applying. Those candidates who express a genuine interest in the job are more likely to be successful in the role and less likely to leave early.

Assess Candidates for Cultural Fit:
Consider whether a candidate is a cultural fit when hiring. Having a good cultural fit is essential for employees to work well together. By assessing candidates for cultural fit, ask questions about values and how they would approach various situations.

Improve the Quality of Your Employees:
The public sector often faces a stagnant budget for employee salaries. This can lead to a decrease in the quality of public sector employees. You can improve your candidate quality pool by using new processes, up-to-date literature, new technologies for job postings, etc. This drives more applicants

and allows for a more diverse applicant pool. If you settle for hiring "just a warm body" to fill a position, you will never improve the overall quality of your workforce.

Invest in Technology and Develop an Automated Process:
Some public sector employers in Texas need to hire on a large-scale volume continuously. Being able to identify large numbers of suitable candidates quickly requires automation. Such automation brings tools and technology for fast processes that quickly get a pool of candidates into the hands of a hiring supervisor.

Public sector hiring supervisors working in a paper-based environment often call candidates for an interview only to find out they have taken a job elsewhere because the other employer was faster in the hiring process. Technology providing information faster to hiring supervisors puts you on an equal playing field with the private sector. While such programs may not be cost-efficient for smaller LPAs, those who do handle high volumes of applications would be well advised to explore such systems.

Focus on Diversity:
Make a real effort to recruit and hire a diverse workforce. The public sector has recently emphasized hiring a more diverse workforce. Part of the reason for this is the changing demographics of the workforce and a growing recognition of the benefits of a diverse workforce. Many public sector organizations have adopted recruiting strategies focused on attracting a diverse pool of applicants.

One approach for this is to partner with community organizations that serve under-represented groups. Another strategy is to target recruitment events and job fairs that cater to a diverse range of candidates. Such a strategy can ensure you attract the best talent from all backgrounds.

Types of Recruiting Strategies

There are many ways you can go about recruiting candidates for your organization. Some ideas are presented here that you may wish to explore if you are not using them already.

Suppose you are only posting job openings on your city/county website. In that case, you are doing yourself a disservice by not reaching out to other potential candidates who do not frequent or even know about your website. You need to diversify and post your job announcements in as many ways as possible.

Not all these recruiting strategy suggestions are applicable or may not work for your organization. An example is posting a job opening for an equipment operator at a local retailer (naturally, with their permission), such as a feedstore that will work for a rural county but perhaps not in a large metro city.

Job Posting Sites:
Many job posting websites have a significant presence on the internet today. Some are free, and for others, you will have to pay. You will need to decide if you choose a paid job posting website versus a free one, depending on your budget and the audience you want to attract. Some of the more prevalent job posting websites are listed below. The University of Texas at Arlington does not endorse nor rank any of these websites over the others; they are provided for informational purposes only and are listed alphabetically.

- Glassdoor
- Google for Jobs

- Indeed
- JobPostFree
- LinkedIn
- Monster
- NewHireHunter
- Simply Hired
- Workable Job Board
- Zip Recruiter

Some sites listed above offer the benefit of creating a job posting once and being sent and posted to multiple other job sites. Research each listed above and others and determine what will best work for you.

Facebook:
It seems that everyone knows Facebook. While many use it solely for social networking, some private-sector employers also use it to post jobs. This type of advertising with Facebook does cost. This may or may not be a good fit for your organization, but it is another medium to consider.

Job Fairs:
Job fairs are organized and sponsored by various organizations such as cities or counties, economic development organizations, colleges, universities, etc.. Look for opportunities not just within 10 miles of your organization but events 100 – 150 miles or more away from your location to participate in the event. You never know who may be looking to relocate to where you are based and seeking a job. Go well prepared not only for job fairs but also any candidate-facing events.

Hosted Local Recruiting Event:
You may decide to host your recruiting event. Naturally, advertising and getting the word out are essential for an event to be successful. A key to an event like this is having managers or supervisors who can conduct baseline interviews or make a conditional job offer on the spot. Telling applicants, "You will get back to them," is the same as telling them you're not interested and they will continue looking for other opportunities.

Recruiting at Local Events:
Your community may host or sponsor an event such as a Spring or Fall festival. Foot traffic is critical to exposure, and many people will attend the festival. Have a table or booth with your recruiting information at the event, and provide giveaways with your city or county logo. This sends a subliminal message to those who visit your booth or speak with you that you are a part of the community, and they will connect with that. Making those community connections is vital to your overall recruiting strategy.

Open House:
Sometimes, hosting an open house for your organization may be the way to go. For example, if you are a city or county employing a workforce of 500 and have multiple job openings across several departments, you may host an open house. This type of event differs from a hosted local recruiting event your city or county may have sponsored. An open house does more. Activities that should be a part of the open house include:

- Presentations from department heads and front-line workers alike. Have presentations that are not just "talking heads" but have a simple yet informative PowerPoint presentation to

accompany their message. Make sure the presentation has several pictures of employees engaged in their work.

- Literature appropriate to the department that is hiring. This should be different from your literature on benefits. Still, it focuses more on what that department does, why it is interesting, and its role in the organization's big picture (Mission/Purpose).
- Provide hands-on activities that are simple to man and set up yet are powerful in message. An example would be having an equipment simulator (such as a backhoe or loader) that can be rented for the event.
- Have recruiters or department heads who can speak with interested folks either more at length right now or later with a scheduled interview.

Industry Event:
A successful example is the highway construction industry, which has held events in many states. Several cities and counties will partner, hold an equipment rodeo, and invite the public to attend. They will have heavy equipment manufacturers and local/regional companies sponsor their equipment to pay for the venue and other expenses.

This event is used to recruit actively. Here, you compete with other cities, counties, and private employers, but it provides free exposure for your organization, and you never know what candidates you may attract. You need to bring your "A game" to an event like this.

Local Retail Store:
In a rural setting, local stores (such as a farm/ranch supply or feed store) sometimes allow you to post a job hiring notice on their bulletin board. While you may say a store may not allow this, you will never know unless you ask. The worst they can say is no. The best outcome is that they allow it, and you get applications.

Texas Workforce Development Boards and Local Workforce Solutions Offices:
Under the auspices of the Texas Workforce Commission, there are 28 Workforce Development Boards that serve a specific geographic area. Each board is a group of community leaders appointed by local elected officials (County Judges and City Mayors) and charged with planning and oversight responsibilities for workforce programs and services in their area.

The Local Boards operate over 180 Local Workforce Solutions offices and are also responsible for:

- Developing local plans for the use of Workforce Innovation and Opportunity Act funds
- Oversight of the local service delivery system
- Coordinating activities with economic development entities and employers in their local areas

Most of each Board is represented by members of the local business community. Board membership includes individuals representing business and industry, economic development agencies, community-based organizations, education, organized labor, public assistance agencies, and more. Partnering with local boards and Workforce Solutions offices to attend hosted events or help you in attracting candidates. For more information, follow:
Workforce Development Boards' Websites | Texas Workforce Commission

Organizational Job Bulletin Boards:
Many organizations host Job Bulletin Boards on their website as a service to those who are members. Two organizations that serve cities and counties in Texas that come to mind are the Texas

Association of Counties (TAC) and the Texas Municipal League (TML). Contact each respective organization to obtain information on how to post jobs on their websites.

Source Recruiting on Social Media Platforms:
In addition to hosting job postings, many social media platforms also have a specific function where job seekers have posted their resumes and are actively seeking employment. You can use these functions for a nominal fee to proactively review resumes and identify potential candidates you can contact.

Professional Organization Job Bulletin Boards:
Numerous professional organizations also provide job bulletin boards. These organizations are usually industry-specific, but they may be a source for your hard-to-fill job position. Examples are listed below:

- American Public Works Association – Texas Chapter (APWA) – for multiple job classifications related to all segments of public works
- Project Management Institute (PMI) – for project managers
- Society for Human Resources (SHRM) – for human resource directors, managers, generalists, and specialists
- Texas Society of Certified Public Accountants (TXCPA) – for CPAs and other financial resources job classifications
- Texas Society of Professional Engineers (TSPE) – for Professional Engineers and Engineers in Training

Previous Applicants:
As required by the State of Texas record-keeping requirements, you should have on hand all job applications for the past two years. When you interview applicants for jobs and based on the number of job openings you have, there is a high possibility that you interview applicants you wish you could hire, but they are not your number one selection. Rather than not communicating with these applicants, call them or send them a personalized letter letting them know they were not the number one pick, but they were close, and you may be reaching out to them again in the future. Keep a file of these applicants and call them to inform them about new job openings to see if they are still interested in coming to work for you.

Universities, Colleges, Trade and Technical Schools:
Universities, colleges, trade, and technical schools often host recruiting events. Find out their schedule and make it a point to attend and set up a recruiting booth. Think outside your local area as well. For example, you are a city or county in the northwest part of the state. You are looking to recruit candidates for an Engineer in Training to become a Professional Engineer eventually. Don't focus on the universities and colleges in the northwest part of the state; look at all the schools offering engineering programs in Texas. You may speak to candidates looking for a job in your part of the state and possibly would have never thought about applying with your organization.

Setting the Stage for Future Generations:
Make presentations at local middle and high schools on what you do and what it's all about. You will gain an employee immediately; you are recruiting for a long-term goal here.

Several Texas state agencies offer paid summer intern positions, resulting in high school and college students joining the organization after graduating. Look at such a program that will provide excellent

summertime help and may turn into an employee later based on the experience they had with you through a summer internship.

A Final Word on Recruiting

Remember, when recruiting, advertising, attending recruiting events, etc., you must tell your story about the benefits you offer. This will get the attention of many potential applicants versus salary by itself.

Be sure to have the most current literature that is professional in appearance and content and easily readable for candidates to digest.

Dress for the occasion and present yourself in the best professional manner possible.

Posting, Screening, Interviewing, and Making the Offer

Now that you have gone through your recruiting process, you should follow a structured approach to get your job posted and processed as quickly as possible. One of the biggest complaints that many job applicants pose is the length of time that public sector employers take to hire for a position. From an extensive survey conducted by Careerplug.com:

"84% of job seekers said that responsiveness after initially applying influenced their decision to accept an offer". 25 Hiring Statistics All Employers Should Know in 2022 (careerplug.com)

This means the faster you act in the job posting and hiring process, the better chances you will have to attract and hire the best.

Let's look at the process following your recruiting processes.

Need to Fill a Position:
When you have a position to fill, one final decision you must make before posting the job is to ask yourself, "Is this the position I need to fill?"

The reason behind this question is to make sure that you are hiring for a position that is needed, not just to fill an allotted position. You may need to hire a Maintenance Technician III, but your allocation is for a Maintenance Technician I. Give it some thought and hire for the position you need.

Once you have decided, proceed with the process and review the job description you selected to complete the job posting.

| Need | Decision - we have an opening. Do we post internally or externally? Identify the Job Description to be used to fit the need. |

| Post It | Make sure your job posting is comprehensive and legal. Blanket the market with your posting. |

| Select | Screen candidates, and select for interviews - keep an open mind. Conduct interviews with structured questions and document. |

| Offer | Select the top candidate and make a conditional job offer. Negoatiate if necessary, extend final job offer. |

| Hire | Hand off to Human Resources to conduct Orientation. HR sends them back to you for Stage 2: Onboarding. |

Source: The University of Texas at Arlington DED, TxLTAP.org

Strategy for Filling Jobs – Internal Employee Referral Program:
A program you should consider (and it is recommended to make it a policy in your Employee Handbook) is to award current employees who refer a candidate hired as a part of their referral.

Having an Employee Referral Program is a much more effective and cost-effective way to attract quality applicants since the referring employee is most likely familiar with the character, work habits, and skill sets of the person they are referring.

Programs should be structured to pay an immediate benefit to the referring employee and an extended benefit. For example, if you dedicate $500 per referral that is hired and remains with your organization, pay the referring employee $100 when the candidate is on-boarded and the remaining $400 once the candidate has remained with your organization for 6, 9, or 12 months, you decide.

Posting the Job
What information goes into your job posting, whether online or hard copy, is important. It needs to provide enough information to the candidate but not be too brief or vague and not overwhelming with information. Finding the right balance of information to get the candidate's attention and outlining high-level job activities is essential.

Job Title:
Use the proper job title on the posting. If you need a Road Maintenance Technician, use that title; don't post for a "Road Worker." Road Worker is vague and does not necessarily give a strong impression of a job a person may be interested in.

Opening and Closing Dates of Job Posting:
You should have definite opening/starting dates and closing/ending dates on your job posting. If you place job postings with "Open Until Filled," that open-ended closing date may send a wrong message to potential applicants. Potential applicants may view it as there is no sense of urgency to fill the job or that you have a lackadaisical attitude towards filling the position.

With definite open and closing dates, it puts applicants into the mind frame that there is a sense of urgency for the job to be filled quickly, and they need to apply now instead of later.

If your strategy is wanting to have a job posting for an extended period and you do not get the applicant pool you wanted, post it again. You can also post a job with a 60-day time frame opening, but do not wait until the end of the 60 days to start reviewing applications. Nothing says you must wait until the end of 60 days to begin interviewing applicants you are interested in. If you have a candidate you want to hire, close the job posting early. Your HR department may push back on you a little, but it is permissible and is not illegal if the application period is open for a reasonable period, such as ten days. Such a job posting should also carry language such as "Open Until Filled." However, caution should be used when posting job openings, as explained below.

General Description/Summary of Functions:
This is a broad overview of the job itself. Taken from the Job Description developed by the TxLTAP program for an Equipment Operator IV, the wording provides an example to use:

"Performs advanced (senior-level) transportation operations or highway maintenance support work. Work involves coordinating and performing various transportation operations or maintenance activities, including highway construction and maintenance. May serve as lead worker providing direction to others. Works under limited supervision, with considerable latitude for initiative and independent judgment. This position is distinguished from the Equipment Operator I - III positions by greater work complexity and broader work responsibilities, including some light oversight of workers, as directed".

Primary Duties/Duties and Responsibilities:
You do not need to list all job duties for the posting. It is recommended to list the top five duties that will be most performed. All the job duties a candidate will perform should be given to the candidate during the interview process to ensure they know what the total job will entail. As an example, taken from the TxLTAP Equipment Operator IV JD, the top five duties listed are:

1. Operates following equipment to include, but not limited to, single and dual axle dump trucks, flatbed trucks, or water trucks; tractors with mowing machine and loader attachments; skid loaders with attachments, compaction rollers, excavators, asphalt maintenance units, backhoes, dozers, motor graders and any other standard or specialized heavy equipment used by city/county.
2. Coordinates the work of staff engaged in repairing and maintaining roadways and bridges and plans, schedules, and reviews work assignments.
3. Ensures that projects comply with accepted safety standards and traffic control within a construction work zone.
4. Substitutes, if assigned, during temporary absences of direct report supervisor by performing delegated duties sufficient to maintain continuity of normal operations.
5. Participates in and assists with on-the-job and skill-based training to meet the team and department goals and objectives.

Minimum Qualifications:

If you have the minimum qualifications you desire for the job, state them on the application. If you do not, you will have people applying for the job who do not meet the minimums you want. For example, spell it out if you want an applicant with five years of experience in roadway maintenance and repair.

Benefits and Salary:

When you list the salary for a job, list it hourly if it is a non-exempt position and monthly and annual for exempt positions. Don't use language for benefits that say, "excellent benefits." What exactly does that mean? Spell out the significant benefits and reference the others. An example would be "Benefits include medical coverage, retirement plan, paid leave, paid holidays, tuition reimbursement and many other benefits."

Licenses/Certifications:

Spell out any special licenses or certifications you may require for a candidate to have already, or you may have the language they must obtain within 60/90/120/180 days after their hire date. Examples related to Public Works/Road & Bridge personnel are:

- Valid Texas Driver's license
- Class A or B CDL
    - H Endorsement (hazardous materials)
    - N Endorsement (tank vehicle)
- Work Zone Flagger certificate
- FEMA ICS 100, 200, 300, and 400 certifications.
- Automotive Service Excellence (ASE) Certification
- Certified Erosion, Sediment, and Storm Water Inspector (CESSWI); or,
- Certified Inspector of Sediment and Erosion Control (CISEC); or,
- Certified Professional in Erosion and Sediment Control (CPESC)
- Certified Flood Plan Manager (CFM)

Physical/Environmental Requirements/Other Information:

Not all requirements need to be listed on the job postings, but it's encouraged to have the more critical ones, such as the ability to lift 50 pounds, the use of PPE required, etc.

Contact Information:

Do not list only a general switchboard phone number or website if an applicant has questions. List phone numbers that get to a real person.

Recommended Legal Wording on Job Postings:

It is highly recommended that you provide the proper EEOC disclosures/information on your job postings that are hard copy, on your website, or that you post to external websites. This is to keep you in compliance with hiring laws and regulations. The following sample is provided and is a sample only. Consult with your HR department or city/county attorney for guidance on the wording you wish to use.

[Organization Name] is an equal opportunity employer committed to diversity and inclusion in the workplace. Discrimination and harassment of any kind based on race, color, sex, religion, sexual orientation, national origin, disability, genetic information, pregnancy, or any other protected characteristic as outlined by federal, state, or local laws are prohibited.

This policy applies to all employment practices within our organization, including hiring, recruiting, promotion, termination, layoff, recall, leave of absence, compensation, benefits, training, and apprenticeship. [Organization Name] makes hiring decisions based solely on qualifications, merit, and business needs.

Where To Get Wording for Job Postings:
In September 2020, the TxLTAP Program was awarded funding by the Texas State Transportation Innovation Council (STIC) grant to develop and distribute innovations in Workforce Development (WFD) programs for LPAs in Texas. The project focused on providing Job Descriptions for Public Works/Road & Bridge departments, recommended training for those positions, and onsite assistance to develop WFD plans for those cities and counties requesting it.

All Job Descriptions are available to download, edit, and modify as needed on the TxLTAP website for free. The JDs are an excellent source of wording for your job postings. Open your browser and visit https://txltap.org > Library > Workforce Development > Job Descriptions.

Screening

Now that you have invested time, effort, and resources to recruit candidates, the work is not over. When the applications start to come in, it's best to start working on them immediately. Contrary to popular belief, you do not have to wait until a job posting is closed, and you receive all applications at one time. That is an internal practice driven by Human Resources. No law or regulation states you must wait to get all applications at once.

Work with your HR to negotiate to receive applications as they come in to begin your work screening them. However, a word of caution – if you have a stated "closing date," you must screen and process all applications and not inadvertently eliminate the last-minute applicant.

Some large cities and counties in Texas use an automated screening system to identify and select the best candidates to continue the process of interviews.   Numerous commercial software packages on the market will perform this function.

However, a best practice when hiring public works employees is for the hiring supervisor to screen the applications.

Screening should be documented to defend against future claims of unfair hiring selections. When the same criteria are applied to all applicants and it is documented, it provides a defensible position in your hiring practice. For assistance on how to develop and use a screening tool, contact the TxLTAP Program office.

Interviewing

Your interviewing process may have one, two, or three stages, depending on the job complexity for which you are hiring. You need to make that decision before beginning interviews and stick with that process through all your applicants for the job posting.

Interview Questions:
Before your interviews, you need to prepare a series of questions you will ask everyone you interview. Skipping questions from one interviewee to the next and asking off-the-cuff questions can undoubtedly present problems if you are the subject of an EEOC complaint for discriminatory hiring practices. You

should also assign a point value to each question and document your preferred answers tied to those points as part of your interview packet.

Initial Interview:
Some employers do only one interview; others choose to do two. No model is better than the other; it's your position you are hiring for, and you decide what is best for your situation.

You may choose to do a one-on-one interview or use a panel. Consider a panel format if hiring for a high-level position such as a director, city/county engineer, etc.

Secondary Interview:
Your secondary interview could be based on one of two criteria:
1. You need an actual tiebreaker interview to decide on one candidate.
2. You choose to perform one-on-one interviews in round one and now wish to do a panel interview for round two to select a final candidate.

Again, the same processes should be used to prepare questions in advance, preferred answers, and a scoring value assigned in advance.

Job Simulation:
Employers often say, "I wish I could find a way for a candidate to show me what they could have done before I hired them."   You can do this through a job simulation.

Some examples of how to accomplish a job simulation in a safe environment that is fair to the candidate, all other candidates, and you as the hiring supervisor.

- Equipment Operator
  Many public works organizations prohibit the operation of heavy equipment by anyone except those who are already an employee of the organization. So, how do you "test" a potential candidate on heavy equipment without them operating it?

  Prepare a list of tasks in advance and go to the yard with the candidate. Ask them to point out a motor grader, a compactor, an excavator, a backhoe, etc. You may be surprised how many people cannot pass this simple identification test. If they pass, proceed to each piece of equipment and have them point out the various controls and what they do. Ask them about the steps in preventive maintenance and pre-operation checks. This simulation will give you a baseline on what they know or don't.

- Administrative Assistant
  Simulating tasks that are office work is easier to develop and administer. Scenarios such as proofing and correcting correspondence, filing, working Excel spreadsheets, etc., can all be accomplished to give you a sense of a candidate's office skills.

Making the Offer

First offers of employment should always be "conditional" as there are internal work processes to be completed. Those remaining tasks should include the following. As a part of completing these tasks, be sure your candidate has signed a disclosure that allows you to conduct these checks.

- Background check – in today's work environment, many employers find it beneficial to take the extra step and conduct a criminal background check. If your candidate has a recent history of violence-related misdemeanors, that indicates that you may have the potential for future violence in the workplace with that candidate.
- Driver's license check – you want to ensure that your candidate is licensed to operate a vehicle or truck according to the needs of your job. Just because a candidate can produce a Texas CDL, it does not mean it has been revoked or is near revocation due to unlawful infractions.
- Drug screening – if the position requires holding a CDL, this is a legal requirement, and you cannot waive it. It's a good practice to drug test all candidates regardless.
- Physical – almost every job in public works has a lifting and carrying requirement of materials and, yes, even office supplies. Your job description should have a requirement in it to carry/lift. If you need the person to be able to lift 50 pounds, that needs to be checked as a part of the physical.
- Prior employment verification – this check will provide information to you about two things:
  1) If the candidate has the years of experience you require and
  2) The candidate's performance if the prior employer is willing to share.
- Credit report – if you are hiring for a position that will handle funds, it is reasonable to conduct a credit check of the candidate. If they have poor credit, there is a higher risk of misappropriation of funds. This does not necessarily mean dismissing the candidate; it is just a warning flag to pay close attention to their money handling.

When all your post-interview tasks are complete, and you wish to extend a final job offer as the hiring supervisor, you should call the candidate. Reach out to them; don't wait for them to contact you. It would be best if you made the call upbeat about bringing them on board and being a part of your family.

Follow up the call with a letter detailing the start date, the salary agreed upon, where to report on day one, and any other important information the candidate needs to know.

There is a distinct difference between the orientation that new hires receive from the Human Resources (HR) office and their immediate supervisor. HR is focused on transactional-type processes, such as paperwork, distribution of employee manuals and policies, and other organizational policies while obtaining written acknowledgment of receipt. Immediate supervisors also should create development processes and steps for employees, including an introduction to the daily work they will be doing. This is referred to as the onboarding process.

Many organizations do not have an onboarding strategy or process for new hires. In the absence of an onboarding strategy or function, it is left up to their supervisors how they will be handled once they report for work. Some supervisors will do a good job explaining the job to the employee and may even assign them a shadow employee to introduce them to the rest of the workgroup and walk them through their assigned tasks.

Other supervisors may use the "sink or swim" method with new hires. They may think, "If they can survive the first week, they will stick around." Thinking and acting this way with new hires can be taken as demeaning to the new hire. It may form their first impression that can never be changed.

In either of these cases, having a structured process for onboarding new hires, at a minimum, will provide a standardized procedure that is followed by all business units and helps to eliminate biases that could exist.

Onboarding is an investment event that takes time, sometimes as long as six months, in both the public and private business sectors. The more time and effort you put into this investment with a new hire, the better the chances are (statistically) that you will have an employee who will stay with your organization versus feeling they are on their own and begin seeking other opportunities.

Industry On-boarding Statistics:

Without a structured on-boarding process:
- 4% of new hires never return after the first day on the job.
- 20% of new hires leave within 45 days on the job.
- 33% of new hires look for a new job in their first six months of employment.
- 90% of new hires decide within six months if they intend to stay or start looking for other opportunities.
- 23% of new hires leave before their first anniversary with the organization.

With a structured on-boarding process, organizations can realize a:
- 20% increase in management satisfaction with new hires.
- 50% increase in productivity of the new hire.
- 58% retention of new hires after three years with your organization.

Other onboarding statistics:
- 75% of new hires say training is most important to them in the first six months on the job.
- 56% of new hires say having a mentor or a "go-to person" is especially important when getting started.

- 41% of Human Resources professionals agree that their organization needs to improve onboarding.

These onboarding statistics encourage you to implement a structured onboarding process.

Onboarding Benefits

The benefits of having a structured onboarding process outweigh the reservations or, in some cases, outright objections that supervisors may pose. Benefits of structured onboarding include:

- Decreased attrition rates with new hires.

- Increased productivity of new hires.

- Reduction of EEOC complaints of one business unit using a lean model (or no model) for onboarding versus another business unit that makes onboarding an investment with the new hire.

- Accelerated integration of the new hire into the business unit and the feeling of being a part of the team.

- It reduces stress on the new employee. When new hires are constantly engaged with information and support from their team members and supervisors, their anxiety caused by uncertainty is reduced.

- It's repeatable. It's in writing; a supervisor should follow the playbook instead of making it up as they go.

- It's scalable. This means you have flexibility in structured onboarding to increase or decrease your daily/weekly engagement level, depending on the new hire. While some new hires adapt, learn, and fulfill their roles quickly, others may take more coaching and time. Flex the time and engagements with the new hire depending on their abilities.

Orientation and Onboarding Defined

Orientation
For new hires, orientation is a one-time event that welcomes them to your organization and does the necessary paperwork for payroll and other administrative functions.

Onboarding is a series of events that includes orientation. Onboarding helps new employees understand how to be successful in their day-to-day work and how their job contributes to the organization's overall success.

What's new employee orientation?
During orientation, new hires are introduced to the organization and its culture, mission, vision, and values. In an ideal world, new employee orientation should be conducted on the first day of employment.

Orientation is usually a conference-style event that brings new hires from different organizational

departments. Generally, information is transferred through presentations and question-and-answer sessions. Organizations often schedule time for various leaders and managers to greet new employees, introduce themselves, and explain their organizational roles.

The following are recommendations that should be touched on during new employee orientation:

- An introduction to your organization's mission, vision, and values. An organizational leader or a long-tenured employee may present these topics, telling stories to help better communicate the information to new hires.

- Mandatory new employee paperwork. The Human Resource Officer (HRO) or another official will guide new employees through paperwork while collecting and answering any questions.

- Introduction to benefit plans. Again, the HRO or benefits coordinator presents an overview of benefits to new hires and answers questions about how and when they could begin using them.

- Review of key policies like safety and health. It is suggested to bring in a safety coordinator, risk manager, or safety point of contact to discuss workplace safety information.

- Delivery of any employee manual/employee policy handbook. Allow the new hires time to read and ask questions. Be sure to have a statement the new hire signs acknowledging receipt of the manual/handbook and that their questions have been answered.

- Review of administrative procedures, such as computer systems logins, etc. Ideally, an information technology representative should present and answer questions about workplace technology systems.

- Mandatory training. Rather than waiting, it's best to go ahead and cover mandatory training now as a part of orientation.   Stage 3, Training and Development, will detail suggested mandatory training for employees and supervisors. At a minimum, the following should be covered in orientation:

    o Title VI Civil Rights Act.
    o Harassment in the workplace.
    o Diversity, Equity, and Inclusion.
    o Defensive Driving (if your organization requires it).
    o Cyber and data security.
    o Records retention requirements.
    o Pcard or other purchasing/acquisition requirements.

Onboarding

While an orientation agenda is a checklist, onboarding is more of a strategic approach to engaging and retaining the new employee.

During the onboarding process, employees should be thoroughly introduced to their organization. New hires can learn the culture and business objectives of the organization by participating in meetings and starting projects with co-workers. Managers should schedule regular meetings with new employees so that they can get comfortable talking to one another. Over time, new employees will learn the specifics

of their roles and responsibilities. Among those can be how to correctly complete key tasks, whom to go to with questions, how to get approval for their work, and how to make suggestions.

An onboarding plan should focus on what matters most to the department to help new employees connect department-wide goals with their day-to-day tasks.

After the first 90 days, managers should work with new employees to develop S.M.A.R.T. goals. The S.M.A.R.T. system will be covered in detail in Stage 4, Employee Engagement. During this process, you can review their initial experiences on the job and assess how engaged or connected they feel to your organization.

Comparing orientation and onboarding

Orientation and onboarding are very different but necessary for new hires. One way to separate each is to look at the focus, duration, setup, content, and outcome of these two events. You need orientation to familiarize new employees with the organization's mission and culture immediately. You need an onboarding process to get them invested in their day-to-day roles and how it helps your organization meet its goals.

One example: consider the differences in the content that is covered. During onboarding, your business unit's unspoken rules might be explained, such as how the phone gets answered by the third ring or those office assistants who are responsible for answering the phones. Orientation should describe the organization's commitment to customer service and the public.

The five high-level focus areas of orientation versus onboarding are:

Orientation
- Focus: Role in the organization
- Duration: One-time event
- Setting: Classroom or office, depending on the number of persons being onboarded
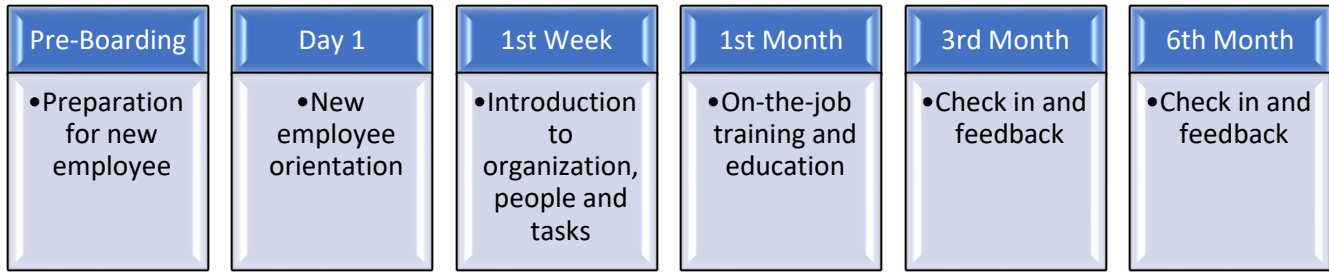- Content: Big picture
- Outcome: Ready for training

Onboarding
- Focus: Role in the team
- Duration: Sequence of events, time to be determined
- Setting: On-the-job
- Content: Individualized
- Outcome: Ready to contribute

6 Stages of Onboarding

There are six stages to the onboarding process that are time-based.

Pre-Boarding	Day 1	1st Week	1st Month	3rd Month	6th Month
•Preparation for new employee	•New employee orientation	•Introduction to organization, people and tasks	•On-the-job training and education	•Check in and feedback	•Check in and feedback

Source: The University of Texas at Arlington DED, TxLTAP

Let's look at how an ideal onboarding process should evolve.

Pre-boarding

- Map out the first week and have a rough plan for the following weeks and months.

- Set up the desk, computer, locker, and other resources. Start their first day with a clean, organized place to begin. Ensure they have all the tools - paper, pens, calendar, first week's schedule, etc. Set up your new employee's online accounts, including:
    o Email
    o Human Resource Information System (HRIS) software.
    o Work production, tracking platform work order, or other software platforms used.
    o Arrange for new employee ID card/building access keys.
    o Arrange for parking access, if needed.
    o Arrange for any relevant internal training required for the job besides what they have already covered during orientation.
    o Have a plan to discuss the on-the-job or other formal training they will be taking.

- Prepare your team for the new employee. Tell them the new hire's name and role. Let them know you will be coming around to introduce the new person and encourage the team to be friendly and welcoming to their new co-worker.

- Plan for introductions in other departments. Schedule meet-and-greets with any managers, team members, and colleagues from other departments with whom your new hire will interact. Ensure this is done early so that no rescheduling needs to be done.

- Identify a mentor for each new employee. Determine in advance who would be a good mentor for the new employee. Mentors should not be in the new employees' chain of command. Notify the selected mentor and have them report on the first day of the new employees' arrival at the office at a scheduled time for introductions.

Day One

After the HR department has processed the employee, they are advised to report immediately to their supervisor.

One of the intents of onboarding should be a "Safety First" initiative. Industry statistics show that many employees are hired by public agency organizations for road work, operating equipment, recycling, garbage disposal, or any other type of work that exposes the employee to risks and hazards on the job. New hires are often not adequately trained before assuming work duties. Managers are pleased to have a new resource and to get them to work as quickly as possible. Those same managers often take the approach of training them on safety protocols as soon as possible but often put the employee to work immediately. This may lead to problems if the employee is injured or causes an accident due to a lack of training.

Such an attitude and practice can and will lead to unnecessary injuries to the employee, other people, and equipment. Removing the employee from this risk environment for a short period, giving them the proper training they need, and preparing them to work with others on the public right-of-way is a critical step to the long-term retention of that employee.

- Have someone ready to welcome your new hire when they get to the office.

- The new employee meets with their immediate supervisor for 2 – 3 hours.

- The supervisor welcomes the new hire and asks more about their background to gauge their experience in the job they will be doing.

- The supervisor should cover a "Who We Are" (mission, purpose, what we do in this section, etc.) introduction with new employees.

- Show the employee where they will be placed on the section organization chart.

- Discuss the first week's schedule. Talk about what the week will be like.

- Do a walkthrough of facilities and introduce the new employee to key personnel.

- Send out an email to your business unit about the new employee. Include other business units the employee may be working with.

- Introduce the new hire to their mentor in person and let them know that their mentor is not their supervisor or in the chain of command but is a person they can go to for help and ask questions.

- Place the new employee with the Safety Coordinator or Safety Point-of-Contact for the remainder of the day to cover essential safety procedures, processes, and city or county policies.

- Allow your new hire some downtime to log in to their new accounts (if applicable).

- Have the new employee return to you for an end-of-day discussion and review what they learned on Day 1. Answer any questions they may have.

First Week

During the first week of a new job, it is important not to overwhelm a new hire. It could cost you productivity and possibly an employee.

- The first week is a good time for new hires to spend with their immediate crew leader, managers, and coworkers. Get them up to speed using relevant programs and applications, plus an introduction to the work they will be performing.

- Have them walk through procedures and standards important to the department in the first few days. This will help your new employee feel comfortable starting the actual work. Cover the rules and processes for internet usage, email communication, breaks, etc., and start letting them become familiar with the technology they will use.

- Introduce your organization's culture. Once the employee understands your expectations, relate those standards to your organization's culture. They must understand what to do and why it is important to your business unit.

- Continue the training that you started on day one. Have them do online training such as Safety Data Sheets, etc.

- Follow up at the end of the first week. After giving new hires time to get used to the office, workspace, and trainer, follow up with them to ensure they are comfortable and are picking things up at an appropriate pace. The end of the week is an excellent time to discuss how the following weeks and months should progress, what is expected of them, and where they should be.

- Give them your bible. Your new employee should read and sign the employee manual (or any other hard copy manuals/policies you may have). It is essential to ensure they have time to read and digest it. Spend time going through it with the new employee to ensure they understand certain critical areas that you know have been problem areas in the past.

- The unwritten rules. Discuss what you know will come up, like the policy on TikTok at work or the best way to call in sick. Do not leave it to the employee to guess.

- Technical issues. Every company has something like sticky printers, computers that freeze, and a door that does not accept the badge the first time. Have someone guide your employees through all the technology hacks in your office so they know how to navigate them.

- Give them your numbers. Phone numbers of co-workers they will need to contact, extension lists they need to know, and any codes to get into the building, bathroom, and private offices should all be covered on the first day. Give them your number as well.

- Establish their performance plan. Setting up a performance plan in the first week sets the stage for your expectations and how the employee can meet those expectations. This way, there are no surprises when you evaluate them at 90 days. We will cover how to set up and cover an Evaluation Plan.

- Create a workbook. Build a workbook that includes milestones of where they should be on Day 5, Week 2, 1 Month, etc. You determine milestones. Giving your new hires concrete milestones to hit will help them plan their time.

- Make time for questions. Encourage your new hire to write down any questions or concerns, then give them time to discuss at the end of their first day and subsequent scheduled meeting days.

- Put a two-week check-in on the calendar. This is critical if hiring many people or getting an employee up and running quickly.

- Familiarize the new hire with any training requirements. Make sure they know if there are any deadlines for completing specific training.

- Give them something to do. If you spend too much time on training and onboarding, your new employee may begin to feel like a burden. Allocate a few hours every day to having them complete actual work. Place them with their mentor and/or direct report supervisor to engage them in real work.

- Have patience. New employees are going to make mistakes. Please do not belittle them for errors; use a coaching session to teach them the right way to do things.

First Month

In addition to the tasks you have completed on Day 1 and Week 1, continue with the following:

- Maintain lines of open communication. At the end of their first month, the new hire should be settled into their position and be at the core of their training. This is an excellent time to talk to them about how the experience is going for them. Find out what is going well and what isn't, and what things (or people) they struggle with. Please encourage them to ask questions.

- Get them involved. Fostering engagement from the moment the new hires walk in the door the first day. Make sure you are providing opportunities to get them involved with the department.

- Continue the feedback. Get updates from their mentor and crew leader and ask them to help point new hires in the right direction if they seem to be faltering or struggling with specific tasks.

- Encourage independence. With training, introductions, and communication covered, it is time to let your new employees practice what they were hired to do. Since they are still new, continue checking their work and providing feedback. But also use this time to get them to work on more projects and tasks.

- Set performance goals. Keeping new employees engaged with goals will help point them in the right direction and give them something to work towards from the beginning. Before their first review (ideally at 90 days), give them a few S.M.A.R.T. goals to accomplish so they hit the ground running in their role.

- Build them a career path. Once new employees know a lot about their tasks and team members, work with them to develop a career plan that fits their personal goals. Designate goals to allow them to build their career at your company.

- Give them the first informal performance review. After 90 days, new hires should have a healthy proficiency in their role. The first review is the best time to evaluate their strengths and weaknesses and decide if their current training program fulfills their needs. Remember, though, that every organization has different standards, and every employee develops at a different pace.

Third Month

Some employers have a 90-day probationary period (or 180 days), and if your employee has successfully integrated into your organization, the onboarding process should continue. Continue with the following:

- Maintain the lines of communication.

- Continue the introduction of increasingly complex tasks.

- Challenge the new employee to develop different ideas for performing tasks.

- After 120 days of hire, review the performance plan again. Adjust and revise as needed.

- Ask the employee about challenges or reservations and discuss overcoming them.

- Review training accomplished and set a plan and schedule to correct any missing or skipped training.

- Schedule continued meetings.

You want to have a continued but not as intense continuation of onboarding that will eventually taper off in specific onboarding tasks and become routine for you and the new employee.

Months four through six

All actions and activities continue in months four through six with one major capstone:
- The first formal Performance Plan. Covering the performance of the new employee needs to be a big deal. It is the capstone for the end of probation for many new hires. It is also the first time their performance is formally evaluated (unless you had to take documented corrective actions sooner).

    We will cover all the Do's and Don'ts that apply to a Performance Evaluation, regardless of whether it is the first or 50th evaluation your employee receives.

    Take the extra step and congratulate your employees on successful onboarding and finishing their probation.

When the onboarding timeline has finished, it doesn't mean cutting off or abandoning interaction or communication with your new employee. There are continued tasks, contacts, and discussions that need to take place. We will cover those items in Employee Engagement.

Additional Resource Tools for Employees Being Onboarded

There are a few additional resource tools you should consider as a part of your onboarding process.

Frequently Asked Questions (FAQs)
Capture FAQs, document answers, and, if possible, make them searchable so new hires don't always have to rely on tenured employees to ask questions that could be easily referenced and answered.

Empower self-serve and self-pace
You might have recruited the best hire at the time of your job posting, but it is your responsibility to empower the new employee. How do you go about this? To fit into a new position, role, and responsibilities, the employee should have access to documents and articles that will help him learn, understand, and clarify their questions. Invest in creating a book of articles or resources you find helpful for your employees. For Public Works and Road and Bridge employees, prime examples would be the TxLTAP Better Roads, Safer Roads quarterly publication concentrating on public works issues and safety. Other trade periodicals should also be made available when possible.

Easy Document Access
Make the following documents open resources, meaning they don't have to go to someone and ask or check out the document. Make them available in a common gathering room or breakroom.

- Employee handbooks
- Standard Operating Procedures
- Company mission and vision statements
- Core values
- Organization chart
- Employee directory
- Learning and training resources
- Policy agreements (i.e., internet use policy, company equipment)
- Workflow process charts
- Equipment Operator Manuals
- Training schedules

Actions to Avoid Onboarding New Employees

Sometimes, members of a team, or even the supervisor, may, from habit or long-standing practice, say or act in a certain way to a new hire that will stick with that person in a negative way they have difficulty overcoming. The following should always be avoided:

- Making assumptions on skill sets the new hire may have. Don't say, "Well, Jim is joining us from ABC Construction Company, and he will show us how to operate an excavator correctly." While this may sound like a compliment to Jim, perhaps Jim did not operate an excavator; he was a motor grader operator. Jim is now in the hot seat to show off skills he may not possess. You have inadvertently set up a conflict with your new hire.

- Making assumptions about the new employees' learning and comprehension skills. Although the new hire may have interviewed well, some employees are auditory-oriented in taking in information, processing it, and applying it. They may struggle with learning from documents or in a formal training class. They may be very hands-on-oriented in the way they learn. Keep an open mind about how your new employee learns and applies new knowledge, and provide them with learning opportunities that work best for them.

- Making assumptions about the communication skills of new hires. Some new hires will interview well because they know the stakes are high to get the job. They may have trouble expressing themselves when they have problems at work or with a task. Rather than ask for help (which they find hard to do), they will take criticism and do it correctly next time. Ask a new hire to explain back to you what is expected. Have them repeat it, if necessary until clarity is achieved.

Why the Need for Training and Development?

Some degree of employee training is essential. Yet, many organizations place the training and development of employees at the bottom of their list.

The TxLTAP Program has been called on to help numerous cities and counties develop and implement training programs for them because of their lack of training or delivery of very little training to their Public Works/Road and Bridge employees.

Managers and supervisors give many misguided reasons or excuses for not providing training or development activities. While a manager or supervisor may try to deliver logic or excuses for not engaging their employees in training, many reasons counter those excuses. Some of the more encountered reasons are:

1. I need my employees working; I don't have the time to send them to be trained.
2. They won't learn anything they already should know.
3. I can never get the training I need when I want it for my employees.
4. I don't know what training I need for my employees, so I don't bother.
5. I don't know how to follow up on the training event my employees may attend to determine if it was effective.
6. I don't have a budget for training.
7. I'm afraid my employee may know more than me.

Please reconsider your position if you have ever given, rationalized, or practiced any of these reasons for not sending or providing training for your employees.

When we train our employees, they win, you win as their supervisor, and your organization wins. Let's look at the counterpoint to why managers don't provide training:

1. You don't have time for rework, failure to perform, accidents, or injuries.
2. Training reduces risk to your workforce and improves employee efficiency.
3. Nobody comes to work with 100% knowledge of how to do everything. Training and development opportunities provide that channel for employees to learn and grow.
4. You need to spend some time researching training providers and work with one or several that are flexible in their schedules to meet yours. A good training provider is highly flexible regarding when they can deliver the training and where the activity occurs, such as your location.
5. You need a consultant or workforce development specialist to develop a training plan for your employees. The Texas Local Technical Assistance Program (TxLTAP) can provide this service for **NO COST**. More details on these services will be provided later.
6. The best way to find out is not to ask your employees right after attending a training event if they learned anything but to ask them 60 days later to _demonstrate_ what they learned in training. If the training stuck with the employee and they are practicing the learning objectives from the training, you need to look at that training provider to come back and help you again.
7. There is a lot of free training available for city and county personnel. We will cover this in more detail, but remember that the TxLTAP is a key provider of **NO COST** training for Public Works/Road & Bridge employees.

8. If your employee is more knowledgeable on technical issues than you as a supervisor – **GOOD!** Your job as a manager or supervisor is not to know everything but how to use the resources (employees) that report to you. It's OK to have highly knowledgeable employees on the job; use them to your benefit and advantage.

A long-time training and seminar provider, Zig Ziglar, sums up one of the best reasons to provide training for your employees:

"The only thing worse than training an employee and having them leave, is to not train them, and have them stay." – *Zig Ziglar.*

Keep in mind that when hiring new employees or training and developing them, the objective is to develop the skills and knowledge to get the job done.

Closing the Competency or Skill Gap in Your Workforce

One of the biggest challenges employers face today, just not in the public sector, is their existing workforce's competency or skill gap. It is defined as not having the knowledge or skills needed within your workforce to operate effectively and efficiently day-to-day.

Later, we will cover some strategies to close your skill gaps through Succession Planning. However, let's look at skill gaps, the significant causes, statistics, and reskilling versus upskilling practices.

Reasons for Skill Gaps

The reasons behind increasing skill gaps in the workforce are not caused by one reason; there are many. Among them are:

- Turnover or loss of highly experienced employees. A recent survey by the Society of Human Resources Management [Employers Face Hiring Challenge as Boomers Retire in Record Numbers (shrm.org)](shrm.org) yielded that over 20,000 Baby Boomers (typically born between 1946 and 1964) are leaving the workforce and not returning **PER DAY.**

- Changes in roles or responsibilities. Some supervisors and employees are moved into positions with different responsibilities without preparing that person through shadowing or cross-training in advance. The mindset may be that they were a solid performer in their job; let's move them, and they will succeed there. But this is not necessarily the case.

- Poor hiring practices. Sometimes, employers become desperate and hire a warm body to fill a position rather than taking serious steps to attract, recruit, and hire a skilled employee. If you hire a warm body, that is what you will get. True, the employee may be trainable and a quick learner, but on the other hand, they may not be a fast learner or trainable, and now you have dead weight and performance issues.

- Lack of technical skill training. It is always a best practice to cross-train your workforce three deep (meaning three employees are qualified and skilled) for any function or equipment you

use. Take advantage of times when you have a gap in production schedules to bring in training and cross-train your employees.

- All training has a half-life. Many studies conducted by various organizations have shown that technical training typically has a useful life of 2.5 years. To put this into perspective for public works employees, how they operate heavy equipment today (controls, functions, attachments, processes) will most likely change in the next 2.5 to 3 years. Without training on how to operate new equipment, they will not be efficient, or the possibility of damaging the equipment exists.

- Lack of technology training, also known as the digital skills gap. This could be as simple as an employee needing to enter a work order in a system, enter their daily timesheet, or access the information on an employee information portal. With the continuing evolution and use of technology-based systems, even basic remedial technology skills must be provided for employees.

- Lack of an On-the-Job (OJT) training program. Sometimes, OJT is structured and has a well-skilled employee teaching. Most often, OJT takes the form of someone passing down bad habits they learned from someone else. If you have an OJT program, you need to step back and look at it to make sure it's meeting the needs of your organization.

- Poor education opportunities. Occasionally, we have employees who did not have public educational opportunities or get the education they deserved. They bring those deficiencies to the job, and you must help them.

Types of Skill Gaps

Skill gaps may exist in three different ways:

Image Source: Channelmarketreport.com

Knowledge Gap – a lack of knowledge related to the day-to-day job duties. This could include specific knowledge needed to perform tasks successfully or the institutional knowledge of a given organization. An example could be the post-operation steps to prepare an asphalt distributor for a chip sealing operation.

Skill Gap - Knowledge usually refers to learning and retaining information and applying the proper knowledge in each situation or task. Employees can pick up knowledge through reading, observing others, and training. Skills that can take on different needs for a particular job could be mental (such as safety situational awareness when operating an asphalt distributor), physical (the fitness required for handling the distributor and attachments), or soft skills (such as communication with crew members).

Performance Gap – Some employees may lack motivation, leading to poor performance. Performance gaps occur when an employee with all the tools to be successful still underachieves. This could be for several reasons, including improper employee management (such as not using Performance Evaluations) or individuals being a bad fit for the organization.

Now that you know what causes skill gaps and the other types of gaps that all affect your work production goals, let's look at some strategies you can use to help close the skill gap.

Reskilling
Reskilling is learning new skills by employees to move into a new role within their current organization. Reskilling is a way to move a person who fits better for another position in the organization.

For example, you may have a purchaser that excels in communicating with customers. However, they seem interested in the construction and maintenance record-keeping process and are looking at other employers. Because they are open to changing to a record-keeping that requires a high skill level in communications with numerous parties, reskilling them for a record-keeping position is better for the employee and your organization.

Upskilling
Upskilling is improving an employee's skill set, making them more effective. Typically, upskilling occurs through employee development (such as training and development activities), with the employer providing new opportunities based on the employee's ability to apply and improve their abilities.

Examples of upskilling should include both soft skills and technical knowledge. By upskilling employees, management supports their employees' ability to improve their collaboration skills in the work environment. They may also target a specific technical skill missing from their workforce.

On a basic level, upskilling is investing in your workforce to meet the changing demands of your public works organization.

The Difference Between Upskilling and Reskilling

Upskilling and reskilling are processes relating to learning new abilities and improving employees' flexibility to take on new challenges.

- Upskilling focuses on employees developing new skills and competencies to improve their current roles. Upskilling increases the depth of employee knowledge related to their current position. It enhances their existing skills and makes them more valuable to your organization.

- Reskilling refers to retraining and learning new skills to perform new organizational roles. Reskilling provides the capabilities for employees to transition to a new position.

Why Upskilling is More Critical Than Ever

Employee development and teaching teams new skills to improve operations are essential for any public works operation to be successful. Rapid technological advances require employers to look at upskilling now more than ever.

With each passing year, how we have traditionally conducted business, the associated skill sets have become outdated. We must adapt to new operating methods to remain successful and engaged with

the public. Upskilling must become a continual process matching the changing needs of the public regarding services rendered and the information they seek.

Some studies indicate that the more we use technology on the job, the reduction in the half-life of skills increases. An example would be introducing a work order system used for two to three years and then replacing it with a new one. The knowledge and skills using the older system are meaningless to the organization now as it is no longer used.
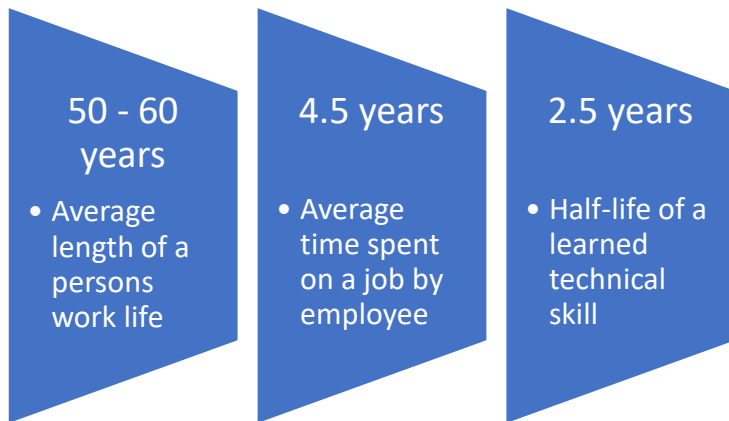
50 - 60 years	4.5 years	2.5 years
• Average length of a persons work life	• Average time spent on a job by employee	• Half-life of a learned technical skill

Image Source: The University of Texas at Arlington DED, TxLTAP.org

Research shows that the half-life of professional skills has dropped from 10 years to 5 years. For technical skills, this number halves to around 2.5 years.

Research by Deloitte in their Learning in the Digital Age | Deloitte Insights article suggests the lengthening of careers, along with the declining half-life of skills, compounds the need for upskilling. People are working longer, but their skill sets remain relevant and useful for less time. Therefore, employers must push their employees to update their skills regularly to hold value within their organization.

Best Practices in Training and Development Activities

As an employer, whenever you send or bring training on-site, there are some actions you should take to make sure that the training sticks with the employee.

Learners today often have short attention and retention spans. Their learning needs to be reinforced at regular intervals for longer retention. The Ebbinghaus Forgetting Curve is a good memory model to learn about this. It shows that nearly 60% of knowledge is lost within an hour of learning it. More disturbing is that most employees will only remember 21% of the knowledge passed to them after one month back on the job.
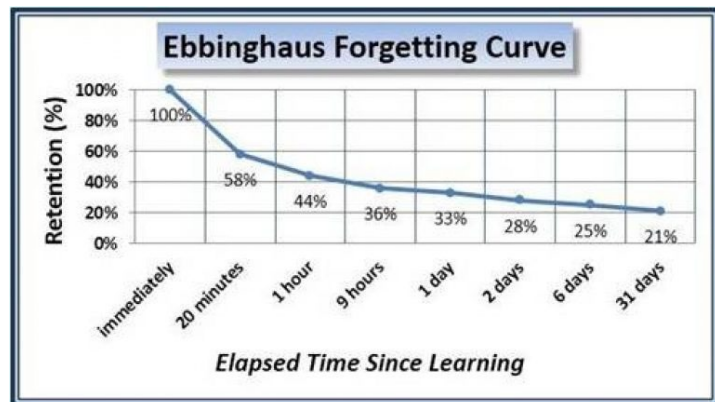
Image Source: Securityawarenessapp.com 1

Some guidance to follow on how to get your employees to retain knowledge longer than average include:

- If they don't use it, they will lose it. Once an employee returns from training, provide them with an on-the-job assignment that requires them to use the skill sets they learned. Example:
  - If an employee attends a motor grader class, but you have another employee who is your "lead blade man," and you do not allow the recently trained employee to continue

42

their training by operating the motor grader, the training was a waste of time and effort for this employee.

- Managers should complete the same training as their employees or at least get an executive overview of the skills taught.
  - o Depending on the demands and schedule of a high-level supervisor, it is recommended that they attend the same training with employees as it sends a message to the employees that they are there to learn the same information.
- Have training plans or matrices that match an employee's job description.
  - o You do not want an employee who performs a job as a general laborer, yet you train them as an equipment operator or vice versa. The job description of the employee should match the training they take. The exception is when you are looking to upskill an employee for a higher position than they are currently in.
- Set the right climate and attitude for the training; don't downplay the training with employees before they attend.
  - o Don't comment, such as "Well, a couple of you have it easy this week; you get to attend training." Such a statement sends the wrong message. Instead, positive comments should be made.
  - o If you are familiar with the training, tell your employees specific topics to which you want them to pay close attention. An example might be how work zones are set up that are in place from 1 to 5 hours.
- Have the employees share what they learned with the rest of the team.
  - o Call your employees for a short meeting a couple of days after they return from training and ask them to bring in the training materials they received and tell you about the class. Ask them what they learned and how they plan on using it on the job.
- Have employees deliver training to others in your workplace. Example:
  - o An employee has attended a basic crane rigging and signals course. Have them show other employees the proper signals that should be used.
- Touch base with employees 30 days after training to see if they have applied what they learned on the job.
  - o If they have not had an opportunity, identify the obstacles and develop a plan with them to use the training.
- Conduct a short post-training follow-up session.
  - o Use the training manual and quiz training attendees on topics to gauge their retention of the materials. If the class was hands-on, such as operating a particular piece of equipment, have them demonstrate what they were taught to you or their foreman.

Formal vs. Informal Training

Formal

Formal training is an announced scheduled training event. It usually carries a record (such as a training class roster) to record who was present and completed the training. Formal training has some key benefits, such as:

- A large number of employees can be instructed at once where they all learn together.
- The content tends to be accurate and up-to-date.
- The training has learning objectives associated with it. The learning objectives detail what behaviors or skills a person should be able to perform after the training. Learning objectives may read something like this taken from the TxLTAP LTP110 Equipment Preventive Maintenance (PM) course: "Upon completion of this training, participants will be able to use a consistent methodology to perform equipment pre-trip inspections to locate, identify and correct PM

problems."
- It's faster for new employees to assimilate into the organization.
- Formal training can include a variety of training methods conforming to adult learning principles that include:
  - Instructor-led training (ILT), where an in-person instructor is in the same room as the learning audience.
  - Web Based Training (WBT), also known as Online training, is typically where an employee is logged onto a website that accesses a course (such as Defensive Driving) and completes it. Usually, there is a method of tracking the course completion if needed by employee name or employee ID number.
  - Blended is a combination of both ILT and WBT. It is often used by having a prerequisite part of a class completed in a WBT format to prepare an employee with basic information, and then the employee attends the ILT portion of the class. It can also be reversed where an employee completes a class in ILT mode and then does an assessment test later in a WBT format.
  - Virtual training came on strong during the COVID-19 pandemic. This training is led by a live instructor but is done through a virtual environment such as Zoom, WebEx, or MS Teams. Instruction is provided, and the instructor requests feedback and answers from participants.
  - Simulators are an excellent way for equipment operators and drivers to learn in a safe environment how to operate equipment or drive in adverse conditions. For example, companies will bring simulators on site for drivers of snowplows and snowplow-equipped trucks to practice on before snow and ice season. Other companies will bring on-site simulators for equipment, such as forklifts, backhoes, wheel loaders, excavators, and many other types of equipment. While renting a simulator may not be cost-effective for your city or county, if you pool resources and cost share with adjacent counties and cities, simulators become cost-effective. Simulator training pays for itself by reducing the learning curve for new operators and reducing the damage to equipment.

Formal training can have some downsides. Some of those are:
- This type of training is typically focused on employee engagement during the actual instruction. Some employees do not speak up or ask questions. They must be encouraged to ask questions as it's part of the learning process.
- Some employees may see mandatory training negatively because of past experiences or because they don't feel it is effective.
- Getting employees to buy into the training is essential. If they don't, they are likely to disengage and learn little to nothing if they feel they're being forced to do something that isn't worthwhile.

Any formal training delivered by an outside provider or internally needs to focus on getting the training to stick with the employee. Following these three steps will make all the difference.

1. Tell them how it should be done.
2. Show them how it should be done.
3. Have them show you how it should be done.

Informal
Informal learning can take many different forms. For example, you learn informally by reading blogs or articles, watching video tutorials, listening to podcasts, attending workshops or conferences, participating in online forums or discussion groups, or experimenting independently.

On-the-job (OJT) training and mentoring are informal and occur outside a formal educational setting. It is often unstructured and self-directed and doesn't usually lead to certification or program completion. Instead, informal learning is designed to help people acquire new knowledge or skills for personal or professional development.

Informal learning is often more flexible than formal learning, as the curriculum, assessment methods, or deadlines do not constrain it. Learners can set goals and tailor their education to their needs and interests.

An informal training strategy, also known as elective, optional, or self-directed, has some benefits over formal training:

- It is less costly and is time efficient.
- It provides "training on demand" during times of reduced work productivity because of inclement weather or during holidays, when employees can take advantage of online courses.
- It can be more personal and less intimidating, such as a mentoring session.
- Subject matter experts tend to be more willing to share knowledge in this learning environment.

New Hire Training

Some topics should be mandatory for all new hires, and some training is recommended for a specific refresher cycle, such as every two years. If you are hiring employees and providing very little or no training, you are setting your employee up for failure, possibly injury on the job, and damage to equipment.

New hire training should be completed as soon as possible, preferably within the first two weeks of hire. Some training should be done with new hires on Day One. It sets the tone for the employee that you are serious about training as an employer. If you provide training, and if your training is safety-centric, it sets the example that safety is essential to all aspects of the job.

OSHA-based safety training is the best standard in the workplace. Train your employees on OSHA regulations. You will accomplish standards that are easy to defend in the case of accidents or injuries.

The same principle of following standards and regulations also applies to other training courses that the TxLTAP Programs conduct, such as the Flagging and Work Zone Traffic Control courses. The Texas Manual on Traffic Control Devices (MUTCD) is "the authority" that all cities and counties in Texas are to follow regarding signage, markings, traffic control setup, worker safety, etc.

The following list is not shown in order of priority or suggested order in which to take; they are shown in alphabetic order.

Training Topic [1][2][3][4][5][6]	OSHA Standard	Refresher
Active Shooter		Every 2 years
Blood Borne Pathogens	1910.1030 (g)(2)	Annual
Confined Space Entry	1910.146(g)	Performance
Cyber Security		Every 2 years
Defensive Driving or Smith Driving System		Every 3 years
EEOC (includes anti-harassment, diversity & inclusion, and retaliation)		Every 2 years
Electrical Safety	1910.137	Performance
Emergency Action Plan	1910.38	Every 2 years
Ergonomics and Safe Lifting		Every 3 years
Ethics		Every 2 years
Fall Protection	1910 Subpart D, F, I	Performance
First Aid	1910.151	Every 3 years
Hazardous Communications	1910.1200	Every 3 years
Lock Out / Tag Out	1910.147(c)(7)	Performance
Organization Mission, Goals, Values		New Hire
Organization Structure		New Hire
Personal Protective Equipment	1910.132 and 134	Performance
Power and Hand Tools, use of	1926.21(b)(2)	Performance
Substance Abuse		Every 3 years
Trench, Shoring, and Excavation	1926.21(b)(2)	Performance
Workplace Violence		Every 3 years

1. Training Topic: Employees should be trained to perform their job activities safely. Training on these topics is expected if employees conduct these tasks. If these tasks are not conducted at your workplace, then the training is not required or recommended.

2. Job Titles that Require Training: Train employees in a particular competency if their job duties require that activity. For example, all employees assigned to operate various power and hand tools should be trained on their proper use. Employees who will not work with power and hand tools do not need to complete that training.

3. Length of Training Session: Most training topics can be effectively covered in less than one hour (Example: Hazard communication, PPE). A longer length of time may be required for confined space entry. The length of the training should be appropriate to the topic of training. It should never be time condensed for the sake of time. The length of the training should cover all pertinent points to keep the worker and others safe.

4. Proof of Training: Keeping a training attendance log is highly recommended. This is a part of your risk reduction strategy and serves as documentation of training completed by each employee.

5. Initial Training: Training should be provided before the employee is assigned to perform the task. This is similar to "new hire" training but can also occur if the person's job duties expand or significantly change.

6. Performance-Based Refresher Training: Some OSHA standards mandate Annual training. Most training topics are "performance-based" or are recommended on a particular cycle, such as every two years. This means repeating the training when:
   a. You have reason to believe that there are deviations from or inadequacies in the employee's knowledge to perform the task safely.
   b. New equipment or chemicals introduced present new hazards to the work area.
   c. There is a change in procedures that present a hazard to which the employee has not been trained.

Recommended Training for Supervisors and Managers

In addition to the new hire training that supervisors and managers should complete, developmental training courses are suggested for supervisory positions. Being a manager or supervisor brings unique challenges and responsibilities they must apply on the job if they are going to be successful.

Also, it is beneficial for supervisors and managers to take and complete employee technical training for their benefit and to show their employees they are serious about knowing the topic. An example would be taking a Work Zone Traffic Control class with their employees.

The following list is not all-inclusive of the training supervisors and managers should take, but it lists suggested topics to help them succeed. This list is not rank-ordered or prioritized; it is listed alphabetically.

Accountability and Taking Ownership
One of the worst offenses a supervisor or manager could commit is blaming failure on a team member. If a manager or supervisor oversees a project that goes off schedule, costs more than budgeted, or does not meet project expectations, the manager should be ready to accept the blame. If the project succeeds, the credit must go to the team. These basics of accountability and taking ownership are covered in the TxLTAP LTP404 Basic Supervision and Management course that we can bring to your organization.

Coaching
Coaching is a daily action that supervisors and managers should engage in. It would help if you worked with your employees daily, providing feedback on their task completion and guidance when needed. Coaching activities must occur more frequently with bottom performers, as the goal is to salvage them and turn them into top-performing employees.

Conflict Resolution Strategies
Conflict is going to take place in the workplace; it is inevitable. A manager or supervisor must know how to de-escalate and handle conflict before it becomes a full-blown crisis. TxLTAP provides the LTP400 Managing Conflict in the Workplace course that your managers and supervisors will find beneficial to them.

Counseling and Disciplinary Actions
Counseling employees and possibly having further disciplinary actions are some of the least favorite jobs a supervisor or manager must do. There are correct ways to counsel and discipline and many incorrect ways to go about it.

Managers and supervisors can benefit from the TxLTAP LTP400 course on how to engage in counseling so that a situation does not get worse. They may also benefit from the TxLTAP LTP404 on how to document counseling and properly escalate disciplinary actions that result in a final Performance Improvement Plan (PIP). TxLTAP consultants can also provide workshops on writing and delivering PIPs if you need help.

Delegating

Some managers and supervisors have difficulty delegating work for various reasons that are not usually based on reality. In the TxLTAP LTP404 course, we cover work delegation extensively. The correct ways to delegate, the negatives associated with improper delegation, and selecting the right employees to delegate work to.

Effective Communications

Being able to communicate both internally and externally is an essential skill for any supervisor or manager. TxLTAP covers communication skills in its LTP404 course, plus we offer workshops (4 – 8 hours in length) that focus entirely on communication.

Fair Labor Standards Act

Fair Labor Standards Act (FLSA) is about training supervisors on FLSA rules to help managers and supervisors with the law's various provisions. At a minimum, the training should cover overtime requirements, the prohibition against off-the-clock work, and ensuring all work hours are recorded and compensated.

Interviewing and Hiring

If you are a hiring supervisor or manager and have never interviewed or hired people before, it's a skill that requires some coaching and training to do it properly. At present, TxLTAP does not have an interviewing and hiring course. In the absence of formal training, if you have a Human Resources Officer (HRO) or Human Resources (HR) department, they are an invaluable resource to use for some basic guidelines. Professional organizations such as the Texas Association of Counties and the Texas Municipal League are excellent resources for guidelines and possible training opportunities.

Performance Plans and Performance Evaluations

Many managers and supervisors struggle with writing performance plans and conducting performance evaluations. It's not fun or easy. It is not a skill you acquire independently; you need coaching and training to do evaluations consistently, without bias, and honestly.

TxLTAP is developing a new Performance Plan and Performance Evaluations for Supervisors course to be launched in November 2023. Once the course is finalized and ready for delivery, an announcement will be sent to contact lists across the state to advise of the new course, plus the availability of the course will be presented at various conferences and on the TxLTAP website.

Problem-Solving Skills

Problem-solving skills fall into two main categories: problem-solving related to employee or citizen issues and problem-solving for technical or workflow processes. Many new supervisors and managers try to "wing it" to develop solutions. While this may work on some occasions, when faced with complex personnel and technical issues combined, you need a foundation in problem-solving skills. The TxLTAP LTP404 course provides a 9–step problem-solving solution that managers and supervisors can benefit from.

Relationship and Team Building
Building solid relationships not only with your team but with peers, coworkers, members of the public, management, and elected officials is a skill set you need to have as a supervisor or manager. Coaching and mentoring from a respected person in your organization will get you ahead in the building relationships minefield. Building your team is up to you. The modules in the TxLTAP LTP400 and LTP404 courses address relationship and team-building tips and advice.

Substance Abuse for Supervisors
A job often overlooked is for supervisors and managers to be on the outlook for employees who may exhibit substance or alcohol abuse symptoms. This is especially important when you have regulated employees who perform duties such as driving for your organization (think Class A and B CDL holders), employees who operate heavy equipment, employees who handle sensitive information such as personnel files, and those who handle money.

If you have an HRO or HR department, typically, they can help you with this type of information or training. If not, obtaining an outside training vendor to provide this service is highly recommended.

Time Management and Priorities
Supervisors and managers often face competing priorities demanding your time, attention, and resources. You need to be able to prioritize your tasks and requests to meet the demands of those asking or demanding. You must also know how to manage your time to meet the demands of as many tasks as possible.

While the TxLTAP Program does not offer a formal class on time management and priorities, we offer informal workshops that provide guidance and advice. Numerous companies offer this type of training at reasonable costs where you may have to travel to a different location, or they can dedicate the class to your employees for a higher price.

Workplace Violence for Supervisors
Like substance abuse for supervisors, detecting and addressing workplace violence is critical in today's work environment. We read and see on the news and on social media of violent acts that occur in the workplace. Being able to head off problems before they turn into violence is a direct duty of the supervisor. You need to be trained on what to look for and how to respond to potential problems.

Again, use your HRO or HR department to assist in getting this type of training.

Targeted Training for Public Works/Road and Bridge Employees

The following list reflects training classes that the TxLTAP Program offers, which a live instructor delivers on-site in your city or county. TxLTAP is constantly adding new courses, so check the TxLTAP website at https://txltap.org/ for the latest list of available courses.

See Attachment A: TxLTAP Instructor-Led Courses: Description and Learning Objectives to this *Guide* that provides detailed information about all our instructor-led courses, including the length of the course, the maximum number of participants allowed, the target audience or who best benefits from the course, a description of the course, and the learning objectives.

EL203 Electrical Safety

EXC201 Excavation Safety Competent Person Training Program

FP204 Fall Protection Safety

LN201 Tree Trimming Safety Awareness

EDC003 Focus on Reducing Rural Roadway Departures (FoRRRwD)

EDC004 Safe Transportation for Everyday Pedestrians (STEP)

EDC005 Project Bundling

EDC006 Community Connections

LTP100 Work Zone Safety: Temporary Traffic Control

LTP110 Equipment Preventive Maintenance – 8-hour version

LTP111 Equipment Preventive Maintenance – 16-hour version

LTP120 Asphalt Distributor

LTP123 Asphalt Operations Training

LTP125 Forklift

LTP126 Rough Terrain Forklift/Reach Lift

LTP127 Aerial/Scissor Lift

LTP130 Motor Grader – Beginner

LTP132 Motor Grader – Advanced

LTP140 Excavator (Telescoping Boom/Gradall)

LTP141 Excavator (Articulating Boom)

LTP142 Mini Excavator

LTP145 Dozer

LTP155 Backhoe/Front End Loader

LTP160 Wheel Loader

LTP161 Track Loader

LTP164 Sweeper (Street – Regenerative)

LTP166 Rotary Broom Operator

LTP170 Vehicle Backing Safety (2-hour, 4-hour, or 8-hour versions available)

LTP172 Equipment Load and Tie Down

LTP179 Bucket Truck Operator

LTP180 Bucket Truck/Digger Derrick

LTP192 Skid Steer

LTP193 Roller (Steel Wheel or Pneumatic)

LTP194 Compactor

LTP210 Planning Work Zone Traffic Control

LTP220 Heavy Equipment for Wildfire

LTP300 Flagger Training (English and Spanish versions available)

LTP400 Managing Conflict in the Workplace

LTP401 Work Zone Construction Site Safety

LTP411 Public Works Safety Overview

LTP404 Basic Supervision and Management Skills

LTP405 Developing Employee Performance Plans and Conducting Employee Evaluations

LTP511 Metal Beam Guard Fence (Guardrail) Installation and Maintenance

LTP515 Installation and Maintenance of Signs and Pavement Markings

LTP520 Work Zone Traffic Control/Qualified Flagger

LTP521 TMUTCD Update and Work Zone Refresher

LTP610 Storm Drainage Pipe Installation
LTP611 Storm Drainage Pipe and Precast Culvert Installation Best Practices
UTL101 Subsurface Utility Locating and Marking Workshop
UTL102 Advanced Utility Locator Training

Training Plans and Matrices

Consultants with the TxLTAP Program have developed training plans and matrices for numerous cities and counties. These plans are unique to each city and county's specific operational challenges and needs. TxLTAP does not use a "cookie cutter" or "one-size-fits-all" approach to developing these plans, as the needs of each city or county are different.

Training matrices have been developed for the following job classifications.

- Construction Inspectors I and II
- Crew Leaders/Foremen – Public Works/Road & Bridge
- Equipment Operators I, II, III, and IV
- Fleet Mechanics I, II, and III
- General Laborer
- Maintenance Technicians – Asphalt specialization
- Maintenance Technicians – Concrete specialization
- Maintenance Technicians – Forestry & Vegetation specialization
- Managers/Supervisors – Public Works/Road & Bridge
- Traffic and Signal Technicians I and II
- Truck Drivers I, II, and III

If you have a job classification in your Public Works/Road & Bridge department where TxLTAP does not have a training matrix, contact us to develop one.

A workforce development consultant will come to your location. You will discuss the current state of your workforce, where you want to be in the future, your level of commitment to a training program, and the significant areas of training that you want to be conducted first, such as heavy equipment operations or work zone safety, as examples. Based on your responses, a Work Force Development Plan will be put together along with a Training Matrix.

TxLTAP has recently introduced a model and program designed to develop and train Engineers in Training (EITs), sometimes called Engineering Assistants. The program is called the Engineering Assistant Career Development Program (EACDP). The model recommends developing several components for the program's success, as each element depends on another. The model provides information that should be included in each element. The major components of an EACDP are:

- EACDP Guide
- Job Rotation Program
- Summary Record Experience
- Engineer Assistant Group
- Mentoring Program
- Continuing Education and Personal Development

The following example Training Matrix was developed for a major metro city public works department with over 600 employees. The matrix shown is for a Street Maintenance Technician.

Time Silo 1 Day 1 - 12 months Street Maintenance Technician
90 hours Safety & Traffic = 36 hrs. Personal Dev & Communications = 2 hrs. Core Skills = 48 hrs.
Safety & Traffic
LTP411 Public Works Safety Overview (4 hrs.)
LTP401 Work Zone Construction Site Safety (12 hrs.)
LTP520 Work Zone Traffic Control/Qualified Flagger (16 hrs.)
TC3TS002-15-T1 Safe Use of Hand and Power Operated Tools (1 hr.)
TC3TS003-15-T1 Safe Use of Basic Carpentry Tools (3 hrs.)
Personal Development & Communications
TC3ED001-15-T1 Ethics Awareness for the Transportation Industry (1 hrs.)
QLF100 Equipment Skill Assessment (1 hr.)
Core Skills
LTP142 Gradall (32 hrs.)
LTP192 Skid Steer (8 hrs.)
LTP193 Roller (8 hrs.)
Optional Development (above base hours)
TC3TS015-16-T1 Bloodborne Pathogens (1 hr.)
TC3ED005-19-T1 Math Basics for Maintenance Technicians (1.5 hrs.)

All TxLTAP Training Matrices are developed and provided in the format shown here in an Excel spreadsheet.
A time silo is only a period of time (one year) the Silo starts when your training program starts, you decide that.
Training is listed in four major categories:

- Safety and Traffic
- Personal Development & Communications
- Core Skills
- Optional Development

At the top are the total training hours suggested during the first 12 months, then for each training category.

In time Silo 2 for a Street Maintenance Technician, the total hours of training are suggested at 88.5 hours. Note in Silo 1, the total Safety and Traffic hours are suggested at 36. In Silo 2, Traffic and Safety are suggested at 12 hours and Core skills increase from 48 hours in Silo 1 to 64 hours in Silo 2.

Of other interest is the suggested use of online training that is taken on the AASHTO/TC3 website and is free to Public Works/Road & Bridge employees in cities and counties in Texas.

The next major section, titled *No Cost, Low-Cost Training Providers for Public Works/Road and Bridge Employees* will provide the details on how to access the available online courses.

Time Silo 2 13 - 24 months Street Maintenance Technician
88.5 hours Safety & Traffic = 12 hrs. Personal Dev & Communications = 12.5 hrs. Core Skills = 64 hrs.
Safety & Traffic
LTP170 Vehicle Backing Safety (4 hrs.)
LND201 Tree Trimming Awareness (8 hrs.)
Personal Development & Communications
TC3CN006-16-T1 Bolted Connections (4 hrs.)
TC3CN041-16-T1 Guardrail Series: Guardrail Basics (2 hrs.)
TC3CN042-17-T1 Guardrail Series: Installation and Inspection of New Guardrails (2.5 hrs.)
TC3MN029-16-T1 Guardrail Series: Maintenance and Repair (1.5 hrs.)
TC3CN009-15-T1 Plan Reading: Basics (1 hr.)
TC3CN016-15-T1 Plan Reading: Culvert Plans (1.5 hrs.)
Core Skills
LTP141 Excavator (Articulating Boom) (32 hrs.)
LTP160 Wheel Loader (16 hrs.)
LTP194 Compactor (8 hrs.)
LTP172 Equipment Load & Tie Down (8 hrs.)
Optional Development (above base hours)
AT-TC3MN015-T1 Maintenance Series: Pavement Preservation Program (1 hr.)
AT-TC3MN021-T1 Maintenance Series: Roadside Vegetation Management (1 hr.)
Any not completed in Time Silo 1
Other local or AASHTO/TC3 training identified by Supervisor

Time Silo 3
Time Silo 3
25 - 36 months
Street Maintenance Technician

90 hours
Safety & Traffic = 9 hrs.
Personal Dev & Communications = 9 hrs.
Core Skills = 72 hrs.
Safety & Traffic
EXC201 Excavation Safety (8 hrs.)
TC3TS014-15-T1 Maintenance of Drainage Features for Safety (1 hr.)
Personal Development & Communications
TC3CN024-15-T1 Earthwork: Excavation (3 hrs.)
TC3CN025-15-T1 Earthwork: Fill Placement (4 hrs.)
TC3TS013-15-T1 Job Safety Analysis (2 hrs.)
Core Skills
LTP155 Backhoe/Front End Loader (32 hrs.)
LTP130, 131 132 Maintainer (Basic, Intermediate, Advanced) (32 hrs.)
LTP166 Rotary Broom (8 hrs.)
Optional Development (above base hours)
TC3CN087-18-T1 Intelligent Compaction (2 hrs.)
Pavement Preservation Concepts (1 hr.)
Any not completed in Time Silo 1 or 2
Other local or AASHTO/TC3 training identified by Supervisor

In Silo 3, or year three in the training program, we see a continued increase and focus on Core Skills.

New training opportunities are introduced that was not scheduled in Silo 1 or 2. This does not mean that the suggested training always takes place in the Silo in which they are shown. You have the flexibility to schedule what courses are best for you and your workforce when you want them.

In Silo 4, or the fourth year of the program, more training is proposed to be online courses to reinforce prior training and to continue to introduce new topics that will benefit the workforce and your operation.

The same level of training was provided (89 hours or over two weeks) remains, but with a concentration on core skills. If you wish for your plan to have less of a concentration on core skills and more of a focus on safety in Silo 4; the plan can be developed that way for you.

Time Silo 4
Time Silo 4
37 - 48 months
Street Maintenance Technician

89.5 hours
Safety & Traffic = 8 hrs.
Personal Dev & Communications = 9.5 hrs.
Core Skills = 72 hrs.
Safety & Traffic
LTP521 TMUTCD Update and Work Zone Refresher (8 hrs.)
Personal Development & Communications
AT-TC3MN016-T1 Maintenance Series: Shaping and Shoulders (1.5 hrs.)
AT-TC3MN019-T1 Maintenance Series: Roadway Drainage (1 hr.)
TC3CN018-15-T1 Pipe Installation, Inspection and Quality (7 hrs.)
Core Skills
LTP120 Asphalt Distributor (32 hrs.)
LTP110 Equipment Preventive Maintenance (8 hrs.)
LTP175 Profiler (32 hrs.)
Optional Development (above base hours)
PCC = Portland Cement Concrete
TC3MS005-15-T1 PCC: Materials Fundamentals (2 hrs.)
TC3MS009-15-T1 PCC: Basics of Cement Hydration (1 hr.)
Any not completed in Time Silo 1, 2 or 3
Other local or AASHTO/TC3 training identified by Supervisor

No-cost, Low-Cost Training Providers for Public Works/Road and Bridge Employees

All the Workforce Development plans and training matrices that TxLTAP develops for you will focus on a three-pronged approach to training from providers that offer no-cost or low-cost training solutions. Let's look at the three prime providers.

Texas Local Technical Assistance Program (TxLTAP)

The Texas Local Technical Assistance (TxLTAP) program has existed for over 35 years. Its mission has evolved and expanded over the years to provide various services to the cities and counties in Texas. The program is funded by the Texas Department of Transportation and the Federal Highway Administration so that the cities and counties may use the services and training of TxLTAP for no cost. Let's look at some of the services and training that TxLTAP provides.

Instructor-led Training
All TxLTAP courses are instructor-led. We offer over 50 courses, as reflected in the section titled *Targeted Training for Public Works/Road and Bridge Employees* in this *Guide*.
See Attachment A: TxLTAP Instructor-Led Courses: Description and Learning Objectives to this *Guide* that provides detailed information about our instructor-led courses.

Consulting Services
TxLTAP has a variety of consultants who provide services to your city or county for no cost to you. These highly experienced consultants can provide the following:
- Work Force Development programs include developing training plans tailored to your specific needs.
- Technical Assistance, such as coming onsite and providing guidance on improving drainage, road conditions, or signage needs.
- Engineering Guidance where one of our licensed Professional Engineers (P.E.) will come onsite and provide guidance and advice on items that require the expertise of a P.E.
- Workflow Processes include analyzing how you do tasks or work today, recommending improvements from identifying bottlenecks and out-of-sequence work tasks, and implementing efficiencies.

Lending library
The TxLTAP Program has equipment to loan out to you for use. Many of these items are too expensive to purchase or rent for municipalities or counties that operate on limited budgets. We also have a library of training DVDs on various topics. To check out equipment or videos, go to https://txltap.org/ > Library > Equipment Checkout and select those items.

Equipment
- RoadVista 922 Handheld Retroreflectometer
- Rieker Electronics Digital Inclinometer
- TC400 Portable Radar Sign
- MetroCount RoadPod® Vehicle Traffic Counter
- AMS Dual Mass Dynamic Cone Penetrator

<u>Videos</u>

- JJ Keller Training on Demand Videos (DVD format) – titles include:
  - Fall Protection for General Industry
  - Vehicle Inspections: Tractor Trailers
  - Workplace Safety Basics
  - Personal Protective Equipment: Employee Essentials
  - Confined Spaces: Entry Team Training for Construction Activities
  - Bucket Truck Safety Training for Operators
  - Driver Training Series: Extreme Weather Driving
  - Backing & Parking: Straight Truck Series
  - Vehicle Inspections: Straight Truck Series
- Atlantic Training videos – titles include:
  - Lockout Tagout: Secure Safely (English & Spanish)
  - Trenching and Shoring Safety (English & Spanish)
  - Crane Safety: Rigging
  - Chainsaw Safety (English & Spanish)
  - Backhoe Operations for Public Works
  - Skid Steer Safety
  - Front End Loader Safety
  - Aerial Lifts (English & Spanish)

TxLTAP Training Videos

Several professionally produced videos are available on the TxLTAP website. They are located at https://txltap.org/ > Library > TxLTAP Video Resources. These videos may be accessed on the TxLTAP site, directing you to YouTube. Or you can search for TxLTAP videos on YouTube.

- Asphalt Distributor
- Asphalt Profiler
- County Road Maintenance and Inspection
- Cutting a V Ditch
- Dump Truck Pre-Inspection
- Motor Grader – Cutting a Flat Bottom Ditch
- Gradall Operator
- Crane Hand Signals
- Motor Grader – Pre-Inspection
- Loading a Dump Truck from a Stockpile
- Safety Tips When Loading Heavy Equipment
- Street Sweeper
- Work Zone Safety

Technical Papers, Publications, and Reference Materials

Our library has many great resources focused on Public Works/Road & Bridge operations by topic. Some examples include checklists on various crack treatments, chip seals, and micro-surfacing applications. To see and download those resources, go to https://txltap.org/ > Library > Technical Briefing Papers and scroll through the list.

Workshops

In addition to formal training, TxLTAP can provide onsite workshops on topics that interest you or for which you have a need. Topics include various safety issues, communications, and scaled-down formal

classes into a four-hour format. Email TxLTAP at txltap@uta.edu or call us at 817.272.9678 to request a workshop for your organization.

Conference Presentations

TxLTAP Staff and consultants routinely attend conferences and provide technical and informational presentations on numerous topics. Some of the organizations that TxLTAP has presented at include:

- The Texas Association of Counties (TAC)
- Texas A&M AgriLife Extension
- Texas Association of Judges and Commissioners (TAJACA)
- Texas Municipal League (TML)
- The American Public Works Association (APWA) – Texas Chapter
- Texas Association of County Engineers and Road Administrators (TACERA)
- West Texas Rural Counties Association

If your organization needs a presentation at a conference, an educational seminar, a commissioners court, or a city council meeting, email us at txltap@uta.edu or call us at 817.272.9678 to request a presentation for your organization.

Equipment Rodeos

TxLTAP has assisted several counties and cities organize and hold a local Equipment Rodeo for its Public Works/Road & Bridge employees. They have also assisted in helping multiple counties come together to have a regional Equipment Rodeo. Equipment manufacturers and vendors are invited to these events. We can provide judges for the rodeo and other support.   If you are interested in hosting an Equipment Rodeo, email us at txltap@uta.edu or call us at 817.272.9678 to request that assistance.

American Association of State Highway Transportation Officials (AASHTO) and the Transportation Curriculum Coordination Council (TC3)

The best way to describe the AASTO/TC3 training resources program is on their website at https://tc3.transportation.org/.

"TC3 is a technical service program within AASHTO that focuses on developing training products for technical staff in the areas of construction, maintenance, and materials. TC3 has a library of more than 250 online training modules covering a variety of topics in the three primary disciplines. As a national resource, TC3 helps states, local governments, and industry save money at a critical time of infrastructure investment through course development, web-based training, information, and resource sharing that is available at a substantially reduced cost. All 50 state DOTs have used the TC3 web-based training resources, which local governments are also using, plus universities, consultants, contractors, industry, contractor organizations, and international groups.

It has been said that we are all in the business of building and preserving our highways. But how do we collectively build and preserve the best transportation workforce and infrastructure for today and tomorrow? The current economy demands that transportation agencies find creative solutions and cost-effective products to meet existing needs, such as workforce training. TC3's goal is to create and maintain a fully optimized curriculum to respond to the changing needs of the transportation workforce."

AASHTO and TC3 are long-standing and well-known organizations at the state and federal levels. What is interesting about the online classes offered through AASHTO/TC3 is that they are also **NO COST** for your Public Works/Road & Bridge employees to access and complete. This is done through the TxLTAP
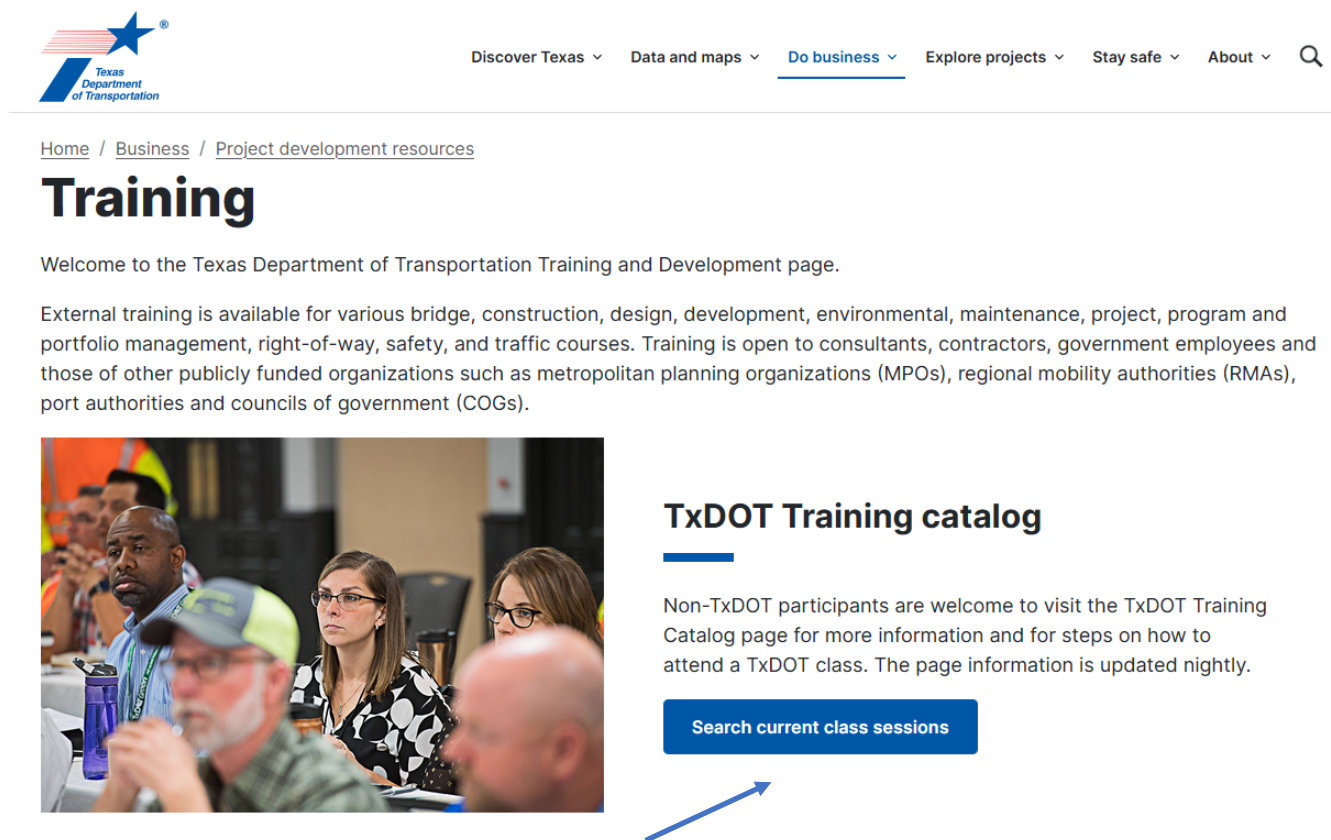
login information that will be provided to you on a requested basis. Please email txltap@uta.edu or call us at 817.272.9678 to get the login information.

Go to Attachment B: AASHTO/TC3 Public Works/Road & Bridge Oriented Online Course Information in the back of this *Guide* for a listing of recommended training courses for Public Works/Road & Bridge employees. All AASHTO/TC3 courses can be taken even if they are not in Attachment C using the login credentials from TxLTAP.

Texas Department of Transportation

The Texas Department of Transportation (TxDOT) provides numerous training courses that city and county employees can attend for free.

To access the TxDOT Training Catalog, go to Training Catalog Training (txdot.gov). As of September 2023, the page should look like this:

Click on the box titled "Search current class sessions," and the next page showing the Training Catalog will appear as shown.

Training Catalog

Texas Construction Career Academy

Public Transportation training videos and presentations

Electrical certification eLearning courses - contractors

Training Catalog

TxDOT's historic preservation process (Section 106)

Class seats will be released to non-TxDOT participants approximately 30-45 days prior to the class start date on a first-come, first-served basis. Forms are processed in the order they are received. The form must be submitted no less than 30 days prior to the class. Late submissions will not be accepted. Enrollments are not guaranteed.

ATTENTION LGP101 Participants: Participants who are local to the AUS, ELP, DAL, FTW, HOU, SAT, and PHR district offices are strongly encouraged to register for an in-person session. Virtual classes are reserved for rural contractors and TxDOT staff.

For National Highway Institute (NHI) course participation, visit the NHI website ☒ to register as a participant. A fee will be required to be paid to NHI prior to receiving enrollment confirmation from TxDOT.

If there are any questions regarding training opportunities, please contact Workforce Development at Training_Requests@txdot.gov.

All session information is updated nightly.

Search Course Catalog

| Search for Keywords, Course & Title |

| Availability ⌄ | ☰ List | 📅 Calendar |

Showing 10 results

Course ⇕	Title	Hours ⇕	Availability ⇕
BRG100	Bridge Construction Inspection	24	Open
CON120	Fundamentals of Concrete 201	8	Open
CON205	Fundamentals of Concrete 101	8	Open

The first course listed in the screenshot is the BRG100 Bridge Construction Inspection course. There are multiple pages of courses you can take. On the Training Catalog page, if the course is shown, it can be taken by city/county employees. Courses that are not open to city/county employees, consultants, and others are not displayed.

Next, a screenshot from page 7 of the Training Catalog is shown. You can see a selection of some of the different available courses.

Let's take a deeper dive into the course TRF203 Risk Management and Tort Liability if you are interested in attending this course. You would click on the course and will get a screenshot as shown below.

Risk Management & Tort Liability

TRF203   24   ⬇ Enrollment Form

Location	Date	Availability
AMA-District HQ	10/17/2023 - 10/19/2023	9/20
VIR-Virtual Instructor-led Training	10/31/2023 - 11/02/2023	3/15
LBB-District HQ	12/05/2023 - 12/07/2023	0/20
WFS-District HQ	01/09/2024 - 01/11/2024	4/20
YKM-District HQ	02/20/2024 - 02/22/2024	1/20
HOU-Metro Houston Maint	03/19/2024 - 03/21/2024	0/20
VIR-Virtual Instructor-led Training	04/23/2024 - 04/25/2024	0/15
VIR-Virtual Instructor-led Training	08/06/2024 - 08/08/2024	0/15

Provides an overview of the basic principles of project risk management that are applied to TxDOT projects to avoid traffic incidents and liability. Legal principles, the Texas Tort Claims Act and the lifecycle of a lawsuit are also covered.

From this example, we can see the locations and dates where the class will be held. Courses shown as VIR-Virtual Instructor-led Training means a live instructor will instruct the class over a virtual network like MS Teams, allowing you to take the class from your office.

You can click on the Enrollment Form on this screen to begin enrollment.

There are a couple of conditions to attending TxDOT courses you must follow:

- You must enroll and be confirmed to be allowed into a TxDOT class. The TxDOT information page (shown below) will walk you through how to register.
- You must complete Form 2256 and submit it. See an example for instructions on completing the form below. Some points are emphasized again here for clarity.
- It is first come, first served to be placed on a waiting list. Typically, TxDOT "opens" its course enrollment 30 – 45 days before the class starts. They allow TxDOT employees to enroll first; then, the class is opened to those on the wait list unless the class session has been filled.
- There is a charge for National Highway Institute classes that TxDOT sponsors. Those classes are charged to TxDOT on a "per seat" basis, so you must pay for those classes.
- No walk-ins are allowed for TxDOT classes. You cannot attend the TxDOT training site and expect to be admitted to the class without prior registration.

The enrollment instructions and conditions are displayed below when the Enrollment Form or Registration is clicked on the menu below.

Non-Texas Department of Transportation Participant Training Request

✓ Instructions

Registration

Confirm and Submit

Instructions for Completing Form 2256

WHO IS ELIGIBLE TO ATTEND?

Certain classes are open to TxDOT retirees, consultants, contractors, government employees and employees of other publicly funded organizations (i.e. Traffic Safety, Public Transportation and Metropolitan Planning Organizations).

REGISTRATION AND CLASS INFORMATION

Participants must be registered in advance and are expected to arrive on time. **Late arrivals and walk- ins will not be permitted.**

The form must be submitted **no less than 30 days prior to the class. Late submissions will not be accepted.**

Active TxDOT employees are enrolled first for all TxDOT classes. Remaining seats will be released for non-TxDOT enrollments **approximately 30-45 days prior to the class date.**

If space is available, you will receive an enrollment notification and a confirmation e-mail will be sent to the participant. **Do not attend the class unless you have received a confirmation e-mail.**

Substitutions may be permitted by contacting Training_Requests@txdot.gov prior to the class.

For National Highway Institute (NHI) course participation, visit the NHI website to register as a participant. A fee will be required to be paid to NHI prior to receiving enrollment confirmation from TxDOT.

If you do not wish to wait to participate in a TxDOT class, or one is not available, you may visit the Texas Local Technical Assistance Program (TxLTAP) for additional training opportunities that may fit your needs.

Questions? Call 512-416-2000 or email Training_Requests@txdot.gov

Next

Click Next at the bottom of the instructions or Registration on the menu at the top left and complete the required information. Once you have the information completed, Confirm and Submit your request.

What is Employee Engagement?

Once we have hired an employee, done a good job of onboarding them, and they have completed some training, it does not mean we now ignore them and only use them as a resource to get the job done. We must continuously engage them throughout their careers if we want them to remain with the organization, grow with it, and be productive.

Depending on your comfort level and your organization's needs, you may choose to use all the suggested Employee Engagement strategies listed or only some of them. At a minimum, you should recognize that the strategies listed work for many organizations when properly implemented and managed. Suggested strategies as part of the continual Employee Engagement process include:

- Personal and Professional Development
- Performance Plans and Performance Evaluations
- Coaching
- Mentoring
- Employee Recognition Programs

Personal and Professional Development

We looked at training and other development activities earlier. Those activities tend to be a snapshot in time, taking a three-day management class and returning to work. Personal and professional development activities are continuous (or should be) throughout our careers.

Personal and professional development activities are similar, but each carries different objectives. Personal development can encompass a variety of training classes or continuing education by taking online courses or going back to college, seminars, and attending networking groups of peers (such as Texas Association of Counties conferences or educational programs, Texas Municipal League conferences or workshops, American Public Works educational seminars, etc.). The primary objectives are:
- To make yourself more efficient and effective on the job.
- To stay current in technology relevant to your area of expertise or job functions.
- To allow yourself to move into similar job opportunities with your organization.
- To improve your self-awareness of how to react to challenges and issues.
- To help you develop relationships with other employees, managers, and others in your networking group.

Personal Development

Let's examine some personal development activities suggested for managers and employees.
Development Activities
- <u>Weekly meetings with your team</u>. You can quickly turn your weekly meetings into a development opportunity. Pick a topic of interest to most of your employees and present it in a 10 to 15-minute discussion with a handout at your next team meeting. Ask others in your crew if they would be

willing to take on the next presentation. Give them your full support to do so.

- Stretch assignments. Beyond a job change, stretch assignments are one of the best ways for employees to learn and develop. As a manager, you can look for opportunities for your employees aligned with their development needs and career aspirations. Don't think about picking the most qualified person for the assignment. Instead, think about choosing the proper developmental work for the person.
- Conferences are not just for supervisors but also employees. When opportunities exist for employees to attend, capitalize on that opportunity and send them. Attending conferences is a great way to learn technical and soft skill learning objectives and provides the opportunity to network with peers. Often, many come back from conferences with contact information of others they met who share the same problems and challenges. Reaching out to peers in other cities and counties is like putting two heads together. You're going to come away with a better solution to the problem than just one person alone would have been able to provide.
- Seminars are generally short, sweet, and specific. They are usually tailored to a particular or set number of technical topics or a sampling of soft skill issues to help prepare employees to assume management positions later in their careers.
- Webinars are a great way to attend training at the office and for a short period. A good example is the Texas Association of Counties, which routinely schedules webinars on various safety topics. The Texas Municipal League has a sound library of online training courses for its members.

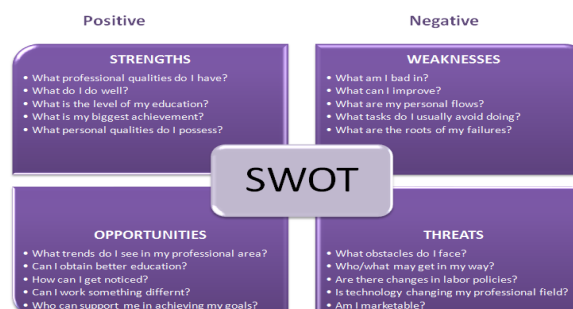*Career Development Plan (CDP) (aka Personal Action Plan)*

CDPs offer guidance and provide a roadmap that helps employees act toward their career goals. It also helps the supervisor by having a plan to look at occasionally to ensure they do their part to develop the employee.

Without a well-defined plan, employees can lose interest in their work and disengage. But when employees work toward a career they have invested time and effort into, they tend to be happier and interested in learning and innovating, thus becoming better performers.

The process of an employee drafting their CDP can help drive engagement. Drafting a CDP involves the employee and their manager giving the employee the reins. Managers should help employees identify what they want to pursue, then arrange and support employees with learning opportunities to make sure they achieve their career goals. When assisting employees in developing a CDP, the following components and steps that you should consider that go into the plan are recommended. We will break them down so you can see the importance of each element.

Self-analysis

The most common tool is the SWOT analysis. SWOT stands for **S**trengths, **W**eaknesses, **O**pportunities, and **T**hreats. Suppose you are honest with yourself about a SWOT analysis. In that case, you can identify where you are strong, where to improve in certain areas, what opportunities you take advantage of, and threats to overcome.

Positive | Negative

STRENGTHS
- What professional qualities do I have?
- What do I do well?
- What is the level of my education?
- What is my biggest achievement?
- What personal qualities do I possess?

WEAKNESSES
- What am I bad in?
- What can I improve?
- What are my personal flaws?
- What tasks do I usually avoid doing?
- What are the roots of my failures?

SWOT

OPPORTUNITIES
- What trends do I see in my professional area?
- Can I obtain better education?
- How can I get noticed?
- Can I work something differnt?
- Who can support me in achieving my goals?

THREATS
- What obstacles do I face?
- Who/what may get in my way?
- Are there changes in labor policies?
- Is technology changing my professional field?
- Am I marketable?

Use the following attributes as thinking points when completing your SWOT analysis.

Strengths are internal positive attributes or capabilities a person has control over and can use fully. These include:
- What skills, competencies, and knowledge do you have over others?
- What are you better at than others?
- What value do you have that others fail to show?
- What do other people see as your strengths?
- Do you have a strong personality and show confidence?
- What achievements are you most proud of?
- What personal resources do you have access to?
- Are you a part of a network no one else is involved in?
- Do you have relationships with influential people?

Weaknesses are internal negative aspects and attributes that a person may have little control over right now but can be changed (which is the whole idea!).
- What work do you usually avoid because of a lack of confidence?
- What do people think your weaknesses are?
- Are you happy with your level of education?
- Are you lacking skills training?
- Do you have a lack of career direction or focus?
- Do you have any negative work habits?

Opportunities are uncontrollable external events a person can potentially leverage.
- Could you create an opportunity by offering solutions to problems?
- Can you create a network of contacts to offer and receive advice?
- What training opportunities exist for you?
- What new technology or technical skills can help you?
- Is there a market demand for your expertise and skills?

Threats are uncontrollable external factors that might overcome or damage your strengths and opportunities.
- What roadblocks do you currently face at work?
- Are any of your peers competing for the same projects?
- Is your role changing in your job?
- Could any of your weaknesses turn into threats?
- Is there unrest in the organization due to politics?

A blank SWOT analysis template is shown at the end of this Stage, and you may also download one from the TxLTAP website at https://txltap.org/ > Library > WFD 5 Stage Model > SWOT Template.

Goals and Interests
After you have completed your SWOT analysis, the next step is to set short-term and long-term goals. Short-term goals could be taking a certain number of management hours or technical training in the next year. A long-term goal would be akin to returning to college and finishing a bachelor's degree in the next four years.
Often, people set lofty goals for themselves. Be realistic. Ask a mentor, trusted peer, or manager to

look at your goals and get another opinion if you are on target or setting the bar too high for yourself. You do not want to disappoint yourself later when you review your accomplishments and do not meet many of the goals you set for yourself.

Interests should not be viewed as "nice to achieve" but as an active part of your plan. Don't be afraid to take risks that can pay off for you regarding your interests. For example, civil engineers often take business courses or even achieve an MBA to help them move laterally in an organization. While they may enjoy the pure engineering aspect of their career in their early years, having a business background allows them to take on higher responsibility jobs.

Expectations of Self and Employer
To meet your goals while working full-time, you need to set expectations for yourself to commit to your plan and not procrastinate. While you have plans on what you wish to do, does your organization support them? An example would be studying and hoping to sit for a Project Manager Professional (PMP®) credential. Does your organization need an employee to have a PMP® certification? If the answer is no, they may not support you in training in that area.

Speak honestly with your manager and identify areas where your organization needs specialized employees or has a continual shortage of employees in a particular job classification. Perhaps it is an area you are interested in, and your organization will likely support you in training and other ways to achieve those goals.

Identify Roadblocks
Roadblocks tie directly back into the Threats in your SWOT analysis. You can address some roadblocks independently; other times, circumstances could be beyond your control. Suppose you identify roadblocks with a high risk associated with them. In that case, it's best to have a backup plan to allow you to move laterally within your organization that falls back into your Opportunities bucket.

Put it in Writing
An old saying in Human Resources is, "If you didn't write it down, it didn't happen." This saying also applies to setting up your CDP and your goals. Putting your plan down on paper serves several purposes:
- You own it. You wrote it, and it's yours to change if you need.
- You still own it. Pull it out a year after doing your CDP and see where you are.
- You still own it. Reassess your goals. Are they realistic? Need more time?
- Do a new CDP and share it with your manager to help keep you on track.

Professional Development
Professional development refers to a broader process that accounts not only for career development but also for personal growth. Typically, career development plans are focused on steps employees can take to further their careers and may apply to all employees in the same job classification. Professional development plans are tailored to each employee's personal and professional growth.

Professional development could be industry certifications demonstrating an employee's knowledge and some degree of experience in that area. Examples would be the PMP®, a Certified Floodplain Manager (CFM), a Certified Public Accountant (CPA), Automotive Service Excellence (ASE), Paving Inspector Certification (PIC), Certified Texas Contract Manager (CTCM), and the list goes on. Ask your Human Resources person or department for help looking at professional certifications that interest you.

Performance Plans and Performance Evaluations

What is the Difference Between a Plan and an Evaluation?

A performance plan should be implemented either at the time of hire or at a regularly scheduled time for all employees, such as September 1 of each year for all employees in the organization. A plan outlines what the manager expects of the employee regarding the quality of work, safety on the job, completion of work tasks, development and training activities, getting along with others, and so on.

A performance plan is a working tool for any supervisor. They should refer to it often to see how any employee is performing. If you are an employee, you should look at the plan occasionally and rate yourself on the expectations of the plan.

A performance evaluation is precisely that, an evaluation of the criteria that were in the plan. The review will rate the individual job activities and general factors of how well employees completed their tasks. It will also acknowledge exceptionally well-done projects by employees, their work ethic, problem-solving skills, etc.

Reasons Why Cities and Counties Do Not Have Plans

It is common knowledge that many cities and counties in Texas do not use performance plans nor conduct performance evaluations on their employees. This business model was decided on for a variety of reasons that could have included:

- Lack of knowledge of writing and closing performance plans and evaluations.
- Didn't want to do the work associated with performance plans and evaluations.
- Could not justify why they should be done; all employees get the same cost of living raises across the board.
- If employees were not performing up to standards, they would be terminated.
- Belief it could override a manager's decision to discipline an employee later if the employee received a good evaluation earlier.
- Fear employees will discuss their evaluation ratings with others and spread discord among the team.

These reasons, and more, for not having performance plans or evaluations, cannot be justified in today's work environment. Let's look at the benefits of having performance plans and evaluations.

Benefits and Reasons Why Cities and Counties Should Have Plans

- <u>Both the employee and manager know what is expected.</u>
  No more ifs, buts, or I didn't know – plans laid out in writing and acknowledged by the employee and what is expected of them on the job. The plan removes any surprises for managers and employees when they know what is expected.

- <u>The plan allows for employee development.</u>
  All plans should have a section on the evaluation form that allows for documentation of completed development (training) activities in the current evaluation cycle and the next cycle, where a new plan is implemented. Employees should have a definite say in what training they will benefit from to help them grow with the organization.

- Plans substantially reduce the risk of litigation based on employee work habits.
  Plans also document the expectations of the quality, performance, and production expected of all employees and supervisors. Using a standardized evaluation process should remove any personal bias in the ratings. You have documentation based on criteria that should be applied equally to all employees. Having a standardized evaluation process can reduce or eliminate any claims of discrimination.

- Plans and evaluations help combat unfounded unemployment claims from termination.
  If you must do a termination action on an employee because of performance, you will be asked for your termination paperwork by the Texas Workforce Commission. If you have a well-written performance plan and documentation for coaching and progressive steps of failure to perform, your organization can defend against claims without merit.

- Performance plans tied to Job Descriptions.
  It has been noted that some cities and counties in Texas need job descriptions for their employees or have very outdated ones. In 2021, the TxLTAP Program launched a special project funded by the Texas State Transportation Innovation Council that provided ready-to-use Job Descriptions (JDs) for Public Works/Road and Bridge operations in cities and counties. Those JDs can be downloaded from the TxLTAP website at https://txltap.org/ > Library > Job Descriptions. It is highly encouraged to align performance plans with any JDs you use.

- Pay for performance.
  If you use a model of giving all employees the same pay raise across the board, you are punishing your hard workers by rewarding those who do not work as hard with the same pay. Performance evaluations can provide the tool to pay those high performers.

- Keeps the lines of communication open.
  Periodic meetings (suggested every three months) between the supervisor and employee should take place using the performance plan to review where things stand. It allows for open, honest communication to take place.

The Performance Plan and Evaluation Process

Preparing the beginning of the cycle plan, observing, documenting, supporting, and mentoring your employees, followed by discussing, closing out the evaluation and preparing again for the new performance plan, which is a cyclic process, as shown in this illustration. The evaluation process never stops; it is continual.

Source: The University of Texas at Arlington DED, TxLTAP.org

Goals of Evaluations

Taken from the TxLTAP LTP404 Basic Supervision and Management course, you should consider five high-level goals when developing, documenting, and closing evaluations.

1. You and the employee are clear about their goals, required outcomes, and how the success of their contributions will be measured and recorded. Your goal in an employee evaluation is to motivate a high level of quality and quantity in the work the employee produces.

2. The best employee performance evaluation goals include employee development. The employee performance evaluation helps employees accomplish both personal growth and organizational goals. Writing the goals down takes the employee one step closer to achieving them.

3. Use employee performance evaluations to provide legal, ethical, and visible evidence that employees were involved in understanding their jobs' requirements and performance. Reviewing goal setting, performance feedback, and documentation ensures employees understand their required efforts or work. Employee performance evaluations aim to create accurate appraisal documentation to protect the employee and the employer.

4. Another method to try is numeric rankings to compare an employee's performance with those of other employees. It is not recommended to use numeric features in an employee performance evaluation process. Instead, they use rank ordering such as Superior, Exceeds, Meets, Below, and Does Not Meet Expectations.

5. The employee performance evaluation provides evidence for non-discriminatory promotion, pay, and recognition processes. Managers need to perform consistent, regular, and non-discriminatory employee performance evaluations.

Help is on the Way!

Beginning in November 2023, the Texas Local Technical Assistance Program that has brought this model to you will be offering on-site training on developing performance plans, steps on monitoring performance and conducting the performance evaluation to be known and requested as the LTP405 Developing Employee Performance Plans and Conducting Employee Evaluations course.

This 8-hour class will conduct a three-part exercise on writing a plan, monitoring performance, and then writing and scoring a Performance Evaluation.

The class has the following learning objectives:

1. Describe the various needs for having employee Performance Plans in place.
2. Describe the benefits of using Performance Plans and Performance Evaluations.
3. Describe the risks of not having Performance Plans or Performance Evaluations.
4. Describe the various components of a Performance Plan / Performance Evaluation.
5. Explain how Stage 1 - Performance Planning fits into the Development and Evaluation Life Cycle.
6. Demonstrate by interactive exercise how to develop SMART-based job duties.
7. Describe what job duties should be included in a Performance Plan.

8. Describe how Stage 2 – Employee Development of the Development and Evaluation Life Cycle, is critical to making plans and evaluations program succeed.
9. Describe the key areas to use when monitoring and measuring performance.
10. Explain the importance of documenting performance.
11. Describe how Stage 3 – Performance Feedback ties into performing a mid-point check-in.
12. Demonstrate by interactive exercise how to prepare, conduct, and document a mid-point check-in.
13. Describe the process and benefits of having employees evaluate themselves.
14. Describe the Performance Curve and where employees fit on it.
15. Describe common performance rating problems and how to overcome them.
16. Demonstrate how to develop accurate and factual ratings on performance evaluations.
17. Describe the steps to take when conducting a Performance Evaluation.
18. Demonstrate through a hands-on exercise how to determine and document final ratings and comments on the Performance Evaluation.
19. Describe how to handle challenging situations based on disagreements on supervisor ratings.
20. Describe the importance of properly distributing the Performance Evaluation.
21. Describe the importance of implementing a new Performance Plan as soon as possible.

Also provided to attendees of the class are the following resources:

- Sample Performance Plan / Performance Evaluation Template
- Job Duty Phrases
- Core and Managerial Competency Measurements
- Mid-Point Discussion Topics Document
- Performance Evaluation Phrases

Coaching

What is Coaching?

According to the Indeed.com website, from an article published on April 22, 2022, by the Indeed Editorial Team, <u>What Is Employee Coaching? (Plus Benefits and How To Use It) | Indeed.com</u> "Employee coaching refers to when a leader trains employees to improve their capabilities in the workplace and help them develop new professional skills. It typically involves one-on-one training sessions and team-wide classes about a specific topic. Employee coaching can often help entry-level and mid-level staff members learn how to accomplish certain leadership tasks independently. If a manager spends time away from the workplace, employee coaching can help staff members learn how to accomplish project tasks and department goals independently". The key to coaching is that it is a positive experience designed to help employees.

What are the Differences Between Coaching, Counseling, and Mentoring?

There are distinct differences between coaching, counseling, and mentoring, although many think they are the same. Let's look at a basic definition of each.

- <u>Coaching</u> – Employee coaching refers to when a leader trains employees to improve their capabilities in the workplace and helps them develop new professional skills.
- <u>Counseling</u> – Coaching is performed to prevent counseling. Counseling takes place when coaching has failed. Counseling an employee reflects that the employee chooses not to perform or to meet the set expectations. Counseling is often the first step in developing and implementing a Performance Improvement Plan.
- <u>Mentoring</u> – Mentoring is the practice of someone more experienced sharing resources, knowledge, expertise, and skills with those less experienced. The objective of mentoring is deliberate, facilitated learning.   We will cover mentoring in depth soon.

When Should Coaching Take Place?

It's recommended that coaching take place continuously. It should be a day-to-day activity. Many supervisors perform coaching daily and do not even realize they are doing it. Coaching should be a natural action when working with your employees.

To help supervisors with coaching, consider the following for you to consider when coaching your employees. No two employees should be coached alike. Some are high performers, some are in the middle, and unfortunately, you always have a few at the bottom and need constant attention.

Consider the following from the TxLTAP LTP404 Basic Supervision and Management course, Module 7. If you want to learn more about coaching and other management topics, request the LTP404 Basic Supervision and Management course at your location. Typically, the employees you manage are going to fall into one of three performance categories:

Top Performers – make about 20% of your workforce and can be identified by:
- Perform well in almost everything they take on.
- Learn fast and can apply new knowledge and skills rapidly.
- Transfer learning from one area to another.

- Get things done under tight deadlines and resources.
- Demonstrate the ability to take on stretch assignments.
- Often help team members.
- Are highly interested in personal development.

Middle Performers – make about 70% of your workforce and can be identified by:
- Meet the expectations of the job or position.
- Understand and know the current job well.
- Assume new jobs and roles comfortably and perform well over time.
- Probably promotable (one level vertically or able to move laterally) with development.

Bottom Performers – make about 10% of your workforce and can be identified by:
- Failure to meet job description standards.
- Deliver low-quality work.
- Deliver a low volume of work.
- Habitually have a higher absenteeism rate.
- Demonstrate disruptive or argumentative behavior.
- Subject of constituent/citizen complaints.

The bell curve chart is how your employees fall into a performance category. The goal with coaching is to work with average performers to push them into becoming top performers and work with the non or bottom performers to become average performers. Pay attention to your top performers to ensure they remain at the top of their game.
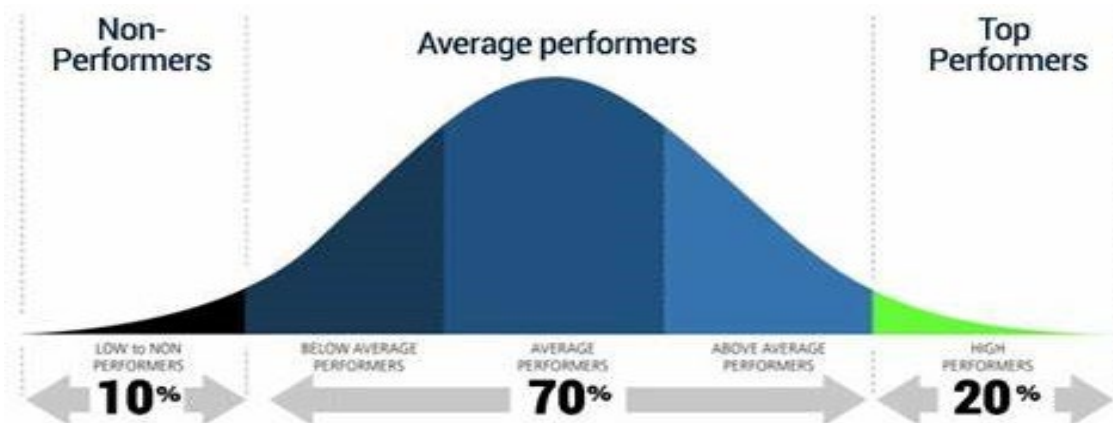
Image Source: 1training.org

Practical Guidance When Coaching

How you coach employees who are top performers versus middle or bottom performers, and vice versa, are all entirely different. Let's look at different approaches that are time-proven to work.

Top Performers are like racing cars; they need to be fed high-octane fuel and let them run wide open. Don't hold them back; use the drive and skills they have to help you.

- Treat them as valuable. So, you probably know that, while not irreplaceable, top performers are extremely valuable. Are you seeing and treating them as such? Ensure you let them know just how valuable they are and compensate accordingly.

70

- Learn the goals and aspirations of these highflyers and help them reach them. What motivates them? What career path do they have in mind? What skills or experiences would they like to have next? If you don't know, find out. Asking and showing genuine interest will go far in building trust and respect with your employees. The information will also help you coach, mentor, and develop your employees more effectively.
- Appreciate them and show them. These workers are valuable, and you need to acknowledge that to them. Give them feedback regularly on their performance. Make it a point to do this in a meaningful and specific way.
- Help them use their strengths. Your top performers generally want to be good at their work. But they can be much more aware of their weaknesses and shortcomings than their strengths. One of the best things a manager can do is help your top performers see their strengths and encourage them to use, hone, and strengthen them instead of focusing on weaknesses.
- Offer them resources, tools, and skills. Top performers need to grow. Knowing their strengths, goals, and potential can give you a sense of what they might need next. Ask them what they need, then determine what barriers you can help remove and what resources, training, connections, and experiences will help them move forward faster.
- Challenge them. Sometimes, we grow fastest when we are offered a challenge. Provide a project, situation, or experience that might help them grow as they do the project.
- Ask them to mentor others. Mentors can often learn as much as those they mentor. While top performers may want to find a mentor, encourage them to be a mentor. Let them mentor workers in another department or even provide a different voice and perspective to their peers – maybe even your poorer performers.

Mid-performers present the challenge of learning more about them and customizing your coaching approach. The overall goal with mid-performers is to motivate them to become a top performer.

- Know their values and motivations. Beyond categorizing them, part of getting to know your employees is understanding who they are as professionals and as people, their future hopes, how they feel valued, and how they perceive their contributions. Use what you learn about your employees to deepen your understanding of them and help them realize their short and long-term potential.
- Take the time to set concrete goals. Goal setting for high and low performers is easy. Stretch goals for your high performers and improvement goals for your low performers. Middle performers? A combination of both! Help them set concrete goals that will increase their contribution to the team's goals and satisfaction with their work.
- Focus on recognizing their contributions and improving their contributions. Think about coaching middle performers as a two-pronged strategy. First, you want to maintain your steady, solid performance. Second, you want to help them become even better. This requires a combination of praise for their valued contributions and honest conversations about areas where they should be focusing their improvement efforts. Allow employees to discover their hidden talents by giving them small stretch assignments.
- Move the performance bar. If you provide a positive, motivational work environment, individualized goal setting, performance coaching, and support, you should see performance improvements with your middle performers. When that happens, raise the performance bar as performance improves and the bell curve shifts. You may need to refine your performance standards and evaluation criteria to reflect this new reality of higher overall performance.
- Catch your employees doing good things. The more you focus on finding the good work a middle performer does and praise them for it, the more they will often repeat that good work. Reinforced behavior becomes repeated behavior.

Bottom-performer coaching is not going to be easy.   Be self-aware of your approach, and make sure that you do not always focus on the negatives with the employee who may be salvageable. At the same time, do not ignore your lower performers, which can cause resentment in other team members.

- Provide positive feedback. Try to catch them doing something right and offer some positive feedback. Offering sincere, positive feedback can be powerful.
- Corrective feedback.   An example would be, "I'm going to take some time today and work with you, and I'll retrain you on your job, OK? I don't mind doing that if I have your commitment that you'll stick with it until you're successful". Applying a corrective feedback strategy may help you avoid moving on to a performance improvement plan if the employee is willing to commit and make a change.
- Stop ignoring your bottom performers. It is important to avoid forgetting the bottom performer. You should keep them in the loop, asking them for their input to see if you can turn the situation around by staying positive. Of course, if the employee doesn't improve their behavior or performance to acceptable levels, it might be necessary to terminate, in which case having all the proper documentation is crucial. Your job as a supervisor is to set expectations and apply the consequences. Ultimately, the employee is responsible and accountable for their behavior.

Mentoring

Mentoring involves someone more experienced sharing resources, knowledge, expertise, and skills with those less experienced. The objective of mentoring is deliberate, facilitated learning. Mentoring is a critical component of employee engagement because it allows the employee to benefit from the experiences of other highly skilled and experienced employees in the organization.

Your organization may choose to go the route of informal mentoring. Informal mentoring can occur through interaction with immediate and other supervisors, co-workers, and experienced senior staff. The drawback to informal mentoring is that you do not know if it is taking place.

Formal mentoring is supported via assigned (or chosen) mentors. Mentors should meet with their mentees on a pre-determined schedule your organization chooses, such as every other month.

Benefits of a Mentoring Program

Mentoring programs bring benefits far outweigh the time and effort spent running and maintaining such a program. Some of those benefits include:

- Improved morale and employee satisfaction via a positive, supportive learning organization that fosters personal and professional development.
- Enabled knowledge sharing, transfer, and retention from mentors to mentees.
- Broader understanding of roles, responsibilities, and expectations for the mentees.
- Increased productivity and job performance through shortened learning curves and better-prepared employees.
- Improved quality through consistent adherence to policies, procedures, and methods.
- Mentors gain a new perspective on the challenges and obstacles their mentees face in the workplace that they may not have known.

Matching Mentors and Employees

When selecting and pairing mentors with mentees, it is helpful to remember the following guidelines. Mentors should:

- Be outside the mentee's direct chain of command if possible.
- Have adequate time and accessibility to serve as a mentor.
- Be willing to share expertise and experience.
- Possess good interpersonal communication skills.
- Be respected in the organization.
- Be willing to invest in the mentoring relationship.

When pairing mentors and mentees, try to find matches that fit both participants well. The keys to a successful match are *commitment, communication, and compatibility*. Some factors to consider include the following:

- The mentee's preference (if any).
- Mentor and mentee expectations.
- Areas of expertise or interest.
- The mentee's critical developmental needs.
- Communication styles of teaching and learning.
- Strengths and weaknesses of both the mentor and mentee.

It is essential to realize that finding a perfect match may not always be accomplished. Sometimes, mentees need to be assigned to a different mentor. It is critical to provide processes that allow both the mentor and the mentee to supply feedback about the mentoring relationship and allow for pairing modifications.

Being a Mentor

Being a mentor involves a desire to assist any employee in their professional growth. The role of a mentor is to guide the mentee through the program and provide insight into technical and professional situations that may arise throughout their career.

It is not an undertaking that should be taken lightly. An employee in your organization is putting the future of their career goals into your hands. Serve them well and provide sound advice.

Benefits of Being a Mentor

In addition to providing numerous benefits to the organization, a mentor also receives professional and personal benefits from the mentor-mentee relationship. Mentoring can expand the world of both participants. Benefits to mentors include opportunities to:

- Enhance their skills and experience.
- Assist the organization in success by investing in its future through developing and retaining talent.
- Stand out as a valuable, credible leader and subject matter expert.
- Create a legacy by sharing knowledge, expertise, and skills with others.
- Expand their perspective by working with someone with unique skills and experiences to share.

- Feel rewarded by seeing the mentee grow and develop and know that mentoring contributed to that growth.

Characteristics of Good Mentors

Mentoring requires a wide range of qualities and skills. Successful mentors:

- Are eager to share skills, expertise, and advice.
- Are knowledgeable and up-to-date in their field of expertise.
- Are respected in the organization.
- Possess strong interpersonal and communication skills.
- Strive for ongoing personal and professional growth.
- Value the opinions, perspectives, experiences, and differences of others.
- Are available and accessible.

Mentor Objectives

The main objective of a mentor is to provide guidance and advice to their mentee's development. This responsibility challenges the mentor to facilitate the mentee's learning and look for opportunities to share knowledge, skills, and resources. To accomplish this, the mentor must strive for the following key objectives:

- Support the objectives and goals of the mentoring program.
- Build a positive, trusting relationship with the mentee.
- Facilitate the mentee's understanding of your organization's culture, policies, and procedures.
- Assist the mentee in developing their maximum potential.

Mentor Responsibilities

The mentor is responsible for providing guidance and support to their mentees based on developmental needs. This can be accomplished in several ways and in various situations. A mentor wears numerous hats in the relationship with their mentees: teacher, coach, advisor, counselor, model, resource, advocate, listener, guide, encourager, helper, colleague, confidante, facilitator, motivator, and leader.

Specific responsibilities for mentors include:

- Assisting the mentee and the supervisor in developing an individualized training and career development plan. The mentor should plan an initial meeting with the mentee's supervisor to discuss the mentee's career plan.
- Meet frequently (suggested bi-monthly at a minimum) with the mentee to discuss current projects and be available to respond to any inquiries the mentee may have before the next meeting.
- Referring specific questions about projects to the supervisor or project manager.
- Maintaining records to document discussions with the mentee. The records should be available to the mentee, the mentee's supervisor, and Human Resources.
- Meet at least quarterly with the mentee's supervisor to provide progress reports and seek assistance and guidance as appropriate.

Notably, the mentor must know what responsibilities should not be taken on. The following are some general responsibilities of mentors and a list of activities that are *not* the responsibility of a mentor.

Mentors are	
Responsible for:	**Not responsible for:**
- Being a positive role model. - Building a supportive, professional relationship with the employee based on respect, trust, honesty, confidentiality, and effective communication. - Recognizing and capitalizing on learning opportunities and challenges will assist the employee's development. - Serving as a resource for the employee and linking the employee to other appropriate resources inside and outside the organization. - Following through on commitments.	- Managing the employee like they were their supervisor. - Micro-managing the employee. - Doing the employee's work. - Driving the mentoring relationship with the employee. - Being an expert in all areas of the employee's development. - Being the sole motivator and supporter of the employee.

Being a mentor is an honor and a responsibility. As a mentor, take the opportunity to make a positive impact in the organization and on the career of your mentees. Remember that mentoring occurs within the context of a relationship. An effective mentoring relationship is not one in which the mentor is a guru. Instead, it allows mentees to benefit and expand their knowledge, skills, perspectives, and experiences. For this to occur, both parties must be respectful, accountable, open, honest, responsive, and trustworthy. The mentor should set the stage and lead the way.

Mentee Responsibilities to Yourself, Your Supervisor, and Mentor

As a mentee, you are responsible for taking charge of your professional growth and career development. The mentor's role is to help facilitate learning and be a trusted counselor or guide. Your mentor will work with you in various ways to provide support, leadership, and guidance. But ultimately, the success of one's experience in developing themselves hinges on personal involvement.

The mentoring program has some responsibilities you need to follow as a mentee. These include:

- Work with your supervisor and mentor to develop an individualized training and career development plan.
- Meet bi-monthly monthly (at a minimum) with your mentor to discuss current projects and ask questions.
- Address questions to the appropriate resource when possible. For example, project-specific questions should be directed to your supervisor or project manager. Assume responsibility for your career advancement and development.
- Set and achieve goals.
- Seek your mentor's input, information, and assistance and share ideas, questions, and concerns.
- Listen and accept feedback.

- Take appropriate risks and seek to expand opportunities to grow.
- Keep an open mind and consider different points of view while examining alternatives.
- Develop answers and solutions, incorporating input from a variety of sources.
- Show respect, consideration, and commitment.
- Maintain a positive attitude.

Some actions that you will want to avoid involving your mentor and the process include:
- Relying solely on your mentor for career development.
- Becoming overly dependent on the mentor.
- Expecting the mentor to do your work.
- Expecting the mentor to have all the answers.
- Not following through on mentoring commitments, meetings, or deliverables.

Positive Work Values of a Mentee

To maximize the benefits of mentoring, you must be willing to participate in the mentoring and development process. The characteristics listed below will help ensure your success.

- Possess a learning attitude.
- Be self-motivated and be willing to take the initiative.
- Be willing to explore yourself, looking at your strengths and weaknesses.
- Be willing to take risks and move beyond your comfort zone.
- Be open to your mentor's ideas, recommendations, and feedback.
- Be willing to invest time and energy in the relationship.
- Develop and use assertive communication skills. Be open and honest, listen, ask questions, and share information, ideas, and concerns.
- Be trustworthy.
- Meet commitments and maintain confidentiality.
- Be respectful of your mentor and the process.

Mentoring Activities

Interactions between the mentor and the mentee can include various activities. However, some activities are required in the mentoring process. These activities include:

- Conducting mentoring meetings
- Setting goals
- Exchanging feedback.

Conducting Mentoring Meetings

Regular meetings between mentors and mentees should be scheduled. Approaching meetings on an ad hoc basis will not be productive. Schedule meetings and put them as an appointment on hard copy or electronic calendars, whichever you use.

The following guidelines are provided to keep you on track and to hold constructive meetings.
- Create a consistent meeting schedule, with meeting times and locations that work for the mentor and the mentee, such as the second Monday of every other month.

- Be prepared by having questions or thoughts ready, identifying learning opportunities, preparing feedback, and considering what issues or questions may arise. Being prepared shows commitment to the mentoring relationship.
- Develop an agenda – don't leave it up to your mentor to prepare an agenda; as the mentee, you should take the lead with the mentor filling in needed topics.
- Stay focused on removing distractions and avoiding interruptions.
- Adhere to the schedule by beginning and ending on time.
- Summarize the meeting in writing and identify action items.
- Prepare required post-meeting documentation if discussed and agreed on.
- Provide sufficient notice when a meeting is canceled or rescheduled.

The first meeting between the mentor and the mentee is critical as it sets the stage for the relationship and the mentoring process. Below are some key activities to cover:
- Get to know each other.
    - Discover the background and high-level personal information.
- Discuss expectations.
    - Explore each person's expectations of the other and the mentoring relationship.
    - Expectations should be expressed, explored, and mutually agreed upon at the outset.
    - Unmet expectations are often the cause of unsuccessful mentoring relationships.
- Agree on roles and responsibilities.
- Establish boundaries.
    - Discuss ground rules for the relationship and agree to critical items like respect and confidentiality.

- Address administrative items.
    - Review the requirements of the mentoring program and follow-on meeting reporting.
- Review goals and objectives.
    - Determine what the mentee is trying to accomplish through mentoring.
- Develop dates and discussion topics for future meetings.

Ongoing mentoring meetings may include:
- Setting developmental goals.
- Exchanging feedback.
- Addressing questions and concerns.
- Developing ideas and strategies.
- Learning new skills.
- Sharing information.
- Evaluating the effectiveness of the mentor-mentee relationship.

Setting Goals

The mentee is responsible for identifying and achieving their own developmental goals. The mentor can assist by adding specificity and focusing on developing goals.

Setting goals is a skill that can be developed. When creating goals, remember that goals should:

- Align with the mentee's Career Development Plan.
- Target the mentee's career growth that is realistic and achievable.

- Challenge the current skill sets of the mentee and be realistic.
- Not conflict with other goals, procedures, policies, or rules of the organization.
- Define goals to make them as clear and concise as possible.
- Be stated in positive versus negative terms.
- Be performance versus outcome-oriented.
- The goals should be prioritized.
- Be in writing and reviewed periodically in meetings.

Goals should also be **SMART**:
S – Specific
M – Measurable
A – Attainable
R – Relevant
T – Time-bound
For example, a goal that states, "I want to get involved in a professional organization," is not precise enough. A **SMART** goal would be "I plan to attend at least three local project management networking meetings by June 30th".

This latter goal provides specific details, measures accomplishment, is achievable, is pertinent to the mentee's career development, and is timeframe-specific.

Exchanging Feedback

The exchange of feedback is a critical activity in the mentoring process as it is open and honest communication. Feedback teaches all parties, facilitates change, improves performance, and motivates people. It helps people know where they stand and provides valuable information for growth and development.

Feedback is a two-way street: Both mentors and mentees will be giving and receiving feedback from one another. For feedback to be most effective, it should have the following characteristics:

- Purposeful.
  Feedback should have a clear goal. In the case of mentoring, the goal is to further the mentee's learning and development and enhance the mentoring experience.

- Descriptive.
  Feedback should provide the facts, not evaluate them. Describe the behaviors or incidents that led to the feedback, but do not judge or label them.

- Specific.
  Feedback needs to be specific rather than general. Provide details about the behaviors or situations that precipitated your feedback.

- Timely.
  Feedback should be provided promptly. Waiting too long to share feedback reduces its effectiveness.

- Actionable.

Feedback should only be directed towards behaviors the recipient can do something about and ones that apply to the mentoring process.

- Responsive.
  Feedback needs to be a two-way street. Each participant should consider the needs of the other person. Participants should be prepared to listen and engage in dialogue with one another.

Mentors are expected to provide feedback to mentees on development progress, ideas, and performance. Additionally, both the mentor and the mentee are accountable for the quality of the mentoring relationship, and this could also be a topic where feedback is needed.

The feedback exchanged between mentors and mentees will often be positive feedback. However, there may be times when a more complex discussion needs to occur, and constructive feedback must be shared. Below are some ideas to consider when providing constructive feedback.

When Providing Constructive Feedback	
Do	**Don't**
- Meet in an appropriate place for the discussion. - Allow sufficient and flexible time. - Have a focused, purposeful conversation. - Say what you mean. - Anticipate and prepare for emotion. - Be prepared – do your homework. - Make sure you have the facts. - Put yourself in the other person's shoes. - Use the "I" approach, not the "You" approach. - Address the skills that can be corrected. - Work with the other person to develop solutions and action items. - Listen and allow the other person to think and respond. - Express your confidence and support.	- Provide constructive feedback in public. - Rush the conversation. - Stray from the issue or pile on additional topics. - Say what you think the other person wants to hear. - Let emotions get out of control. - Give feedback without preparation or when you are angry. - Make assumptions or jump to conclusions. - Verbally attack or threaten the other person. - Be overly critical. - Communicate that the other person is the problem. - Tell the other person what to do or how to fix the situation. - Control all of the conversations or shut the other person down. - Alienate the other person.

Employee Recognition Programs

The Facts About What Employees Want

It may surprise you, but based on more than 70 years of employee surveys, the Number One category of what **employees** want from their employer is "recognition and appreciation for a job well done." (Source: Surveys conducted by Lawrence Lindahl in 1949, Ken Kovach in 1980, Bob Nelson in 1991,

and the Gallup Poll in 2016 and 2021). Not salary or benefits, personal loyalty, or good working conditions, *but recognition*.

That statistic is powerful. At the same time, managers of those employees ranked recognition and appreciation for a job well done at Number Eight on the survey as what they thought their employees wanted. It shows the disparity between what managers believe their employees want and what employees say.

Benefits of an Employee Recognition Plan

An employee recognition program can have several benefits if structured and managed well.

Some of those benefits include:

- Bring a sense of value and self-worth to employees.
- Provide a positive organizational culture among its employees.
- Statistics show that employee recognition programs help lower attrition rates.
- Improve the perception of management and leadership.
- It may help with the recruiting efforts of the organization.
- The recognition may be for a team effort or special project. If so, this can lead to future team-building efforts as the team has been recognized once and wants to repeat its success.
- Friendly competition may arise from individual or team recognition, leading to higher productivity rates.

Recognition programs fall into two categories: formal and informal. Let's look at them.

Formal Employee Recognition Suggestions

Jim Brintnall, author of "What Makes a Good Reward?" states that rewards should follow the **SMART** philosophy differently from the **SMART** criteria we looked at in Employee Performance Plans and Mentoring. It is recommended that any recognition program developed uses the **SMART** philosophy as a part of its guiding principles.

Sincere: A good reward should reflect genuine appreciation. Token acknowledgments are less successful.
Meaningful: To motivate, rewards should be aligned with the values, goals, and priorities that matter the most.
Adaptable: A diverse workplace requires alternatives. Consider other options to keep your program fresh. There is no single reward format that works for everyone all the time.
Relevant: A personal dimension is important for a good reward. Whether formal or informal, expensive or affordable, recognition will be improved with a personal touch — a little thing makes a big difference.
Timely: Rewards must respond to the behavior they intend to reinforce. Do not let too much time pass; the reward may be devalued and credibility eroded.

When planning and developing formal employee recognition programs, it is suggested that you combine (or they may be separate) three different types of recognition:

- Years of service
- Safety awards

- Exceptional performance

Suppose your organization is working on a limited budget. In that case, getting the most bang for your buck may make sense if you hold a combined event that recognizes years of service, safety awards (usually also based on zero accidents by employees over past years), and exceptional performance. Having one banquet or dinner event versus three separate ones is easier on the budget.

However, suppose you are an organization with a significant number of employees. In that case, it may be beneficial to hold separate events so that the individual events are more intimate and focus on the employee's accomplishments.

Some recognition awards that you may wish to consider are:

- Banquets that could combine all three areas of focus of awards and recognition.
- Commissioner Court meetings to recognize special accomplishments.
- City Council meetings to recognize special accomplishments.
- Employee of the month – certificate and reserved parking space.
- Employee of the year – certificate and reserved parking space.
- Certificate of Years of Service with tiered employee gifts.
- Baseball caps.
- Drink tumblers.
- Paid Leave Award.
- Windbreaker.
- Prepaid $25 VISA/MC Gift Card.
- Soft side cooler.
- Leather Padfolio.

Your imagination is the limit, but you must always stay within your organization's published procurement guidelines.

Informal Employee Recognition Suggestions

Not all employee recognition plans need to be formal. You can informally recognize your employees in many ways that will not take much time or will cost next to nothing to implement and deliver. Some of those suggestions are:

- <u>Send a handwritten thank you note to an employee.</u>
  Let your employee(s) know you've noticed and appreciate their hard work. Better yet, send another thank you note to the employee's spouse or family to let them know you value their family member's contribution to your organization.

- <u>Create a Year in Review booklet</u>.
  Create a year-in-review booklet with pictures of your employees celebrating their proudest achievements at work and home.

- <u>Performance leave</u>.
  If your organization allows it, grant a day or two for exceptional performance. Doing this for all your employees is not the objective. Such a reward should be for going that extra mile.

- <u>Get a traveling trophy.</u>
  Establish a rotating trophy for the employee who exhibits outstanding performance.

- <u>Put up a bulletin board.</u>
  Construct a bulletin board to recognize employees through letters, memos, pictures, thank you, etc. Make it open so peers can also post items to recognize one another.

- <u>Bring in food.</u>
  Everyone loves to eat! This doesn't mean you have to pay out of your pocket as the supervisor unless you are inclined to do so. Having an occasional potluck luncheon with the rest of the day schedule being light in-house activities makes your employees feel appreciated.

- <u>Give credit when credit is due.</u>
  Remember to credit those who have introduced new ideas and completed special projects.

- <u>Conduct regularly scheduled meetings.</u>
  Routine communication with your staff in the way of meetings is important. Set aside time in your regular meetings to recognize achievements by your team.
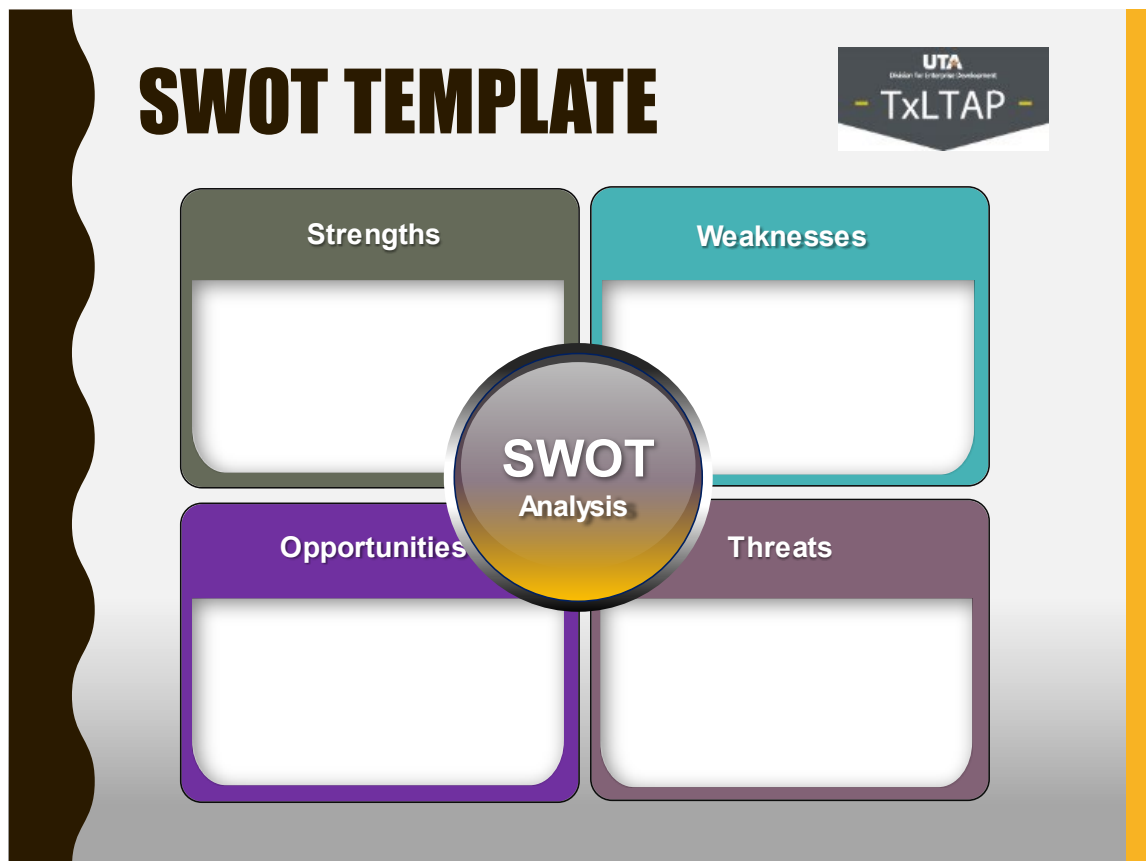
Succession Planning in the Public Sector

In public sector employment, many believe that succession planning is an activity that is not required for their business. This is not true. While public sector employment is set up for a competitive hire system, succession planning should be a routine that cities and counties should strongly consider using. Succession planning in the public sector means assessing your individual employees' potential, strengthening your talent pipeline by making your organization one in which people will want to work, recruiting in new ways, creating leaders throughout the organization, developing employees, and continuously planning succession for all key positions.

Not all suggestions and strategies that will be provided in this stage may apply to your organization depending on its size, the resources you have on hand to manage the process, or your willingness to take on this stage in the lifecycle of an employee.

If you choose not to engage in some form of succession planning, the legacy you leave behind could be one that others do not appreciate having to identify and train new talent. Leave behind a great legacy that future generations of management and workers will remember.

A Warning Regarding Succession Planning

According to Wikipedia, succession planning *"is a process and strategy for replacement planning or passing on leadership roles. It is used to identify and develop new, potential leaders who can move into leadership roles when they become vacant."*

The danger we face when planning and implementing succession planning in the public sector is not to follow the Wikipedia definition blindly, as we are required by law to use competitive hiring practices rather than "appointing or selecting" an internal candidate to move into a leadership role. We will cover overcoming those challenges to conduct succession planning in a public employment environment.

Reasons and Benefits of Succession Planning

Will implementing and managing a succession plan be easy? No. It will take time, dedication, and effort. However, the benefits you will reap from such a plan, no matter what strategies you decide to use, will pay off in the long run. Let's look at some of the reasons and benefits you will realize from succession planning.

Develop the Employees You Have Now
Your organization may sometimes hire for a position open to internal candidates only. If you have yet to develop your internal candidates to their maximum potential, you are doing the employee and your organization a disservice.

Develop Future Leaders
By developing employees to be future leaders, they may come out on top in the competitive hiring process, providing you with an employee who can step into the new role and be effective immediately.

Management Support is Evident
Developing employees to be future leaders demonstrates your willingness and support as an employer and that you have their best interests in mind and want them to remain with your organization.

Skilled Talent on Hand
By adopting succession planning, you can depend on your employees when faced with challenges and still be able to accomplish your goals. It may also help not to be short on talent and needed skills when a key employee suddenly decides to leave.

Close the Competency or Skill Gap
Continual engagement with identified future leaders will help you close competency gaps that may exist. For example, even though you may have low levels of conflict in your workplace, sending a future leader to train on how to manage conflict in the workplace will help prepare them to address issues if they arise.

Reduce Recruiting Costs and Time
Since succession planning takes replacements from within your organization, you can save on costs that would otherwise go to external recruitment. The process for replacement hiring also will be significantly reduced.

Reduce the Loss of Institutional Knowledge
Use your highly experienced and skilled employees to teach others if they are willing. When highly skilled employees retire or leave your organization, they take knowledge that cannot be recaptured if it has not been passed on.

Challenges of Succession Planning in the Public Sector

We all face definite challenges when implementing a succession planning strategy and processes. When planning succession in a public sector environment, you want to avoid some statements and actions. Some advice and guidance to follow include the following:

Competitive Hiring Process
The model of competitive hiring and EEOC requirements is required in the public sector. It is very different in the private sector, where they have more flexibility to do actual hiring based on succession planning.

Remember the advice in Recruiting – Recommended Legal Wording on Job Postings?   It is provided again here with critical wording underlined for reference.

[Organization Name] is an equal opportunity employer committed to diversity and inclusion in the workplace. We prohibit discrimination and harassment of any kind based on race, color, sex, religion, sexual orientation, national origin, disability, genetic information, pregnancy, or any other protected characteristic as outlined by federal, state, or local laws.

This policy applies to all employment practices within our organization, including hiring, recruiting, promotion, termination, layoff, recall, leave of absence, compensation, benefits, training, and apprenticeship. [Organization Name] makes hiring decisions based solely on qualifications, merit, and business needs at the time.

Selective Training and Development Activities

When you conduct training and development activities, you should never intentionally exclude any group or individuals from those activities if they are in the same job classification.

For example, you have eight equipment operators who work for you. You routinely send six of them to training but exclude the other two. You may rationalize that the reason you do not send the two employees is based on the following:

1. Age of the employee. They are older and will retire in a couple of years.
2. The employees say they cannot learn anything new, so you grant their wish and don't send them.
3. You don't think the employee can learn new skills.

Let's look at how you have set yourself up for an EEOC discrimination complaint for each scenario above.
1. If you use age as a reason not to send an employee (too young, too old, it doesn't matter), you have violated one of the key EEOC-protected classes. Just don't go here.
2. More than likely, this conversation has not been documented. The employee may see other employees advancing in positions and pay from their learned skills. They will now file a complaint saying they were left out of training opportunities and are being discriminated against for any number of reasons they can create. Making employees go to training is the solution, even if they are uninterested. If they refuse to attend, you have an insubordination issue that must be documented and will protect you against a discrimination complaint.
3. True, some employees have learning challenges but don't assume that the training will be a waste of time for the employee. If they are routinely left out of training opportunities, they will feel left out of being in on things and may start to exhibit performance problems. This will take more of your time to handle those issues. Give the employee the benefit of the doubt and send them to training.

Selective Job Activities

Complex or challenging jobs often come up. As a supervisor, selecting one of your high performers and assigning them to lead others or handle the job is natural. Choice assignment jobs come about as well. You may have a few favorites that you want to give these jobs. In either scenario, you are intentionally (or unintentionally) eliminating other employees from opportunities to grow in their roles. Have a published rotation list for all employees to see who is up next in line to lead new projects or get the next choice job.

Statements Without Guarantee or Foundation

Never, under any circumstances, tell a person that you are setting them up to take your job as a supervisor when you retire. Once you leave the organization, you can no longer control who is hired to replace you. If you have told an employee who works under you now and they have faith they will be the "chosen one" for your job, and they do not get it, several problems can arise from this scenario.
1. They will resent the organization because they feel they have been pushed aside for a job they had been told was theirs.
2. Most likely, they will not support the new supervisor. After all, someone else has their position now, and why should they help them? They may even resort to outright insubordination and intentionally cause disruptions in the workplace.
3. The performance of this employee will most likely decline.
4. There is a high probability that the organization will lose this employee.

Tips on How to Implement Succession Planning in Your Public Sector Organization

When we think of "succession planning" in a public employment environment, we should focus on "business succession planning," which is subtly different from "personnel succession planning" yet will yield the results we are seeking to maintain business operations. Business succession planning focuses on the business itself, your business of running a department in a city or county.

Let's look at ways we can accomplish "business succession planning" through your personnel while not violating any provisions that the law requires of us in the public sector.

Look to the Future

What kind of workforce will you need in one year, two years, three years, five years, or ten years from now? You need to plan not just to have more employees as your business hopefully grows in alignment with the population of your city or county, but are there new positions you will need? If you project growth in your city/county to double in ten years, more than likely, you will begin to outsource some public works functions such as chip sealing. If you do not have a construction inspector on staff today and project outsourcing will take place, plan on developing your workforce internally for someone to take on an inspector role in a lateral move.

The TxLTAP Program can help with future planning needs. While developing a Workforce Development Plan for a large municipality, a critical need was for approximately 15 employees to receive training on installing and maintaining a Metal Guard Beam Fence (MBGF) system, commonly known as a guardrail. This municipality has an agreement with the Texas Department of Transportation (TxDOT) to maintain and install MBGF systems on TxDOT roads in the municipality's jurisdiction.

Installing and maintaining MBGF systems is not an everyday function most cities or counties perform. It is highly technical and must be done to a precise set of specifications. The municipality TxLTAP was working with had decided to outsource this work since they did not have a workforce who were trained to do this work. When they sent out a Request for Proposal, only one company responded, and they were unreliable by being unable to perform the work when needed. To comply with TxDOT's agreement, the municipality brought the work back internally. TxLTAP has developed the LTP510 Metal Guard Beam Fence and End Treatments, a 12-hour course providing classroom and hands-on exercises.

Prepare Employees for a Role They May or May Not Fill

Even if an employee decides to leave your organization, you should always be in the mindset that you should be developing them to take on new roles even if they choose to leave.

You would be surprised at the number of employees who will leave an employer, take another job, find out it was not what they expected, and then reapply to return to your organization. If you did a good job of developing them before they left, they still have the skills and knowledge you find desirable when filling a vacant position.

Even when you invest the extra time to develop and train an employee who is never provided the opportunity to fill a role, you have a well-rounded and balanced employee who brings those additional skill sets, ways of thinking, problem-solving, and expertise to the table making your team more efficient versus an absence of those skills.

Encourage Employees to Do a SWOT Analysis
We covered how a SWOT analysis should be done and its benefits. Not all employees may want to do one, but that's OK. You need to pay a little more attention to the employees who do and give continual encouragement to develop themselves. By taking the time to do a SWOT analysis, their mindset is to move upward in the organization.

Let Employees Train One Another
Use current highly skilled employees on your staff to help train less experienced employees to prepare them for higher-skilled jobs. The key here is that you do not want bad habits passed down the line to newer employees who do not know any different. It would help if you made sure that the employees you select to pass their knowledge on can do it in a respectful, memorable way.

Encourage Stretch Assignments
We touched on stretch assignments in Employee Engagement. A key in succession planning is not only to encourage employees to take on a stretch assignment but to have a meaningful conversation with the employee in advance and let them know that an upcoming assignment is one you would like them to take. Give them an overview and some details. Tell them your expectations, but not how to run the assignment--that will be up to them. Allow them to make the final decision rather than it being an assignment.

Encourage Professional and Personal Development
Not all training and development employees seeking to advance themselves should occur at work. Employees should be encouraged to develop themselves outside of working hours.

For example, you have an employee who has expressed a desire to become a project manager, as it is a job you plan to create in the next year. While you can help prepare the employee by providing project management training to some degree at work, encourage them to join a local chapter of the Project Management Institute (PMI). Typically, local PMI chapters meet monthly, some bi-monthly. It is a great event to learn more about project management, identify a mentor to help them through the certification process and obtain Professional Development Hours required before certification.

Personal development activities could include employees looking to develop their speaking, presentation, and communication skills. A venue to join would be Toastmasters. A Google search showed several hundred chapters in Texas alone. Toastmasters is an excellent organization for people to improve their speaking, presentation, and communication skills in a non-judgmental environment.

Micro-learning
Managers, mentors, and personnel training others must have the ability to deliver short, easily digestible information and content at the exact moment it is needed. This has become an expectation of employees.

Capturing Institutional Knowledge
Knowing what knowledge is in an organization and _how_ knowledge flows in an organization is essential for successful succession planning. Unfortunately, we do not have a way to extract the knowledge an employee possesses and to be able to implant it into the minds of those who are still on the job. But there are processes we can implement to help with capturing and being able to use that knowledge later. Some suggestions are:

Interviews and Information Capture

Some organizations have a structured approach to interviewing and capturing the knowledge of employees who have given notice of a future departure, such as retirement. Those employers will interview the exiting employee on key processes or tasks they performed. They will transcribe or make the information available through one or more modes of access:

- o Hard copy notes such as a ring binder.
- o Video that was recorded with the exiting employees' permission.
- o Developing the information into an internal online course or PowerPoint presentation.

Standard Operating Procedures (SOPs)

You should have several SOPs covering all aspects of any tasks, processes, and jobs routinely performed. Have your SOPs reviewed annually by well-experienced and knowledgeable employees who can offer sound updates to your SOPs?

Business Continuity Plans (BCPs)

BCPs are close but not the same as an SOP. BCPs are developed on how business functions should be conducted after a major catastrophe such as a fire. Have your most knowledgeable employees review and update your BCPs annually.

Job Duty Analysis (JDAs)

JDAs is a process where employees record what job duties they perform each hour, every day, for five days. The most common job duties are incorporated into SOPs, BCPs, and possibly for Interviews of exiting employees.

Process Flow Charts (PFCs)

PFCs are flow charts laid out in step 1, followed by step 2, then step 3, etc., with loopback alternatives for resolving problems. An example would be the steps to troubleshoot an asphalt distributor with erratic spray patterns.

Job Rotation Programs (JRPs)

Allows existing employees to temporarily move into other jobs and shadow an employee who routinely performs that job.

The 6–Step Succession Planning Model

Following the tips on implementing a succession planning model from above, let's look at a Six Step Model provided to you to put it all together. Skipping one of the steps, however, will leave you with an incomplete cycle, and the probability of failure of the overall strategy is high.

Determine the depth and level of detail you want to put into effect for each step in the model. The larger your organization, the more processes you should have. The smaller your organization, the fewer processes are appropriate.

Identifying Key Positions
Naturally, all management positions should be considered. There are many other key positions in your organization as well. It may be a non-supervisory engineer, a highly skilled equipment operator, a highly experienced inspector, and so on. Your job is to identify those positions that, if left unfilled for more than three to four weeks, would severely impact your business. Flag these positions as "key" and focus on them in your first stage of developing a succession plan for them.

Building Job Profiles
This does not mean just copying the job description for the position you should already have. It means you must dive deeply into all the functions this job position fulfills. For example, if you rely on your engineer to review and approve all utility permits and this position is not filled, you will only be able to issue utility permits once the job is filled again. You can imagine the problems this will create internally and with the public, who expects permits to be issued promptly.

Source: The University of Texas at Arlington DED TxLTAP.org

Assess Current Staff Skill Level
This relates to activities in closing the competency gap. All workforce units have gaps or lack of depth of trained employees to take on specific jobs. For example, your road maintenance section has eight employees, most of whom can operate multiple pieces of equipment well. But you have that one particular operator you use as your "blade man" who handles all your jobs requiring a maintainer. You have not trained or allowed other employees to operate the maintainer because your blade man feels that the machine is "his" and doesn't want anyone else messing with "his" machine.

What happens if your go-to blade man suddenly takes another job or retires? You have no depth of employees in your workforce who can operate the maintainer with any degree of skill.

You need to develop a list of desired skills each employee should have, and if they do not, it's your job to get them the training. When you take all the gaps in your workforce (and using the example above, you have seven employees who need maintainer training), that list will help drive the training you bring to help close the competency gap.

Identifying gaps in a work unit may be challenging. If you need assistance, this project provides on-site assistance to help you identify gaps and build training plans. Contact persons listed on the document *Purpose of This Project* and under the Use of This Guide section to start the process to assist you.

Training Activities

We covered the need for a training matrix and a list of development activities associated with job classifications or positions.

What training activities you schedule for your employees should be based on:
- Competency gaps within your current workforce.
- Commonalities from Career Development Plans (CDPs) – addressed in the next step in this model.
- Planning for future needs, such as adding new roles, positions, or job tasks.
- Immediate needs include a lack of safety training for accidents, injuries, and unsafe operations of heavy equipment.

In addition to formal training, always rely on the micro-learning, mentoring, and on-the-job training activities that should take place.

Development activities should always be made available to all your workforce. For example, a county in far west Texas has begun sponsoring a two-day educational event for all its Road and Bridge (R&B) department employees. They also invite surrounding counties and municipalities to join. Other departments within the county, such as the Sheriff, Fire/EMS, and Risk Management, make several presentations. Outside organizations also attended and provided presentations on Work Zone Traffic Control, safety in the workplace, and other topics related to R&B operations. Concurrently, an Equipment Rodeo is held to test the skills and abilities of drivers and operators. Several equipment vendors also attend to display and provide information on equipment routinely used by R&B departments.

This two-day educational event has more than 200 R&B employees from five counties and several municipalities in attendance. Not only did they learn information and skills, but they also networked with one another to share common issues and solutions to problems.

You can engage your workforce in numerous development activities from large groups, such as in the example provided, one-on-one development, and small groups.

Create Individual Plans

In Employee Engagement, we covered CDPs. One of the keys to CDPs is that the _employee_ needs to develop their plan with guidance and advice from a mentor or supervisor. The components of a SWOT analysis go into a CDP.

The role of a supervisor or other designee who may be handling individual CDPs should review all CDPs that are associated with critical positions. You should look for commonalities and make sure those commonalities are addressed in your training and development activities.

Maintain Skills, Review, and Adapt
Training and development should always continue. If it doesn't, your workforce will become stagnant and unable to keep up with new emerging technologies, such as best practices in road edge maintenance or new ways to cut and repair potholes.

Refresher training should be scheduled for employees to pick up nuances they may have forgotten or did not experience in former baseline training. Safety in the workplace is always a great topic to assist with your risk management processes.

At least once per year, it is recommended that you spend a whole day reviewing where your workforce is skill-wise (step 2) and see if the training and development activities are taking care of the needs on the job profiles (step 1) that you built.

If they are not aligned or being addressed soon, you must change your approach to training and development activities to meet or modify the job profile.

The key to this model is that it is always in motion and does not stop. Keep up the cycle to maintain the best workforce possible.

Course Code: EDC003
Title: Focus on Reducing Rural Roadway Departures (FoRRRwD)
Length: 8 hours
Maximum Number of Participants: 20
Target Audience: Commissioners, Road Administrators, Inspectors, City/County Engineers, Supervisors, Crew leaders, and Foremen who supervise, inspect or work on roadways.
Description: This course is designed for counties and municipalities in the state of Texas to assist them with adopting and implementing proven countermeasures to combat the number of departures on rural roadways and to help reduce the number of fatalities. This course is based on extensive research and proven practices across the nation.
Learning Objectives: Upon completion of this course, participants will be able to:
1. Describe the rural roadway departure crash problem.
2. Identify the three objectives used to combat the problem.
3. Identify proven safety countermeasures to mitigate roadway departures.
4. Recognize the crash reduction potential for individual countermeasures.
5. Recognize why Local Road Safety Plans (LRSP) are needed to help reduce roadway fatalities.
6. Understand why the systemic approach is critical to reducing roadway departures.
7. Understand the difference between systematic and systemic approaches.
8. Be familiar with Texas fatality crash data and how a systemic approach to safety can help.
9. Identify signing and marking countermeasures to reduce roadway departures.
10. Describe the TMUTCD requirements for signing and markings.
11. Identify cost-effective enhancements that exceed TMUTCD requirements.
12. Identify locations with increased friction demand.
13. Name the unique components of the High Friction Surface Treatment (HFST) countermeasure.
14. Recognize the crash reduction potential for High Friction Surface Treatments (HFST).
15. Describe a rumble strip/stripe.
16. Describe placement criteria and installation considerations for rumble strips/stripes.
17. Recognize the crash reduction potential for rumble strips/stripes.
18. Identify countermeasures that can reduce the potential for a crash if a vehicle leaves the roadway.
19. Define the clear zone.
20. Identify crash-worthy sign support systems.
21. Identify the essential elements of barrier systems.
22. Recognize common installation issues for roadside hardware.

Course Code: EDC004
Title: Safe Transportation for Everyday Pedestrians (STEP)
Length: 8 hours
Maximum Number of Participants: 20
Target Audience: Commissioners, Road Administrators, Inspectors, City/County Engineers, Supervisors, Crew leaders, and Foremen who supervise, inspect or work that have pedestrian crossings within their jurisdictions.
Description: This course is designed for counties and municipalities in the state of Texas to assist them with adopting and implementing proven countermeasures to combat the number of fatalities and injuries sustained by pedestrians and cyclists. This course is based on extensive research and proven practices in Texas and nationwide.

Learning Objectives: Upon completion of this course, participants will be able to:

1. Describe Texas's problem regarding deaths and injuries to pedestrians and cyclists.
2. Recite the fatalities associated with pedestrians and cyclists in Texas.
3. Describe the Federal Every Day Counts (EDC) – Safe Transportation for Every Pedestrian (STEP) Program.
4. Describe why we should design and plan transportation systems for pedestrians and cyclists.
5. Describe the Texas Crosswalk definitions and the law regarding them.
6. Describe why pedestrians do not use marked crossings.
7. Describe the relationship between the Texas Manual on Uniform Traffic Control Devices (TMUTCD) and STEP programs.
8. Describe how to improve pedestrian safety at marked and unmarked crossing locations.
9. Describe and apply the Spectacular Seven STEP Improvements:
    a) Crosswalk Visibility Enhancements
    b) Raised Crosswalks
    c) Pedestrian Refuge Island
    d) Rectangular Rapid Flashing Beacon (RRFB)
    e) Pedestrian Hybrid Beacon (PHB)
    f) Road Diets
    g) Leading Pedestrian Interval (LPI)
10. Describe the six steps to select Proven Safety Countermeasures (PSC).
11. Describe the benefits of implementing STEP improvements.

Course Code: EDC005
Title: Project Bundling
Length: 8 hours
Maximum Number of Participants: 20
Target Audience: Any persons involved in the planning, scheduled, and release of contracts for work on facilities, materials, and work on roadways.
Description: This course is designed for counties and municipalities in the state of Texas to assist with the concept of bundling projects to shorten the project delivery process; speed up the rehabilitation of transportation infrastructure; save money via the bundling process; leverage local, state and Federal funding; and use construction industry standards of project and risk management. National case studies will be reviewed, and attendees will develop a project bundling scenario for a fictional Texas community based on bundling concepts they have learned.
Learning Objectives: Upon completion of this course, participants will be able to:

1. Describe the concept of project bundling.
2. Describe the benefits an LPA can realize from using project bundling.
3. Recite the systematic steps that must be followed to implement bundled projects.
4. Describe funding resources that an LPA may use to finance a bundled project.
5. Describe Value Capture and how a city or county can leverage it for financing.
6. Describe the Texas State Infrastructure Bank (SIB) program and how a county or city may use i.t
7. Name the criteria for determining Economically Disadvantaged Counties in Texas for reduced match funding requirements.
8. Describe the primary stakeholder groups that need to be engaged for successful project bundling.
9. Describe the importance of having a robust communication plan.
10. Recite the different types of stakeholder engagement models.

11. Describe the steps in a Risk Management Assessment Program that can be used to address risks in a bundled project.
12. Describe the responses that can be used to address a bundled project's threats and opportunities.
13. Describe the concepts used to determine the size of a project bundle.
14. Describe the various project delivery methods used in Texas.
15. Describe the advantages and disadvantages of the various project delivery methods.
16. Describe the various procurement methods used with bundled projects.
17. Describe the environmental review and permits that may be required on bundled projects.
18. Describe how a bundled project should be managed at the enterprise level.
19. Describe how using a RACI Matrix can help develop the Project Management Plan.
20. Describe the difference between Quality Assurance and Quality Control.
21. Describe the seven steps to close out a project.
22. Describe how my county or city can use components of presented case studies to bundle projects.
23. Apply the concepts of project bundling to scenarios that occur in Texas counties and cities.

Course Code: EDC006
Title: Community Connections
Length: 8 hours
Maximum Number of Participants: 20
Target Audience: Any persons involved in projects' short-term or long-range planning within their jurisdiction and adjoining to other systems.
Description: This course is designed for counties and municipalities in Texas to assist them with Community Connections project information and tools that marry the success of the Every Day Counts (EDC) programs with best practices in transportation planning. EDC is a State-based model that rapidly deploys proven yet underutilized innovations to shorten the project delivery process, enhance roadway safety, reduce traffic congestion, and improve environmental sustainability.
Learning Objectives: Upon completion of this course, participants will be able to:
1. Describe the intent of the EDC Innovation on Community Connections.
2. Describe what is a Connected Community.
3. Recite the Guiding Principles of a Connected Community.
4. Describe the benefits of Community Connection projects.
5. Recite the advantages of using strong community engagement at the beginning of projects.
6. Explain how Community Connections needs to be a touchpoint in all life cycle phases of a transportation project.
7. Discuss how the five Guiding Principles tie into Community Connections action plans.
8. Explain the financial and information resources available for developing and implementing Community Connection projects from the FHWA and TxDOT.
9. Describe how the various Community Connection tools can be used in different project development or implementation stages.
10. Describe successful projects completed using Community Connection tools.
11. Describe how various national Community Connection case studies can be used as a reference and resource tool to implement Community Connections in Texas cities and counties.
12. Describe the Community Connection tools used in the National Case Studies.
13. Describe how various Community Connection approaches have been used in the Texas Community Connection examples.

14. Describe how a Regional Mobility Authority may partner and interact with Community Connection projects in Texas.

Course Code: LTP100
Title: Work Zone Safety: Temporary Traffic Control
Length: 4 hours
Maximum Number of Participants: 20
Target Audience: Field personnel responsible for planning, selection, application, and operation of short-term work zones. Maintenance crews, utility crews, construction personnel, and anyone working in or near a work zone.
Description: This course is designed to introduce established traffic control guidelines for maintenance activities and other short-term operations. The course covers elements of temporary traffic control found within Chapter 6 of the Texas Manual on Uniform Traffic Control Devices (TMUTCD), such as components of a work zone and their respective requirements, proper application of devices, worker safety, and the use of typical applications most often used in short term operations.
Learning Objectives: Upon completion of this course, participants will be able to:
1. Select, design, and use the proper short-term traffic control solution for varying work requirements.
2. Understand where to reference the TMUTCD for Traffic Control Plans (TCP) and/or Typical Applications (TAs).
3. Demonstrate the proper calculation of advance warning space length, taper lengths; buffer lengths; and spacing in taper and tangents.
4. Demonstrate by preparing a TCP and/or TA in a class exercise for flaggers, TMAs, signs, arrow boards, and distances.

Course Code: LTP110
Title: Equipment Preventive Maintenance
Length: 8 hours
Maximum Number of Participants: 15
Target Audience: Equipment operators, mechanics, foremen, and supervisors.
Description: This course is designed for persons not familiar with or who wish to increase their knowledge of routine preventive maintenance of the fleet and heavy equipment. Practical hands-on inspection of 3 – 4 pieces of equipment takes place as a part of this class using standardized TxLTAP PM Inspection Checklists that are provided as a part of the course.
Learning Objectives: Upon completion of this course, participants will be able to:
1. Identify preventive maintenance (PM) issues and take corrective action(s) before leading to more expensive repairs or out-of-service problems.
2. Use a consistent methodology to perform equipment pre-trip inspections to locate, identify and correct PM problems.
3. Explain why pre and post-trip inspections and actions are recommended to extend the lifecycle of equipment.
4. Access and use OEM PM Checklists and Operator Manuals.
5. Use and document the TxLTAP Equipment Preventive Maintenance Inspection Checklists.
6. Demonstrate the use of the TxLTAP Equipment Inspection Checklist and perform a complete PM check on a light-duty truck, dump truck, motor grader, or other equipment selected by the client.

Course Code: LTP111
Title: Equipment Preventive Maintenance
Length: 16 hours
Maximum Number of Participants: 15 hours
Target Audience: Equipment operators, mechanics, foremen, supervisors
Description: The first 8 hours of this course are identical to the LTP110 eight-hour version. This course also includes the ability to inspect up to eight pieces of equipment over two days. Additionally, the PM needed for weather/fire/flood events, a Fleet Telematics system, a Fleet Information Management System (FIMS), and the best practices to develop and use a FIMS internally are covered.
Learning Objectives: Upon completion of this course, participants will be able to:
1. Identify preventive maintenance (PM) issues and take corrective action(s) before more expensive repairs or out-of-service problems.
2. Use a consistent methodology to perform equipment pre-trip inspections to locate, identify and correct PM problems.
3. Explain why pre and post-trip inspections and actions are recommended to extend the equipment lifecycle.
4. Access and use OEM PM Checklists and Operator Manuals.
5. Use and document the TxLTAP Equipment Preventive Maintenance Inspection Checklists.
6. Demonstrate the using the TxLTAP Equipment Inspection Checklist and perform a complete PM check on a light-duty truck, dump truck and motor grader, and three other pieces of equipment selected by the sponsoring supervisor.
7. Describe what post-event maintenance actions are and the steps to complete.
8. Describe a Fleet Telematics system and identify features that would help execute a strong PM Program.
9. Describe a Fleet Management Information System (FMIS) and the key components of such a system.
10. Describe best practices to develop and use a FIMS without a hosted system internally.

Course Code: LTP120
Title: Asphalt Distributor
Length: 32 hours
Maximum Number of Participants: 6
Target Audience: Operators of asphalt distributors, foremen, and supervisors.
Description: Participants will learn safety, pre-operational inspection and preventive maintenance, safety systems, propane tank, and burner specifics; air system maintenance; spray bar and nozzle care, and the correct procedures for filling and draining tanks. Asphalt and emulsion specification, calibrating application rates, and application procedures will also be covered.
Learning Objectives: Upon completion of this course, participants will be able to:
1. Identify and explain the major components of an asphalt distributor.
2. Recite and use operating terms as appropriate for asphalt distributors.
3. Recite PPE and safety procedures that should be used when operating or working around asphalt distributors.
4. Demonstrate the proper inspections to be performed before the operation of the asphalt distributor.
5. Explain the proper preventive maintenance steps on asphalt distributor components.
6. Calculate application rates of various types of asphaltic materials.
7. Describe the proper steps and methods for filling and draining tanks.

8. Explain how to determine specific operating controls and guidelines from the manufacturers' manual.
9. Describe the proper shutdown, storage, and cleaning of asphalt distributors.

Course Code: LTP123 Asphalt Operations Training
Title: Asphalt Operations Training
Length: 32 hours
Maximum Number of Participants: 8
Target Audience: Foremen, asphalt paving technicians
Description: This intensive 4-day course is devoted to crews who lay asphalt. It is a hands-on course.
Learning Objectives: Upon completion of this course, participants will be able to:
1. Recite the duties and roles of the asphalt paver operator, the roller operator, the screed operator, the raker, and the truck guide.
2. Describe the proper steps and techniques used by successful paving crews.
3. Demonstrate the proper pre-trip inspection of equipment used in pavement operations.
4. Demonstrate the proper load and tie-down of equipment used in pavement operations.
5. Describe the preventive maintenance steps of pavement equipment.
6. Describe the safety procedures to follow with each piece of equipment used in paving operations.
7. Describe the proper steps used in paving the project layout.
8. Describe the steps for ordering production materials before a paving operation.
9. Describe the different types of asphalt that may be used.
10. Describe how to perform an existing surface analysis and the repair steps used.
11. Describe why a tack coat is needed and how to apply it correctly.

Course Code: LTP125
Title: Forklift
Length: 8 hours
Maximum Number of Participants: 15
Target Audience: Operators of forklifts and foremen.
Description: This course is designed to meet the training requirements of the OSHA Standard for the operation of powered industrial trucks. The program consists of classroom and hands-on training.
Learning Objectives: Upon completion of this course, participants will be able to:
1. Describe the design, features, and capacities of forklift trucks.
2. Describe the differences between automobiles and forklifts regarding steering, braking, visibility, and stability and how those differences contribute to accidents, particularly on the part of the beginner operators.
3. Explain the "stability triangle" and how the combined center of gravity of the lift and the load may vary with load position, fork/mast position, and inclination of the machine.
4. Explain how momentum can affect lift stability in turns and braking, particularly with elevated forks.
5. Demonstrate a proper pre-operational inspection of the unit.
6. Describe and demonstrate the various controls of the forklift.
7. Describe and explain the correct use of safety equipment, including a parking brake, seat belt, lights, horn, backup alarm, and flashing beacon light.

8. Demonstrate the proper methods to pick, set, and release palletized material at the ground and elevated levels (truck beds, trailers, shelves) with the lift.
9. Demonstrate the ability to transport loads in forward and reverse, maintaining safe fork height and tilt.
10. Demonstrate the ability to negotiate ramps with forks loaded and unloaded.
11. Demonstrate the ability to park the lift with the correct fork and mast position and shut down the machine properly.
12. Demonstrate the ability to "spot" a forklift operator.
13. Demonstrate the ability to use attachments such as jibs and explain their effect on lift capacity.

Course Code: LTP126
Title: Rough Terrain Forklift/Reach Lift
Length: 8 hours
Maximum Number of Participants: 10
Target Audience: Operators of rough terrain forklifts and foremen.
Description: This course is designed to meet the training requirements of the OSHA Standard for the operators of rough terrain forklifts, both straight mast and telescoping boom reach lifts. The class is both hands-on and classroom.
Learning Objectives: Upon completion of this course, participants will be able to:
1. Demonstrate the proper steps and methods of completing and documenting a pre-operational inspection.
2. Administer the proper steps and actions for preventive maintenance on rough terrain forklifts/reach lifts.
3. Describe the rough terrain forklift/reach lift components and their use in operations.
4. Describe the specific OSHA standards for operating rough terrain forklifts/reach lifts.
5. Demonstrate the ability to identify boom length and boom angle indicators and read the load chart on reach lifts.
6. Demonstrate proper safety protocols while entering and exiting the machine.
7. Demonstrate the ability to pick, set, and telescope (on reach lifts) loads.
8. Demonstrate the ability to drive the machine in forward and reverse on level and uneven ground maintaining the right fork (and boom if reach lift) height with and without a load.
9. Demonstrate the ability to pick and set loads from elevated positions such as docks, trucks, shelving, and storage points.

Course Code: LTP127
Title: Aerial/Scissor Lift
Length: 8 hours
Maximum Number of Participants: 10
Target Audience: Operators of aerial or scissor lifts and foremen.
Description: The course is designed to provide entry-level skills or operators of aerial or scissor lifts.
Learning Objectives: Upon completion of this course, participants will be able to:
1. Describe and demonstrate the proper selection and use of fall protection equipment when operating an aerial scissor lift.
2. Demonstrate the ability to determine the capacity of the aerial lift.
3. Demonstrate the proper steps and methods of completing and documenting a pre-operational inspection.

4. Administer the proper steps and actions for preventive maintenance on aerial scissor lifts.

5. Identify and describe the aerial scissor lift components and their use in operations.

6. Demonstrate towable or stationary lifts, and demonstrate the correct method for setting the machine up for use.

7. Demonstrate the proper techniques for entering and exiting the aerial lift and attaching the fall protection equipment.

8. Demonstrate on self-propelled aerial lifts the ability to select the correct travel speed, drive the lift forward and reverse, and determine the direction of travel relative to basket position.

9. Demonstrate the ability to raise the basket or platform to a work position and lower it back to a travel or towed position.

Course Code: LTP130
Title: Motor Grader – Beginner
Length: 32 hours
Maximum Number of Participants: 4
Target Audience: Entry-level motor grader operators.
Description: This is an entry-level class for persons with no or little experience in the operation of a motor grader.
Learning Objectives: Upon completion of this course, participants will be able to:

1. Demonstrate proper safety protocols when entering or exiting the motor grader.

2. Demonstrate the proper steps and methods of completing and documenting a pre-operational inspection.

3. Administer the proper steps and actions for preventive maintenance on motor graders.

4. Describe the grader components and their use in operations.

5. Recite the various blading terms and what each means.

6. Demonstrate the proper techniques and methods of safely operating the motor grader in forward and reverse modes.

7. Demonstrate proper positioning of the wheels and blade for flat blading.

8. Recite, describe, and demonstrate the controls of the grader.

9. Demonstrate the proper shutdown and end-of-operations procedures of the motor grader.

Course Code: LTP131
Title: Motor Grader – Intermediate
Length: 32 hours
Maximum Number of Participants: 4
Target Audience: Motor grader operators who have completed the LTP130 Basic class; or have been determined through a TxLTAP Operator Skill Qualification Assessment eligible to attend the course or have demonstrated adequate operator skills on the job to their supervisor to participate in the course.
Description: This is a next-level course for motor grader operators to refine their existing skill sets and learn new techniques in grader operations.
Learning Objectives: Upon completion of this course, participants will be able to:

1. Demonstrate proper safety protocols when entering or exiting the motor grader.

2. Demonstrate the proper steps and methods of completing and documenting a pre-operational inspection.

3. Administer the proper steps and actions for preventive maintenance on motor graders.

4. Describe the grader components and their use in operations.

5. Recite the various blading terms and what each means.

6. Demonstrate the proper method to set up a grader for vee-ditching, including setting the front wheel pitch, orienting the circle, positioning the front blade and blade pitch, and articulating the frame.

7. Demonstrate the proper shutdown and end-of-operations procedures of the motor grader.

Course Code: LTP132
Title: Motor Grader – Advanced
Length: 32 hours
Maximum Number of Participants: 4
Target Audience: Motor grader operators who have completed the LTP131 Intermediate class; or have been determined through a TxLTAP Operator Skill Qualification Assessment eligible to attend the course or have demonstrated adequate operator skills on the job to their supervisor to participate in the course.
Description: This is the final level course for motor grader operators to refine their existing skill sets and learn new techniques in grader operations.
Learning Objectives: Upon completion of this course, participants will be able to:
1. Demonstrate proper safety protocols when entering or exiting the motor grader.
2. Demonstrate the proper steps and methods of completing and documenting a pre-operational inspection.
3. Administer the proper steps and actions for preventive maintenance on motor graders.
4. Describe the grader components and their use in operations.
5. Recite the various blading terms and what each means.
6. Demonstrate how to deploy, set up, and use scarifiers to break up and loosen materials.
7. Demonstrate how to cut a flat bottom ditch, cut a ditch back slope, and pull a road shoulder to grade.
8. Demonstrate the proper shutdown and end-of-operations procedures of the motor grader.

Course Code: LTP140
Title: Excavator (Telescoping Boom/Gradall)
Length: 32 hours
Maximum Number of Participants: 4
Target Audience: Operators of the Gradall machine, foremen, and supervisors.
Description: This entry-level course is designed for the operators of truck-mounted telescoping boom excavators, commonly referred to as a Gradall.
Learning Objectives: Upon completion of this course, participants will be able to:
1. Demonstrate proper safety protocols when entering or exiting the excavator.
2. Demonstrate the proper steps and methods of completing and documenting a pre-operational inspection.
3. Administer the proper steps and actions for preventive maintenance on telescoping boom excavators.
4. Describe the telescoping boom excavator components and their use in operation.
5. For track-mounted telescoping boom excavators, demonstrate the ability to drive and steer in forward and reverse, countersteer, and respond to hand signals.
6. For truck-mounted or self-propelled telescoping boom excavators, demonstrate the ability to drive and steer the excavator forward, and reverse from the operator station and respond to hand signals.
7. Demonstrate proper rigging and lifting with the bucket and respond to hand signals.

8. For self-propelled and track-mounted excavators, set up the excavation machine by leveling the area and positioning the dozer blade and outriggers (if so equipped).

9. Explain the strategy for coordinating with dump truck drivers to stage and load them from stockpiles and ditching operations.

10. Demonstrate the ability to load a dump truck from a stockpile or ditch.

11. Demonstrate the ability to dig vee-ditches, perform ditch cleanout, flat bottom excavations, grade, and backfill.

12. Demonstrate the ability to load and unload the machine from a trailer.

Course Code: LTP141
Title: Excavator (Articulating Boom)
Length: 32 hours
Maximum Number of Participants: 4
Target Audience: Excavator operators, foremen, and supervisors.
Description: This course is designed to provide entry-level skills for the operators of articulating boom excavators.
Learning Objectives: Upon completion of this course, participants will be able to:

1. Demonstrate the proper steps and methods of completing and documenting a pre-operational inspection.

2. Administer the proper steps and actions for preventive maintenance on articulating excavators.

3. Describe the articulating excavator components and their use in operation.

4. Demonstrate proper safety protocols when entering or exiting the excavator.

5. Demonstrate driving and steering of the excavator, counter steering, deployment of stabilizers, and use of dozer blade if so equipped.

6. Demonstrate proper rigging and lifting with the bucket and the ability to respond to hand signals.

7. Demonstrate the ability to backfill, compact, and grade an excavation.

9. Demonstrate the ability to load and unload from a trailer.

Course Code: LTP142
Title: Mini Excavator
Length: 16 hours
Maximum Number of Participants: 8
Target Audience: Excavator operators, foremen, and supervisors.
Description: This course is designed to provide entry-level skills for mini-excavator operators.
Learning Objectives: Upon completion of this course, participants will be able to:

1. Demonstrate proper safety protocols when entering or exiting the excavator.

2. Demonstrate the proper steps and methods of completing and documenting a pre-operational inspection.

3. Administer the proper steps and actions for preventive maintenance on mini excavators.

4. Describe the mini-excavator components and their use in operation.

5. Demonstrate driving and steering of the excavator, counter steering, deployment of stabilizers, and use of dozer blade if so equipped.

6. Demonstrate proper rigging and lifting with the bucket, excavating, and loading from ditches and stockpiles.

7. Describe special procedures when excavating near utilities.

8. Demonstrate Vee ditching, backfilling, and grading techniques.

9. Demonstrate proper hand signaling when operating with a coworker.
10. Demonstrate proper loading and unloading from a trailer.

Course Code: LTP145
Title: Dozer
Length: 32 hours
Maximum Number of Participants: 4
Target Audience: Dozer operators, foremen, and supervisors.
Description: This course is designed to provide entry-level skills for the operators of dozers.
Learning Objectives: Upon completion of this course, participants will be able to:
1. Demonstrate proper safety protocols when entering or exiting the dozer.
2. Demonstrate the proper steps and methods of completing and documenting a pre-operational inspection.
3. Administer the proper steps and actions for preventive maintenance on dozers, including track adjustments.
4. Describe the dozer components and controls and their use in operation.
5. Demonstrate through the operation of the dozer the following operations: slot dozing, excavating, ditch cleanouts, building and dressing a stockpile, backfilling, grading, leveling, and grading a site.
6. Describe the special precautions to be taken when excavating around utilities.
7. Describe the strategy and special precautions for felling and moving trees.
8. Demonstrate proper hand signaling when operating with a coworker.
9. Demonstrate proper loading and unloading from a trailer.

Course Code: LTP155
Title: Backhoe/Front End Loader
Length: 32 hours
Maximum Number of Participants: 8
Target Audience: Backhoe operators, foremen, and supervisors.
Description: This course is designed to provide entry-level skills for backhoe operators.
Learning Objectives: Upon completion of this course, participants will be able to:
1. Demonstrate proper safety protocols when entering or exiting the backhoe/loader.
2. Demonstrate the proper steps and methods of completing and documenting a pre-operational inspection.
3. Administer the proper steps and actions for preventive maintenance on the backhoe/loader.
4. Describe the backhoe/loader components and their use in operation.
5. Demonstrate driving and brake steering of the backhoe/loader.
6. Demonstrate proper loading from and dressing stockpiles.
7. Demonstrate basic trenching, excavating, backfilling, and grading techniques.
8. Describe special precautions to take when digging around utilities.
9. Demonstrate proper hand signaling when operating with a coworker.
10. Demonstrate proper loading and unloading from a trailer.

Course Code: LTP160
Title: Wheel Loader
Length: 16 hours
Maximum Number of Participants: 4

Target Audience: Wheel loader operators, foremen, and supervisors.

Description: This course is designed to provide entry-level skills for the operators of wheel loaders.

Learning Objectives: Upon completion of this course, participants will be able to:

1. Demonstrate proper safety protocols when entering or exiting the backhoe/loader.
2. Demonstrate the proper steps and methods of completing and documenting a pre-operational inspection.
3. Administer the proper steps and actions for preventive maintenance on the backhoe/loader.
4. Describe the backhoe/loader components and their use in operation.
5. Demonstrate driving and brake steering of the backhoe/loader.
6. Demonstrate proper loading from and dressing stockpiles.
7. Demonstrate basic trenching, excavating, backfilling, and grading techniques.
8. Describe special precautions to take when digging around utilities.
9. Demonstrate proper hand signaling when operating with a coworker.
10. Demonstrate proper loading and unloading from a trailer.

Course Code: LTP161
Title: Track Loader
Length: 24 hours
Maximum Number of Participants: 4
Target Audience: Track loader operators, foremen, and supervisors.
Description: This course is designed to provide entry-level skills for the operators of track loaders.
Learning Objectives: Upon completion of this course, participants will be able to:

1. Demonstrate the proper steps and methods of completing and documenting a pre-operational inspection.
2. Administer the proper steps and actions for preventive maintenance on tracked loaders.
3. Describe the track loader components and their use in operation.
4. Demonstrate proper safety protocols when entering or exiting the track loader.
5. Describe the steps for track inspection and how to adjust tracks.
6. Demonstrate driving and steering of the track loader.
7. Demonstrate proper hand signaling when operating with a coworker.
8. Demonstrate proper loading from and dressing stockpiles.
9. Describe special procedures for excavating around utilities.
10. Demonstrate basic trenching, excavating, backfilling, and grading techniques.
11. Demonstrate proper loading and unloading from a trailer.

Course Code: LTP164
Title: Sweeper (Street – Regenerative)
Length: 24 hours
Maximum Number of Participants: 4
Target Audience: Sweeper operators, foremen, and supervisors.
Description: This course is designed to provide entry-level skills for the operators of sweepers.
Learning Objectives: Upon completion of this course, participants will be able to:

1. Demonstrate proper safety protocols when entering or exiting the sweeper and accessing the machine's components.
2. Demonstrate the proper steps and methods of completing and documenting a pre-operational inspection.
3. Administer the proper steps and actions for preventive maintenance on sweepers.
4. Describe the sweeper components and their use in operation.
5. Describe how to adjust brooms and drives.
6. Demonstrate how to orient the sweeper and its attachments.
7. Demonstrate proper sweeping in a roadway exercise.
8. Demonstrate how to dump the collector.
9. Demonstrate proper hand signaling when operating with a coworker.

Course Code: LTP166
Title: Rotary Broom Operator
Length: 8 hours
Maximum Number of Participants: 6
Target Audience: Rotary broom operators, foremen, and supervisors.
Description: The course covers the safe operation of rotary brooms.
Learning Objectives: Upon completion of this course, participants will be able to:
1. Describe the personal protective equipment to use when operating rotary brooms.
2. Demonstrate proper safety protocols when entering or exiting the rotary broom.
3. Demonstrate the proper steps and methods of completing and documenting a pre-operational inspection.
4. Administer the proper steps and actions for preventive maintenance on rotary brooms.
5. Describe the rotary broom components and their use in operation.
6. Demonstrate safe driving practices with the rotary broom in a sweeping exercise on the roadway.
7. Demonstrate proper sweeping procedures and techniques from an on-road exercise.
8. Demonstrate proper hand signaling when operating with a coworker.

Course Code: LTP170
Title: Vehicle Backing Safety
Length: 2-hour, 4-hour, or 8-hour versions available
Maximum Number of Participants: 15
Target Audience: Any operators of light-duty or heavy-duty trucks or equipment.
Description: Less than 1% of our driving time is in reverse; the other 99% is going forward. Yet 25% of all accidents occur when backing up. This course provides best practices for safe backing in public work environments.
Learning Objectives: Upon completion of this course, participants will be able to:
1. Describe why backing accidents are the most common
2. Describe why clean windows, mirrors, and backup cameras are essential for safe backing
3. Describe why using a spotter (when available) is desirable for backing operations
4. Describe what GOAL (Get Out and Look) should be used before backing.
5. Demonstrate safe backing using a spotter using suggested hand signals
6. Describe the correct positioning of the truck/trailer for backing into a parking spot from the left and right sides at a 90-degree angle of approach and backing directly into a spot by swinging out to align with the parking spot.

Course Code: LTP172
Title: Equipment Load and Tie Down
Length: 8 hours
Maximum Number of Participants: 15
Target Audience: Any personnel in the loading, securing, or transporting equipment on trailers and roll-back trucks, persons who inspect the securement of loads before transport, foremen, and supervisors.
Description: This course is designed to provide personnel loading, securing, or transporting equipment on trailers and roll-back trucks with the information they need to perform those tasks safely. The course has a classroom segment and a hands-on field exercise.
Learning Objectives: Upon completion of this course, participants will be able to:
1. Describe the DOT regulations about securing loads for equipment transport and where to locate said regulations for reference.
2. Demonstrate proper load distribution on a piece of equipment on a trailer.
3. Describe the various chains and other tie-down hardware used.
4. Identify the appropriate attachment points on the equipment and trailer to be transported.
5. Demonstrate how to calculate that GAWR will not be exceeded.
6. Demonstrate all steps for properly securing a load to be made ready for transport.
7. Describe practices NOT to be used in securing loads, such as twisting chains or welding on pintle hitches.
8. Complete a thorough inspection of the haul trailer to determine roadworthiness and that it meets the specifications and requirements for the equipment to be hauled.

Course Code: LTP179
Title: Bucket Truck Operator
Length: 8 hours
Maximum Number of Participants: 8
Target Audience: Operators of bucket trucks, foremen, and supervisors.
Description: This course is designed to provide entry-level skills for the operators of bucket trucks.
Learning Objectives: Upon completion of this course, participants will be able to:
1. Identify and explain the major components of a bucket truck.
2. Recite and explain the major components of a bucket truck.
3. Explain the PPE and fall arrest equipment requirements for working on or around bucket trucks and demonstrate the ability to don and attach the body harness and lanyard to the correct anchor points on the boom.
4. Describe the safe work procedures (such as minimum clearances) when working around powerlines and the procedures to be employed if contact with powerlines is made.
5. Demonstrate the proper procedures for a pre-operational inspection of a bucket truck.
6. Explain the preventive maintenance procedures used on a bucket truck.
7. Recite the periodic/annual inspections to be made on a bucket truck.
8. Demonstrate the ability to set up and level the machine, then operate the boom controls from the ground station.
9. Demonstrate how to determine a jib-equipped unit's bucket capacity, jib capacity, and boom segment capacities (if an articulating boom machine with load gauges are installed).
10. Demonstrate the ability to climb into the bucket, attach the fall arrest equipment and operate the unit with the bucket controls.

11. Demonstrate the ability to attach and use hydraulic tools to the tool circuits and use them, if so equipped.

12. Demonstrate the ability to perform a rescue of an incapacitated operator from the ground station.

Course Code: LTP180
Title: Bucket Truck/Digger Derrick
Length: 24 hours
Maximum Number of Participants: 6
Target Audience: Operators of bucket truck/digger derrick combinations, foremen, and supervisors.
Description: This course is designed to provide entry-level skills for bucket truck/digger derrick rig operators with an emphasis on the digger derrick through hands-on exercises.
Learning Objectives: Upon completion of this course, participants will be able to:
1. Identify and explain the major components of a bucket truck/digger derrick.
2. Recite and use the correct operating terms and hand signals for a bucket truck/digger derrick.
3. Explain the PPE and fall arrest equipment requirements for working on or around a bucket truck digger derricks and demonstrate the ability to don and attach the body harness and lanyard to the correct anchor points on the boom.
4. Describe the safe work procedures (such as minimum clearances) when working around powerlines and the procedures to be employed if contact with powerlines is made.
5. Demonstrate the proper procedures in a pre-operational inspection of a bucket truck/digger derrick.
6. Explain the preventive maintenance procedures used on a bucket truck/digger derrick.
7. Recite the periodic/annual inspections to be made on a bucket truck/digger derrick
8. Demonstrate the ability to set up and level the machine, then operate the boom and all other controls from the operator's station on the machine
9. Demonstrate the ability to mount the bucket, attach the fall arrest gear and operate the boom from the bucket position.
10. Demonstrate the ability to read the load chart for the derrick and the bucket jib (if so equipped)
11. Demonstrate the ability to pick, move and set loads with the derrick in response to hand signals from a flag man.
12. Describe the special precautions to be taken when drilling around utilities
13. Demonstrate the ability to deploy the drilling auger, drill a hole, the properly stow the auger on the boom.
14. Demonstrate the ability to pick and set a utility pole using the derrick hoist line and pole claws.
15. Demonstrate the ability to stow the boom, raise the outriggers, and prepare the machine for transport or parking.
16. Demonstrate the ability to attach hydraulic tools to the tool circuits and operate them.
17. Demonstrate the ability to perform the rescue of an incapacitated operator from the ground station.

Course Code: LTP192
Title: Skid Steer
Length: 8 hours
Maximum Number of Participants: 8
Target Audience: Operators of skid steers, foremen, and supervisors.
Description: This course is designed to provide entry-level skills for operators of skid steers and what the various attachments can be used to accomplish higher work production safely.

Learning Objectives: Upon completion of this course, participants will be able to:

1. Demonstrate proper safety protocols when entering or exiting the skid steer.
2. Demonstrate the proper steps and methods of completing and documenting a pre-operational inspection.
3. Administer the proper steps and actions for preventive maintenance on skid steers.
4. Describe the skid steer components and their use in operations.
5. Describe the emergency exit procedure through the back hatch.
6. Demonstrate the ability to drive and steer the skid steer forwards and backward through a driving course.
7. Demonstrate safe methods to load from and dress a stockpile.
8. Demonstrate how to excavate, backfill and grade a surface with the bucket.
9. Demonstrate how to negotiate slopes loaded and unloaded safely.
10. Demonstrate the correct attachment and use of forks, brooms, mowers, flails, augers, and planers.
11. Demonstrate proper loading and unloading from a trailer.

Course Code: LTP193
Title: Roller (Steel Wheel or Pneumatic)
Length: 8 hours
Maximum Number of Participants: 6
Target Audience: Operators of steel-wheeled or pneumatic rollers, foremen, and supervisors.
Description: This course is designed to provide entry-level skills for the operators of steel-wheeled or pneumatic rollers.
Learning Objectives: Upon completion of this course, participants will be able to:

1. Explain compaction procedures to include: breakdown, intermediate, and finish passes and how varying tire pressure for pneumatic rollers and vibration amplitude and frequency for flat-wheel rollers allows them to make those passes.
2. Demonstrate proper safety protocols when entering or exiting the roller.
3. Demonstrate the proper steps and methods of completing and documenting a pre-operational inspection.
4. Administer the proper steps and actions for preventive maintenance rollers.
5. Describe the roller components and their use in operations.
6. Demonstrate how to drive the roller in forward and reverse properly.
7. Demonstrate how to negotiate turns in forward and reverse properly.
8. Demonstrate how to use the sprinkler system.
9. Demonstrate how to roll a pattern.
10. Demonstrate the proper use of vibrator drums when rolling.
11. Demonstrate proper hand signaling when operating with a coworker.
12. Demonstrate proper loading and unloading from a trailer.

Course Code: LTP194
Title: Compactor
Length: 8 hours
Maximum Number of Participants: 4
Target Audience: Operators of compactors, inspectors of compacted sub-surfaces, foremen, and supervisors.
Description: This course is designed to provide entry-level skills for the operators of compactors.
Learning Objectives: Upon completion of this course, participants will be able to:
1. Demonstrate proper safety protocols when entering or exiting the compactor.
2. Demonstrate the proper steps and methods of completing and documenting a pre-operational inspection.
3. Administer the proper steps and actions for preventive maintenance on compactors.
4. Describe the compactor components and their use in operations.
5. Demonstrate proper driving, compaction, and grading techniques.
6. Demonstrate proper hand signaling when operating with a coworker.
7. Demonstrate proper loading and unloading from a trailer.

Course Code: LTP210
Title: Planning Work Zone Traffic Control
Length: 16 hours
Maximum Number of Participants: 20
Target Audience: Foremen, Supervisors, Inspectors, and anyone planning or developing work zone traffic control plans.
Description: This is an advanced course designed to familiarize supervisors and planners with the procedures used to make work zone traffic control decisions.
Learning Objectives: Upon completion of this course, participants will be able to:
1. Discuss the importance of safety.
2. Identify the Texas Manual of Uniform Traffic Control Devices (TMUTCD) as the standard for all public roads in Texas.
3. Recognize the importance of maintaining proper documentation.
4. Recognize traffic control devices' purpose, principles, and other basic requirements.
5. Recognize the fundamental principles of temporary traffic control.
6. Identify the components of temporary traffic control zones.
7. Recognize the TMUTCD requirements related to these components.
8. Discuss critical elements of pedestrian and worker safety.
9. Recognize the traffic control devices typically used for temporary traffic control.
10. Discuss the role of flaggers, flagger procedures, and the devices typically used by flaggers.
11. Recognize the five categories of work duration.
12. Recognize the importance of rapidly clearing road incidents and road agencies' role in providing traffic control for incidents.
13. Identify commonly used Typical Applications (TAs).
14. Recognize typical work locations.
15. Identify the guidance in the TMUTCD regarding lane closures on multi-lane roads.
16. Demonstrate, in-class activity, the fundamental principles involved in setting up temporary traffic control for lane closures on multi-lane roads.

17. Identify the guidance in the TMUTCD regarding the location of flagger stations and other components of a lane closure on a two-lane, two-way road.

18. Demonstrate the requirements, during an in-class activity, for setting up temporary traffic control for a lane closure on a two-lane, two-way road.

19. Identify guidance related to other typical work conditions and demonstrate these requirements in-class activities.

20. Identify TxDOT Standard sheets.

21. Recognize traffic control plan inspection.

Course Code: LTP220
Title: Heavy Equipment for Wildfire
Length: 8 hours
Maximum Number of Participants: 25
Target Audience: Heavy equipment operators, foremen, and supervisors.
Description: This course addresses information that heavy equipment operators should know when called out to assist firefighters in wildland fire situations. Classroom training is instructed in the morning, and field training exercises are conducted on your equipment in the afternoon.
Learning Objectives: Upon completion of this course, participants will be able to:
1. Describe the science behind a wildfire.
2. Describe the responsibilities of an incident commander.
3. Describe the methods of attacking a fire.
4. Describe the techniques of diminishing a fire with a dozer and motor grader.
5. Describe dangerous situations to avoid in a wildfire.
6. Demonstrate the proper techniques on a dozer and motor grader for cutting a fire break.

Course Code: LTP300
Title: Flagger Training
Length: 4 hours
Maximum Number of Participants: 25
Target Audience: City/county workers, foremen, and supervisors performing or engaging in flagging duties on construction projects or emergency operations.
Description: The course will provide a better understanding of the essential duties involved with flagging a project. Attendees who complete the course will receive a Qualified Flagger wallet card valid for three years.
Learning Objectives: Upon completion of this course, participants will be able to:
1. Describe the duties, responsibilities, and qualifications of a flagger.
2. Understand the requirements of the Texas Manual on Uniform Traffic Control Devices (TMUTCD) on flagging operations.
3. List proper personnel protective equipment for flagging.
4. Describe the typical flagging positions.
5. Demonstrate proper flagging procedures using the STOP/SLOW paddle, the flag, and the flashlight.

Course Code: LTP400
Title: Managing Conflict in the Workplace
Length: 8 hours
Maximum Number of Participants: 20
Target Audience: Supervisors, managers, foremen, commissioners, and any persons working with employees or the public may have conflict.
Description: This course is designed for county and municipality elected officials, supervisors, and employees in the state of Texas to provide them with proven methods and strategies to promptly detect and resolve workplace conflicts. Numerous resolution techniques will be discussed, and case studies will be examined. Actual life conflicts and how parties could have reached a better Win-Win in the final result will be discussed.
Learning Objectives: Upon completion of this course, participants will be able to:
1. Describe the definition of conflict.
2. Describe the different levels of conflict.
3. Recite the different types of common workplace conflicts.
4. Recite the major causes of conflict.
5. Describe how to identify hidden conflict in the workplace.
6. List the five Thomas-Kilmann conflict resolution strategies.
7. Describe which resolution strategy is best for different types of conflict.
8. Explain why creating an effective atmosphere for conflict resolution is critical.
9. How to neutralize emotions.
10. Explain how to set ground rules in a resolution process.
11. How the Mutual Understanding phase can lead to a win-win resolution.
12. Explain the benefits of the Win-Win approach.
13. Demonstrate how to build common ground with team members
14. Describe the four phases of team growth dynamics
15. Describe the steps in a Root Cause Analysis
16. Describe how to generate options for resolution.
17. Describe the seven steps in decision-making.
18. Describe effective stress and anger management techniques.
19. Describe how to apply active listening skills on the job.
20. Describe how to frame and ask open-ended questions.
21. List the ten most common mistakes to avoid when managing conflict.
22. List the top five reasons conflict resolution fails.
23. Determine when a mediator is needed for conflict resolution.

Course Code: LTP401
Title: Work Zone Construction Site Safety
Length: 12 hours
Maximum Number of Participants: 20
Target Audience: Supervisors, foremen, crew leaders, inspectors, maintenance technicians, or any persons engaged in the supervision or inspection or work on roadways.
Description: This course is designed to concentrate on activities that generate the highest level of accidents and injuries in road construction and maintenance work zones. It will help participants recognize unsafe work practices and reduce or eliminate hazards in the work environment. The training reinforces components of proper work zone traffic control and flagging and includes all

required content for the OSHA 10-Hour Outreach Construction Card, which is awarded to those who complete the course. This course is also recognized for 12 hours of training credit for TCEQ Water and Wastewater Operations.

Learning Objectives: Upon completion of this course, participants will be able to:

1. Recognize the importance of OSHA requirements in providing a safe workplace for workers.
2. Identify the basic OSHA construction focus areas.
3. Recognize the importance of using appropriate personal protective equipment.
4. Recognize the importance of following standard procedures included in the Texas Manual on Uniform Traffic Control Devices for setting up temporary traffic control.

Course Code: LTP404
Title: Basic Supervision and Management Skills
Length: 16 hours
Maximum Number of Participants: 20
Target Audience: Crew Leaders, Foremen, Supervisors, any employee identified by management with the potential to become a supervisor,
Description: This course is designed as an introduction for existing or new supervisors or employees aspiring to become a supervisor. To be an effective and functional supervisor, basic "survival skills" are covered. The course provides practical tools and techniques that work and serves as a good refresher for experienced supervisors. A four-part progressive interactive exercise on supervisory skills is included.

Learning Objectives: Upon completion of this course, participants will be able to:

1. Describe the steps in making the transition from employee to supervisor.
2. Describe the differences between managing and leading.
3. Describe the basic steps of being a supervisor through:
    a) Delegating work.
    b) Using problem-solving skills to make sound decisions.
    c) Developing and using effective communications to accomplish work.
    d) Personal organization skills.
    e) Reviewing the work of others.
    f) Fiscal responsibility.
4. Describe the 10 fundamental skills to becoming an effective and respected Leader through:
    a) Communication with peers, constituents, and employees.
    b) Motivation of self and those you supervise.
    c) Delegation of work.
    d) Diversity in decision-making.
    e) Trustworthiness from leading by example.
    f) Creativity to bring new and better ways to do business.
    g) Feedback from employees and citizens.
    h) Taking responsibility for the actions of yourself and your employees.
    i) Commitment to your employees and your constituents.
    j) Flexibility to make changes when needed.
5. Describe the overlaps in supervisory and leadership skills and how they may stand apart or complement one another.
6. Describe how to be a go-between road hand and technical staff.
7. Describe ways to develop yourself and your employees continuously.
8. Describe what employees want on the job and how to deliver.

9. Describe how to mentor and develop employees for increased production.

10. Describe ways to recognize your employees.

11. Describe the impacts to work production resulting from high attrition rates and how to mitigate them.

12. Develop a plan to identify your strengths and weaknesses as a supervisor and improve them.

13. Describe the processes on how to coach and document employee issues in lieu of termination when practical.

14. Describe how to process and handle terminations when required.

15. Describe how to develop, document, engage the employee and conduct effective evaluations.

16. Describe the basics of how to resolve conflict in the workplace.

17. Describe how to handle violence in the workplace.

18. Describe the basic do's and don'ts of:
   a) Family Medical Leave Act (FMLA).
   b) Americans with Disabilities Act (ADA).
   c) Health Insurance Portability and Accountability Act (HIPPA) – handling medical information.
   d) Uniformed Services Employment and Reemployment Act (USEERA) and Military Leave.
   e) Discrimination and harassment complaints.
   f) County or municipal policies.
   g) Open Records Requests.
   h) Texas Record Retention Schedules.

19. Recognize the Top Ten Reasons Employers Get Sued.

Course Code: LTP405
Title: Developing Employee Performance Plans and Conducting Performance Evaluations
Length: 8 hours
Maximum Number of Participants: 24
Target Audience: Supervisors, foremen, commissioners, administrative managers, crewleaders. Any personnel involved in evaluating the performance of employees.
Description: This course is designed for city and county commissioners, supervising engineers, directors, supervisors, managers, superintendents, crew leaders, and other personnel evaluating employee performance. This course will cover the benefits of having performance plans, how to write plans, how to engage employees during their performance cycle, and how to prepare for and conduct the final performance evaluation. Numerous resource documents will be provided with the course, including a Plan/Evaluation Form, recommended Job Duty Phrases, Core and Managerial Core Competencies Guide, and Effective Performance Phrases. The class will conduct a three-part exercise on writing a plan, monitoring performance, and then writing and scoring a Performance Evaluation.
Learning Objectives: Upon completion of this course, participants will be able to:
1. Describe the various needs for having employee Performance Plans in place.
2. Describe the benefits of using Performance Plans and Performance Evaluations.
3. Describe the risks of not having Performance Plans or Performance Evaluations.
4. Describe the various components of a Performance Plan / Performance Evaluation.
5. Explain how Stage 1 - Performance Planning fits into the Development and Evaluation Life Cycle.
6. Demonstrate by interactive exercise how to develop job duties that are SMART-based.
7. Describe what job duties should be included in a Performance Plan.
8. Describe how Stage 2 – Employee Development of the Development and Evaluation Life Cycle, is critical to making plans and evaluations program succeed.

9. Describe the key areas to use when monitoring and measuring performance.
10. Explain the importance of documenting performance.
11. Describe how Stage 3 – Performance Feedback ties into performing a mid-point check-in.
12. Demonstrate by interactive exercise how to prepare, conduct and document a mid-point check-in.
13. Describe the process and benefits of having employees evaluate themselves.
14. Describe the Performance Curve and where employees fit on it.
15. Describe common performance rating problems and how to overcome them.
16. Demonstrate how to develop accurate and factual ratings on performance evaluations.
17. Describe the steps to take when conducting a Performance Evaluation.
18. Demonstrate through a hands-on exercise how to determine and document final ratings and comments on the Performance Evaluation.
19. Describe how to handle challenging situations based on disagreements on supervisor ratings.
20. Describe the importance of properly distributing the Performance Evaluation.
21. Describe the importance of putting a new Performance Plan in place as soonest possible.

Course Code: TRF511
Title: Installation and Maintenance of Metal Guard Beam Fence and End Treatments
Length: 12 hours
Maximum Number of Participants: 16
Target Audience: Supervisors, foremen, inspectors, and maintenance technicians who repair or install guardrail systems or components.
Description: This course is designed for counties and municipalities responsible for installing and maintaining MBGF and ETs within their jurisdiction. This course is based on numerous Texas Department of Transportation (TxDOT) resource manuals, guides, and specifications about MBGF and ETs, plus AASHTO Test Level 2 and 3 criteria. Hands-on field exercises will remove and replace damaged MBGF and ETs in the client's outdoor facility.
Learning Objectives: Upon completion of this course, participants will be able to:
1. Recite the various abbreviations and definitions used in maintaining, retrofitting, and installing Metal Beam Guard Fence (MBGF) and End Treatments (ETs).
2. Describe the proper Personal Protective Equipment used in the MBGF or ET removal and replacement process.
3. Describe the functions of MBGF and ETs.
4. Identify the various components of MBGF and ET systems.
5. Identify the type of MBGF or ETs to be replaced.
6. Describe whether an AASHTO Test Level 2 or Test Level 3 Metal Beam Guard is needed according to the defined speed on a roadway.
7. Describe the installation specifications for MBGF and ETs.

Course Code: LTP515
Title: Installation and Maintenance of Signs and Pavement Markings
Length: 16 hours
Maximum Number of Participants: 25
Target Audience: Any persons engaged in the process of installing, repairing, maintaining, and checking signs and markings on the right-of-way.
Description: This course is designed to help participants understand accepted and required practices in the application, installation, maintenance, and operation of signs and pavements used on public roadways. This course is based on the requirements contained in the Texas Manual on Uniform Traffic Control Devices.
Learning Objectives: Upon completion of this course, participants will be able to:
1. Identify the types of traffic signs and their purpose.
2. Describe different sign and pavement marking materials.
3. Explain proper techniques for locating traffic signs and positioning pavement markings.
4. Identify the importance of inspecting and maintaining signs and pavement markings, including compliance with the TMUTCD requirements regarding the maintenance of sign retroreflectivity.

Course Code: LTP520
Title: Work Zone Traffic Control/Qualified Flagger
Length: 16 hours
Maximum Number of Participants: 25
Target Audience: Persons who design, layout, inspect, or maintain work zones. Any person who supervises or performs flagging operations.
Description: This is the introductory course for all personnel involved in designing, layout, and maintaining traffic control devices on public roadways. Successful participants of this course also receive a Qualified Flagger Card, valid for three years. This course is also recognized for 16 hours of training credit for TCEQ Water and Wastewater Operations.
Learning Objectives: Upon completion of this course, participants will be able to:
1. Describe the appropriate safety measures you can take to make your work zone safe and practical.
2. Recognize individual and organizational legal responsibility.
3. Learn the components of a typical work zone and plan the location of traffic control devices by preparing simple traffic control plans (TCPs).
4. Become familiar with the appropriate sections of the 2011 TMUTCD and effectively use its principles and standards.
5. Understand typical temporary traffic control devices.

Course Code: LTP521
Title: TMUTCD Update and Work Zone Refresher
Length: 8 hours
Maximum Number of Participants: 25
Target Audience: People who design, layout, inspect, or maintain work zones. Those who supervise or perform flagging operations.
Description: This course provides an update of basic changes included in Revision 2 of the 2011 edition of the Texas Manual on Uniform Traffic Control Devices. The course also serves as a refresher for participants who have taken the LTP520 course.

Learning Objectives: Upon completion of this course, participants will be able to:

1. Recognize the structure, organization, and content of the 2011 TMUTCD.
2. Understand the minimum legal requirements for designing, setting up, and taking down maintenance or construction work zones on public roads in Texas.
3. Improve skills by preparing a series of traffic control plan designs.
4. Demonstrate proficiency through a final written exam.

Course Code: CS202
Title: Confined Space Safety
Length: 8 hours
Maximum Number of Participants: 20
Target Audience: Supervisors, foremen, crew leaders, inspectors, and entry personnel accessing confined spaces.
Description: This course is designed to meet the training requirements of the OSHA Standard for Confined Space Entry for entrants, attendants, and entry supervisors. It is intended to provide participants who might be exposed to confined space hazards with the ability to recognize and minimize such hazards.
Learning Objectives: Upon completion of this course, participants will be able to:

1. Recite the definition of a confined space and provide examples of potential confined spaces in their workplaces.
2. Explain the hazards of confined spaces, including oxygen deficiency, flammability, toxicity, and engulfment, and how those situations can develop.
3. Explain the OSHA requirements for working in and around confined spaces.
4. Explain the differences between permit-required and non-permit-required confined spaces to include the information required on a permit.
5. Describe the training and responsibilities for the attendant and entrants making confined space entries.
6. Describe the function and correct use of gas monitors.
7. Describe the correct use of equipment to make confined space entries, including fall protection equipment, tripods, ladders, and retrieval winches.
8. Describe the appropriate communications used in confined space entry.
9. Describe a typical confined space entry procedure in their workplaces.
10. Describe the various types of rescue procedures and the decision-making process involved in their selection.

Course Code: EL203
Title: Electrical Safety
Length: 8 hours
Maximum Number of Participants: 20
Target Audience: Supervisors, managers, foremen, crew leaders, inspectors, and workers who supervise, inspect or perform work in or around power lines and other energized machinery, lines, or devices.
Description: This course is intended to provide participants who might be exposed to electrical hazards (such as electric shock, electrocution, fires, and explosions) with the ability to recognize and minimize such hazards.

Learning Objectives: Upon completion of this course, participants will be able to:
1. Students will gain an awareness level of understanding of electrical hazards in their work environment and methods to control such hazards effectively.
2. Students will engage in group and individual activities, including case studies and job hazard analysis reviews.
3. Students will participate in the instructor's presentation by asking relevant questions and contributing when appropriate.

Course Code: EXC201
Title: Excavation Safety Competent Person Training Program
Length: 8 hours
Maximum Number of Participants: 20
Target Audience: Supervisors, managers, foremen, crew leaders, inspectors, and workers who supervise, inspect or perform work in or around excavations.
Description: This course is intended to provide those who work in or around excavations or might be exposed to excavation hazards with the ability to recognize and minimize such hazards.
Learning Objectives: Upon completion of this course, participants will be able to:
1. Explain the applicable regulatory requirements and components of an OSHA-compliant excavation safety program.
2. Explain the role and responsibilities of the competent person.
3. Identify and explain the factors contributing to cave-ins.
4. Identify and explain the remediation methods for other common excavation hazards, such as hazardous atmospheres and surcharge loads.
5. Identify and explain soil types using the soil classification system of the OSHA standard.
6. Describe the various types of protective systems used, including benching/sloping, shoring, and shielding.
7. Describe the role of Registered Professional Engineers in the design of protective systems for tabulated data, manufacturer's tabulated data, and site-specific designs.
8. Describe the proper means of ingress and egress from excavations.

Course Code: FP204
Title: Fall Safety
Length: 8 hours
Maximum Number of Participants: 20
Target Audience: Supervisors, managers, foremen, crew leaders, inspectors, and workers who supervise, inspect or perform work in elevated positions.
Description: This course is intended to provide those who work at elevation and are exposed to fall hazards with the ability to recognize and minimize such hazards.
Learning Objectives: Upon completion of this course, participants will be able to:
1. Identify factors that contribute to common fall hazards.
2. Explain how to analyze work areas for fall hazards.
3. Discuss the hierarchy of controls for fall hazards.
4. Describe OSHA regulations and resources addressing fall protection.

Course Code: LN201
Title: Tree Trimming Safety Awareness
Length: 8 hours
Maximum Number of Participants: 20
Target Audience: Supervisors, managers, foremen, crew leaders, inspectors, and workers who supervise, inspect or perform work in elevated positions.
Description: This course is intended to provide participants with the ability to identify, evaluate, and prevent hazards associated with tree trimming operations and using chippers and chainsaws.
Learning Objectives: Upon completion of this course, participants will be able to:
1. Explain how to develop a Unit Set-Up before a tree trimming operation.
2. Identify parts of and maintenance procedures for chippers and chainsaws.
3. Review OSHA and ANSI regulations relating to safe tree trimming operations and using chainsaws and chippers.

Course Code: LTP610
Title: Storm Drainage Pipe Installation
Length: 8 hours
Maximum Number of Participants: 20
Target Audience: Supervisors, managers, foremen, crew leaders, inspectors, and workers who supervise, inspect or perform work installing storm drainage pipes and culverts.
Description: This course provides road and bridge crews with best practices for properly installing storm drainage pipes and precast box culverts. It is delivered through a blended approach of classroom instruction and hands-on activities in the field.
Learning Objectives: Upon completion of this course, participants will be able to:
1. Understand pipe systems' installation, specification, design requirements, and material differences.
Note: This class is a blend of classroom and field exercises.

Course Code: LTP611
Title: Storm Drainage Pipe and Precast Box Culvert Installation
Length: 8 hours
Maximum Number of Participants:
Target Audience: Supervisors, managers, foremen, crew leaders, inspectors, and workers who supervise, inspect or perform work installing storm drainage pipes and culverts.
Description: This course is designed to provide road and bridge crews with best practices for properly installing storm drainage pipes and culverts. It also focuses on innovative small bridge replacements utilizing precast box culverts.
Learning Objectives: Upon completion of this course, participants will be able to:
1. Understand pipe systems' installation, specification, design requirements, and material differences.
Note: Classroom delivery only version, all information same as LTP610

Course Code: LTP700
Title: Traffic Management for First Responders
Length: 6 hours
Maximum Number of Participants: 30
Target Audience: First Responders, supervisors, and managers.
Description: Texas' population and economic growth have significantly increased the number of vehicles, especially commercial vehicles, on its roads. This results in an increase in primary incidents, which in turn heightens the chance of secondary incidents. These secondary incidents can be as deadly and destructive as the initial situation. An appropriate traffic control response by first responders can significantly affect the probability of a secondary incident. This SHRP2 National Traffic Incident Management Responder Training-based course provides first responders with the knowledge needed to ensure a well-coordinated response to traffic incidents that achieves faster clearance and improved safety for both responders and motorists. This course is eligible for TCOLE, TCFP, TX DSHS EMS, or TDLR Towing continuing education credits.

Course Code: UTL101
Title: Subsurface Utility Locating and Marking Workshop
Length: 8 hours
Maximum Number of Participants:
Target Audience: Persons engaged in the location, identification, and marking utility lines.
Description: This training addresses underground utility line locating and marking following state laws and standards. The course provides a balance of classroom and hands-on field instruction. Participants gain an A – Z understanding of the fundamentals of line locating. Special emphasis is placed on mastering the electronic detection equipment and troubleshooting techniques to solve utility locating puzzles.
Learning Objectives: Upon completion of this course, participants will be able to:
1. Describe the methods for identifying and marking utility lines underground.
2. Describe state laws and standards for identifying and marking utility lines.
3. Demonstrate the various electronic devices used to identify utility lines.
4. Describe the various methods of pipeline construction and design.
Note: Blend of classroom and field exercises.

Course Code: UTL102
Title: Advanced Utility Locator Training
Length: 16 hours
Maximum Number of Participants:
Target Audience: Persons engaged in the location, identification, and marking utility lines.
Description: Participants will perform hands-on training utilizing an assorted array of locating devices and methods. This course is recommended for those with at least three years of utility line locating experience.
Learning Objectives: Upon completion of this course, participants will be able to:
1. Demonstrate how to create and deploy a site location plan for utility lines.
2. Describe and demonstrate advanced troubleshooting techniques using equipment and deductive reasoning.
3. Describe how to overcome and prevent line-locating errors
Note: Blend of classroom and field exercises.

Attachment B: AASHTO/TC3 Public Works/Road & Bridge Oriented Online Course Information

Construction Stormwater Field Guide Training (3 PDHs)
Item Code: TC3MN028-16-T1
Knowledge Categories: Construction, Maintenance
This course is based on the AASHTO Maintenance Stormwater Field Guide. It covers best management practice inspection, standard operational practices, good housekeeping, and other pollution source control measures. Using the tips in this course and the related guide will help comply with Federal and State regulations for stormwater quality. It will also help achieve a greater level of environmental stewardship.
Three modules make up this course:
Module 1: Introduction to Stormwater Maintenance;
Module 2: Roadside Maintenance Activities; and
Module 3: Facilities Management.
It is not required that you complete the modules in order; however, it is recommended.
Target audience: This course is intended for maintenance staff and those involved in implementing standard best management practices.
Learning outcomes: Upon completion of this course, participants will be able to:
*   Describe stormwater maintenance activities;
*   List stormwater maintenance practices related to pollution prevention and erosion control; and
*   Describe facility management practices related to stormwater pollution prevention.

Earthwork: Excavation (3 PDHs)
Item Code: TC3CN024-15-T1
Knowledge Categories: Materials, Construction, Maintenance
Course Overview: Excavations of soil and rock are an integral part of highway construction due to the associated costs, safety concerns, engineering considerations, and short- and long-term performance expectations. This course provides an overview of the basic principles related to the requirements for proper excavation during a project. Excavation is the fourth part of the five-part Earthwork Series. This training consists of four modules covering the equipment used to excavate soils, the procedures, requirements, and special considerations for mass excavation, permanent cut slopes, and temporary trench excavations. This course also covers common problems and safety concerns associated with excavation.
Target audience: This training targets agency and industry technicians on an earthwork project using earth materials as engineering materials. This training is beneficial to anyone working on the project but is targeted at the intermediate to the advanced technician.
Learning outcomes: Upon completion of the course, participants will be able to:
*   Explain considerations and requirements for excavation;
*   Recall excavation safety procedures; and
*   Relate common issues and solutions associated with excavation

Earthwork: Fill Placement (4 PDHs)
Item Code: TC3CN025-15-T1
Knowledge Categories: Construction, Materials, Maintenance

Course Overview: Embankment construction, structural and utility bedding and backfilling, and the construction of drainage and filter systems are fundamental examples of highway earthwork where the control of the material and how it is placed significantly influences engineering performance. This course provides an overview of the basic applications where fill materials are to be used and some common problems and safety considerations that you will need to know. Fill Placement is the fifth part of the five-part Earthwork Series.

Target audience: This training targets agency and industry technicians on an earthwork project using earth materials as engineering materials. This training is beneficial to anyone working on the project but is targeted at the intermediate to the advanced technician.

Learning outcomes: Upon completion of the course, participants will be able to:
- Explain fill placement;
- Recall fill placement safety procedures; and
- Identify steps for addressing obstacles associated with fill placement.

Earthwork: Grades and Grading (3 PDHs)
Item Code: TC3CN023-15-T1
Knowledge Categories: Construction
Course Overview: This course is designed to prepare technical frontline workers for what they can expect to see during actual project inspection. Topics covered include an overview of the plans that pertain to earthwork and earthwork quantities, grade stakes that will be encountered and their meanings, how the Global Positioning System (GPS) works and its functions in the field, and verifying and documenting grade information. Grades and Grading is the third part of the five-part Earthwork Series. The introductory lesson covers an overview of the plan sheets that deal with earthwork and earthwork quantities, topographical images, their meaning, stationing and control points, and profile/section sheets. The second lesson covers the typical grade stakes used throughout a project and their meaning. The third lesson discusses the history of GPS in construction and its relation to current projects. The final lesson covers how to verify the grade and what information is needed in the documentation from the inspector.

Target audience: This training targets agency and industry technicians on an earthwork project using earth materials as engineering materials. This training is beneficial to anyone working on the project but is targeted at the intermediate to the advanced technician.

Learning outcomes: Upon completion of the course, participants will be able to:
- Describe the process of plan reading;
- Identify the purpose of grade stakes;
- Explain how Global Positioning System (GPS) works; and
- Describe requirements for grade verification and documentation.

Earth Work: Site Preparation (1.5 PDH)
Item Code: TC3CN022-15-T1
Knowledge Categories: Construction
Course Overview: This module is designed to help inspectors understand the responsibilities of preparing the site for the start of the construction process. This includes clearing and grubbing, utility

relocation, and inspector responsibilities. Site Preparation is one of the modules included in the Earthwork Series.

The first lesson of this module will define clearing, grubbing, and scalping of the site and cover the plan notes. The second lesson covers utility location. It will describe the main utility groups and utility relocation types and discuss preparation and staking procedures. This lesson also discusses the need for traffic control during the relocation process. The last lesson covers the inspector's role during the utility relocation process. This lesson covers backfilling and compaction, utility conflicts, and documentation responsibilities. This course will assist the inspector in making sure the site is prepared according to specifications and in a safe environment.

Target audience: This training targets agency and industry technicians on an earthwork project using earth materials as engineering materials. This training is beneficial to anyone working on the project but is targeted at the intermediate to the advanced technician.

Learning outcomes: Upon completion of the course, participants will be able to:
- Define clearing and grubbing responsibilities;
- Understand the processes involved during utility relocation; and
- Identify the inspector's responsibilities during site preparation.

Erosion and Sediment Control for Construction (3.5 PDHs)
Item Code: TC3CN052-17-T1
Knowledge Categories: Construction
Course Overview: The Erosion and Sediment Control for Construction course consists of five modules that provide introductory information about erosion and sediment control related to construction. Topics covered in these modules include the fundamental concepts of erosion, applicable regulations, land disturbance activities, inspection and maintenance of erosion, and sediment control activities. This course focuses on erosion and sediment control measures designed to prevent environmental damage caused by pollution prevention related to construction materials, equipment operations, maintenance, and soil erosion and sedimentation from land development. The course also covers construction site stormwater runoff, which is regulated on the local level and at the State level, as well planning, design, and inspection of erosion and sediment control practices.

Target audience: This training is geared toward technicians, inspectors, and supervisors responsible for erosion and sediment control.

Learning outcomes: Upon completion of the course, participants will be able to:
- Explain what erosion and sediment control means for transportation construction;
- List the Federal regulations related to erosion and sediment control during construction;
- Explain how State regulations related to erosion apply to transportation construction activities;
- Describe erosion and sediment control best management practices when performing land disturbance activities;
- Describe how erosion and sediment control plans are read on construction sites;
- Explain who is responsible for implementing a new erosion and sediment control practice when plans need to be updated;
- List some of the key inspection activities related to erosion and sediment control;
- List the maintenance dos and don'ts related to erosion and sediment control; and
- Explain how erosion and sediment control activities are enforced.

Guardrail Series: Bolted Connections (4 PDHs)
Item Code: TC3CN006-16-T1

Knowledge Categories: Construction

Course Overview: Bolting is a common method of making connections, and care should be exercised in their design, installation, and maintenance. This course is divided into two modules: installation and inspection. For both modules, it is suggested that participants have a basic familiarity with construction and mechanical principles. All participants in Module 2: Inspection should have mastered the principles taught in Module 1: Installation and should have experience in construction inspection.

Module 1: Installation is divided into four sections:
- Structural joints, their types, and how they carry a load;
- Structural fasteners and talks about their care and handling;
- Torque and tension and how they are measured and applied; and
- Approved tightening methods and tools.

Module 2: Inspection is also divided into four sections:
- Documentation and storage;
- Components of pre-job inspection;
- Calibration and testing; and
- Verification of installation.

Target audience: This training is designed for agencies and their industry counterparts involved in installing and inspecting bolts and bolted connections on construction projects.

Learning outcomes: Upon completion of the course, participants will be able to:
- Explain the advantages of bolts in structural joints;
- Identify the three structural joint types and discuss when each is used and the differences in how they are tightened;
- Describe structural fasteners with their various grades, forms, finishes, and coatings, and how they are matched, prepared for use, accounted for, stored, and handled;
- Explain the four accepted methods for achieving desired bolt preload and the relative advantages/disadvantages of each;
- Explain and give examples of the manufacturer's certificates, shipping documents, storage requirements, and site records associated with structural fasteners;
- Locate and interpret the appropriate industry standards for joint and fastener types and specifications;
- Conduct and audit torque-tension and ROCAP tests and verify test records; and
- Explain the checkpoints and how you would audit to verify proper assembly for the following tightening methods: turn-of-nut, torque control, DTI washers, and TC bolts.

Guardrail Series: Guardrail Basics (2 PDHs)
Item Code: TC3CN041-16-T1
Knowledge Categories: Construction, Materials, Maintenance, Traffic, and Safety
Course Overview: This course introduces guardrails, including their purpose, components, and considerations (for example, clear zones).
This course is divided into three modules:
Module 1: Introduction to Guardrail Systems will explain the components of a guardrail and explain how barriers are used.
Module 2: Guardrail Performance Requirements will discuss the industry requirements and standards for guardrails and their evolution over time.

Module 3: Fundamental Guardrail Concepts will discuss roadside topography and define clear zones and length of need.

Target audience: The target audience for this course includes project inspectors, construction personnel, maintenance personnel, and others involved in guardrail installation, inspection, and maintenance. In addition, designers and supervisors (project/program managers) may benefit from this course.

Learning outcomes: Upon completion of the course, participants will be able to:
- Explain the purpose of guardrail systems;
- Describe the components of a guardrail system;
- Describe the information that can be found in standard guardrail references (NCHRP 350, MASH, etc.);
- Explain why it is necessary to update guardrail standards and performance requirements over time;
- Describe the clear zone concept;
- List the factors that can impact the clear zone distance; and
- Define the length of need.

Guardrail Series: Installation and Inspection of New Guardrails (2.5 PDHs)
Item Code: TC3CN042-17-T1
Knowledge Categories: Construction, Materials, Maintenance, Traffic and Safety
Course Overview: This course discusses installing new guardrail systems, including the most widely used guardrail heights. The general inspection process also includes scenarios showing potential problems and solutions.
This course is divided into two modules:
Module 1: Guardrail Installation Systems and Placement covers 27- and 31-inch guardrail heights. The sections of a guardrail are discussed, and considerations for guardrail placement, including depth, soil support, deflection, etc. The considerations for median barriers are also explained.
Module 2: New Guardrail Installation Inspection describes guardrail inspection and explains what should be documented along the way. Scenarios are presented for various guardrail installation situations.
Target audience: The target audience for this course includes project inspectors, construction personnel, maintenance personnel, and others involved in guardrail installation, inspection, and maintenance. In addition, designers and supervisors (project/program managers) may benefit from this course.

Learning outcomes: Upon completion of the course, participants will be able to:
- Compare 27-inch and 31-inch guardrails;
- Describe how guardrails are installed in standard sections, terminal end sections, curbs, and transitions;
- List important considerations for guardrail placement (depth, post length, soil support, deflection, height, etc.);
- Explain important considerations for the installation of median barriers;
- Describe the general process for guardrail inspection, including reading and interpreting plans;
- Explain what should be documented during the new guardrail installation inspection (including in the inspector's daily report/daily diary); and
- In a guardrail installation situation, explain what you would do next.

Guardrail Series: Maintenance and Repair (1.5 PDHs)
Item Code: TC3MN029-16-T1
Knowledge Categories: Construction, Materials, Maintenance, Traffic and Safety
Course Overview: This course provides information on the correct procedures for maintaining and repairing guardrails.
This course is divided into two modules:
Module 1: Inspection and Maintenance of Existing Guardrails review the importance of guardrail maintenance and how damage is assessed.
Module 2: Guardrail Repair reviews guardrail repair procedures and the information contained in the guardrail repair report.
Target audience: The target audience for this course includes project inspectors, construction personnel, maintenance personnel, and others involved in guardrail installation, inspection, and maintenance.
Learning outcomes: Upon completion of the course, participants will be able to:
- Explain why proper maintenance and repairs are important;
- Define the levels of damage used to describe guardrail conditions;
- Describe basic inspection procedures and what you should look for when inspecting a guardrail;
- Explain how repairs are made, including the critical actions before repairing;
- Determine if an inspection is needed after guardrail repair and what to look for; and
- List the information included in the repair record.

Intelligent Compaction (2 PDHs)
Item Code: TC3CN087-18-T1
Knowledge Categories: Construction, Maintenance
Course Overview: Compaction is one of the final and most important processes in roadway construction. This process is needed to reach the desired uniform density, ensuring longer-lasting support, stability, and strength. This course aims to teach construction personnel the benefits, use, and interpretation of intelligent compaction data. To maximize the benefit of intelligent compaction, several construction personnel need to be involved in collecting, using and interpreting the data. This course is divided into five modules. They are:
- Introduction to Intelligent Compaction;
- Intelligent Compaction Construction;
- Intelligent Compaction Data Analysis;
- Quality Control; and
- Inspection and Acceptance.
Target audience: Anyone involved in the intelligent compaction process and any construction personnel using and interpreting intelligent compaction data.
Learning outcomes: Upon completion of the course, participants will be able to:
- Define intelligent compaction (IC);
- List the reasons to employ IC over traditional methods;
- Summarize the benefits and processes of highway construction using IC;
- Explain the training and personnel requirements required for successful IC implementation;
- Describe how IC data analysis is used to improve the uniformity of compaction;
- Describe the process of analyzing data and IC software outputs available;
- Describe general IC quality control plan characteristics;
- Describe responsibilities of key quality control personnel during IC construction activities;
- Describe the key inspection checks for IC field operations; and

- Summarize typical IC acceptance.

PCC: Basics of Cement Hydration (1 PDH)
Item Code: TC3MS009-15-T1
Knowledge Categories: Construction, Materials
Course Overview: This module covers how a concrete mixture changes quickly from a plastic state to becoming a solid concrete slab. Central to this transformation is a complex process called hydration, an irreversible series of chemical reactions between water and cement.
Target audience: This training is designed for agencies and their industry counterparts involved in the process to assure that the mix design and proportioning of Portland cement concrete (PCC) materials meet specification requirements and provide good durable concrete. It applies to anyone desiring a better understanding of the mixed design of PCC.
Learning outcomes: Upon completion of the course, participants will be able to:
- Understand the physical and chemical occurrences that happen during cement hydration;
- Identify various factors that can adversely affect these occurrences; and
- Recognize the different temperature changes during particular stages of hydration.

PCC Pavement Construction: Curing, Sawing, and Joint Sealing (1 PDH)
Item Code: TC3CN032-16-T1
Knowledge Categories: Construction
Course Overview: This training covers crack prevention, sawing, and sealant types, including installation. The Construction of PCC Pavements series is divided into three courses: Production, Paving Process, Curing, Sawing, and Joint Sealing.
Target audience: This training is designed for contractors, technicians, and inspectors involved in daily pavement operations for the placement of PCC pavements. Participants should have some working knowledge of concrete pavement construction.

Learning outcomes: Upon completion of the course, participants will be able to:
- Describe curings effect on short- and long-term performance;
- Identify the different methods for curing PCC;
- Define sawing;
- Identify the types of saw cuts;
- Describe the different pieces of equipment used in sawing;
- Determine the sequence of sawing operations;
- Describe how traffic, raveling, noise and dust, and critical sequencing impact sawing;
- Troubleshoot sawing issues;
- Describe joint sealing operations;
- Identify sealant types; and
- Describe formed-in-place and preformed sealant types and installation.

PCC: Early Age Cracking (1 PDH)
Item Code: TC3MS008-15-T1
Knowledge Categories: Construction, Materials

Course Overview: Cracks are not a problem as long as they are controlled through jointing; ideally, the concrete will crack below the sawed joint to relieve the stress. Uncontrolled random cracks are not aesthetically acceptable and can reduce ride quality, durability, and particularly load transfer. Early cracking in this module is defined as those cracks that occur before the concrete is open to public traffic. In this module, we will be talking about early-age cracking. Why does it happen, and how can it be eliminated or at least controlled?

Target audience: This training is designed for agencies and their industry counterparts involved in the process to ensure that concrete meets all the requirements to prevent early age cracking. It applies to anyone desiring to better understand the causes and prevention of early-age cracking.

Learning outcomes: Upon completion of the course, participants will be able to:
- Describe the various mechanisms that can lead to early-age cracking;
- Define and understand why curling and warping occur;
- Recognize how curling and warping affect early age cracking;
- Recognize the proper use of the materials and maintaining good construction practices can control early age cracking; and
- Describe how certain material properties and construction methods can affect early age cracking and can help prevent the cracking from occurring.

PCC: Hardened Concrete Properties - Durability (1 PDH)
Item Code: TC3MS004-15-T1
Knowledge Categories: Construction, Materials
Course Overview: Durability as a property of hardened concrete is essential for long-lasting pavements. This workshop discusses factors that contribute to durable concrete and covers permeability, frost resistance, sulfate resistance, alkali-silica attack, and a brief look at abrasion resistance.

Target audience: This training is designed for agencies and their industry counterparts involved in the process to ensure that concrete meets all the requirements for durability. It applies to anyone desiring a better understanding of the factors of durability.

Learning outcomes: Upon completion of the course, participants will be able to:
- Recognize factors that contribute to durable concrete;
- Explain the importance of permeability, alkali-silica reaction, abrasion resistance, and, in certain regions in the country, frost resistance and sulfate resistance of hardened concrete; and
- Identify tests that can be performed to determine the variables affecting the durability of hardened concrete.

PCC: Material Fundamentals (2 PDHs)
Item Code: TC3MS005-15-T1
Knowledge Categories: Construction, Materials
Course Overview: The materials used in Portland cement concrete (PCC) play an extremely valuable role in the performance of the concrete. This training covers both the non-reactive and reactive materials used in PCC. This would include the aggregates, curing compounds, reinforcement, and chemically reactive materials.

Target audience: This training is designed for agencies and their industry counterparts involved in the process to assure that the materials used in PCC meet specification requirements and are compatible with providing sound, durable concrete. It applies to anyone desiring a better understanding of PCC materials.

Learning outcomes: Upon completion of the course, participants will be able to:
- Identify materials used in PCC;
- Describe the importance of each material and the role it plays in the performance of the concrete; and
- Describe how each material reacts with the other materials to obtain strength, permeability, workability, etc.

PCC: Paving Inspection (5 PDHs)
Item Code: TC3CN004-15-T1
Knowledge Categories: Construction, Materials
Course Overview: This course has been prepared to provide guidance and instruction to inspectors involved in constructing Portland cement concrete (PCC) pavements. The important tasks involved in this work are explained, and proper procedures are described.
Target audience: This training is designed for anyone involved in the process of placement and inspection of PCC paving. It applies to anyone who wants to better understand PCC paving projects' activities and inspection procedures.
Learning outcomes: Upon completion of the course, participants will be able to:
- Identify the materials in a PCC mixture and the concrete properties;
- Comprehend design project plans and recognize the joints types and saw cuts;
- Identify the safety requirements and recognize safe traffic control practices;
- Recognize and comprehend the use of the equipment in a PCC paving project;
- Recognize various subgrade treatments;
- Inspect project tasks for compliance with pre-paving requirements, i.e., survey stakes, proof rolling, subgrade, and dowel baskets;
- Inspect project tasks for compliance with PCC paving requirements, i.e., string line, place and consolidate, finish, and texture; and
- Perform post-construction checks.

PCC Preservation: Concrete Overlays (2 PDHs)
Item Code: TC3MN026-15-T1
Knowledge Categories: Construction
Course Overview: This module is part of the curriculum from the Concrete Pavement Preservation Series, which presents current guidelines and recommendations for the design, construction, and selection of cost-effective concrete pavement preservation strategies. This module discusses how preventative maintenance impacts pavement preservation, good candidates for preservation, and the benefits of pavement preservation.
Target audience: This training is designed for design engineers, quality control personnel, contractors, suppliers, technicians, and tradespeople. While the course is aimed at those familiar with concrete pavements and pavement preservation, it is also of value to those new to the field.
Learning outcomes: Upon completion of the course, participants will be able to:
- Define concrete resurfacing;
- Define bonded and unbonded overlays;
- Identify the benefits of using concrete overlays ;
- Describe evaluation considerations:
- Describe primary design considerations;
- Identify recommended materials;
- Describe materials and construction activities; and
- Identify limitations in the use of overlays.

PCC: Troubleshooting (1 PDH)
Item Code: TC3MS013-15-T1
Knowledge Categories: Construction, Materials
Course Overview: This module covers using the information available in the AASHTO *Integrated Materials and Construction Practices for Concrete Pavement Manual* to identify and diagnose problems related to concrete pavement pre-and post-construction and develop a plan to address the problems.
Target audience: This training is designed for agencies and their industry counterparts involved in designing mixes, constructing, and inspecting PCC pavements.
Learning outcomes: Upon completion of the course, participants will be able to:
- Recognize IMCP manual tables 10-1 through 10-4 to identify and diagnose problems with Portland cement concrete (PCC) pavement; and
- Compose a plan to correct problems associated with PCC pavement.

Pipe Installation, Inspection, and Quality (7 PDHs)
Item Code: TC3CN018-15-T1
Knowledge Categories: Construction, Materials
Course Overview: This course is focused on the three basic pipe materials: concrete, metal, and plastic. It contains important instructional material, procedures, and guidance developed to maintain uniformity among pipe inspectors. This course will cover what you need to know, do, and look for during the inspection of pipe installation. This training provides an in-depth view of the basic materials used in pipe construction. The course modules will address the different types of pipe and the foundation work, bedding selection, placement, joint sealants, backfilling, and documentation for concrete, metal, and plastic pipe.
Target audience: This course targets field personnel involved in highway construction, from engineers to technicians. The ideal audience will have a mix of experience and responsibility levels so that more experienced participants can share agency-specific practices with those newer to the field. The course materials are also appropriate for project manager/resident engineer involvement.
Learning outcomes: Upon completion of the course, participants will be able to:
- Identify basic material pipe types;
- Recognize proper foundation and bedding requirements for pipe;
- Link different types of pipe using required specifications for installation;
- Identify common errors to avoid when dealing with placement, joints, and backfilling of pipe;
- Recognize the importance of accurate records and reporting.

Plan Reading: Basics (1 PDH)
Item Code: TC3CN009-15-T1
Knowledge Categories: Construction, Materials, Maintenance, Traffic and Safety
Course Overview: This training describes the foundational information needed to begin reading and understanding highway plans. Reading plans is essential for anyone involved in highway or bridge construction. This training includes an overview of the title page and its components, station numbers, townships, and quantity estimates.
Target audience: This training is designed for those involved in highways and highway structures' construction process and maintenance activities. It applies to anyone desiring a better understanding of plan reading.
Learning outcomes: Upon completion of the course, participants will be able to:
- Describe the components of a plan's title sheet;
- Calculate the distance between two station numbers;

- Explain how a township is designated in a plan; and
- Identify quantity estimates for given supplies and materials.

Plan Reading: Culvert Plans (1.5 PDHs)
Item Code: TC3CN016-15-T1
Knowledge Categories: Construction, Maintenance
Course Overview: This training reviews the information found in a culvert plan. Reading plans is essential for anyone involved in highway or bridge construction.
Target audience: This training is designed for those involved in highways and highway structures' construction process or maintenance activities. It applies to anyone desiring a better understanding of plan reading.
Learning outcomes: Upon completion of the course, participants will be able to:
- Identify the major components of a culvert;
- Describe the information provided in a culvert plan; and
- Using a culvert plan, explain details of the project.

Structure Inspection: Subsurface (4.5 PDHs)
Item Code: TC3CN053-17-T1
Knowledge Categories: Construction, Materials
Course Overview: This course provides an overview of the subsurface and foundation-related features of structures that need to be monitored and inspected during construction. The focus is on inspecting structures related to the geotechnical connection between the structure and the earth.
Target audience: This course is designed for individuals interested in bridge construction in the following roles: minimal experience or entry-level construction engineers, inspectors, and technicians. This training is focused on the technicians and inspectors but is also an excellent refresher for supervisors and managers.
Learning outcomes: Upon completion of the course, participants will be able to:
- Explain the key types, activities, and safety practices involved in subsurface construction;
- Describe the activities that are done to prepare the subsurface for construction;
- Explain how falsework and temporary work bridges are utilized during subsurface construction;
- Explain how piles are used to establish bridge foundations;
- Describe the inspection activities that should be performed during pile foundation construction;
- Explain how drilled shafts are used to establish bridge foundations
- Describe the inspection activities that should be performed during drilled shaft foundation construction;
- Explain how spread footings are used to establish bridge foundations; and
- Describe the inspection activities that should be performed during spread footing foundation construction.

Structure Inspection: Substructures (3 PDHs)
Item Code: TC3CN054-17-T1
Knowledge Categories: Construction, Materials

Course Overview: This course introduces substructures and key inspection elements, specifically the components that support the girders or beams of the superstructure deck, such as abutments, bents, and piers. Topics include general construction considerations, reinforcement and falsework, bridge drainage, cast-in-place, precast, 3D technology, and as-builts.

Target audience: This course is designed for individuals interested in bridge construction in the following roles: minimal experience and entry-level construction engineers, inspectors, and technicians. This training is focused on the technicians and inspectors but is also an excellent refresher for supervisors and managers.

Learning outcomes: Upon completion of the course, participants will be able to:
- Identify the key types, activities, and safety practices involved in substructure construction;
- Describe how falsework and forms are used to prepare the substructure for bridge construction;
- Identify the different types of retaining walls and their applications;
- Explain how retaining walls are inspected during construction;
- Describe the different types of abutments and their applications; and
- Explain how abutments are inspected during construction.

Structure Inspection: Rehabilitation and Maintenance (5 PDHs)
Item Code: TC3MN032-17-T1
Knowledge Categories: Construction, Materials
Course Overview: This course addresses several key inspection elements that should be considered for rehabilitation and maintenance. Like a home, once built, a structure needs to be maintained. This course covers general construction considerations, demolition, bridge repair, joint installation and replacement, rehabilitation inspections, and coatings.

Target audience: This course is designed for individuals interested in bridge construction in the following roles: minimal experience or entry-level construction engineers, inspectors, and technicians. This training is focused on the technicians and inspectors but is also an excellent refresher for supervisors and managers.

Learning outcomes: Upon completion of the course, participants will be able to:
- Explain the key safety practices and activities involved in the rehabilitation and maintenance of structures;
- Explain key inspection considerations of structural rehabilitation and repair;
- List some key repair activities related to concrete and steel structures, as well as decks;
- Describe how demolition is performed for bridge rehabilitation activities;
- Explain what rehabilitation activities are performed related to joints; and
- Describe how coatings are used in bridge rehabilitation and maintenance activities.

Warm Mix Asphalt (2 PDHs)
Item Code: TC3CN079-18-T1
Knowledge Categories: Construction
Course Overview: This course provides an overview of warm mix asphalt placement for quality control technicians and inspectors. This course briefly describes the production process of warm mix asphalt compared to hot mix asphalt, the financial and environmental benefits of warm mix asphalt, and what inspectors should look for during plant production. The placement and compaction process of warm mix asphalt is also covered. This course emphasizes effective communication between

contract personnel and State DOTs and quality control plan requirements, including target temperatures for compaction.

Target audience: The target audience for this training includes quality control and field personnel, such as technicians and inspectors of State DOTs and contractors and consultants.

Learning outcomes: Upon completion of the course, participants will be able to:
- Define warm mix asphalt;
- Explain the difference between warm and hot mix asphalt;
- Describe how warm mix asphalt is produced, including any special processing equipment;
- Describe how warm mix asphalt is placed;
- List key details that technicians and inspectors should be aware of during the application process;
- Describe the compaction process for warm mix asphalt; and
- Explain how quality control and acceptance are performed once completed.

Employee Development

Ethics Awareness for the Transportation Industry (1 PDH)
Item Code: TC3ED001-15-T1
Knowledge Categories: Materials, Construction, Maintenance, Employee Development
Course Overview: The Ethics Awareness for the Transportation Industry course contains good practices from various agencies. The topics of discussion in this training are conflict of interest, safety, fraud, falsification of documentation, reporting ethical concerns, gifts and favors, fairness, personal use of agency property, and consequences.

Not all State agencies' codes of conduct are the same, but they all demand similar ethical behavior from their employees. Be sure to access your agency's codes or check with your supervisor for more information specific to your organization. Each State agency/company has its own work rules, which the viewer needs to review and follow.

Target audience: This training is intended for State and local public agency personnel and their industry counterparts involved in the construction, maintenance, and testing processes for highways and structures.

Learning outcomes: Upon completion of the course, participants will be able to:
- Describe agency expectations on ethics;
- Give an example of a current code of conduct policy;
- Recognize and practice good ethics as an employee in the transportation industry; and
- Explain the consequences when rules and regulations are not followed.

Ethics Awareness for Engineers (3 PDHs)
Item Code: TC3ED020-18-T1
Knowledge Categories: Employee Development
Ethics are moral values that affect personal or professional actions. They are more than a set of rules. Ethics is knowing how to apply the rules and having the strength of character to behave ethically. In short, they are the difference between right and wrong. This course focuses on ethics for professional engineers.

Professional engineers are expected to exhibit the highest standards of honesty and integrity. Services provided by engineers require honesty, impartiality, fairness, and equity. Engineers must perform their duties in alignment with a standard of professional behavior that requires adherence to the highest principles of ethical conduct.

Target audience: The target audience for this training is professional engineers, emphasizing those involved in constructing highways and structures.

Learning outcomes: Upon completion of this course, participants will be able to:
- Explain what ethics are and how they are established;
- Describe ethical and unethical behavior;
- List guidelines in national codes of ethics from the American Society of Civil Engineers (ASCE) and the National Society of Professional Engineers (NSPE);
- Explain how to develop a code of ethics;
- Explain why an organization should have an established, supported ethical program; and
- List the benefits of ethics in the workplace;
- Describe different types of conflict of interest; and
- Given a scenario, determine if a conflict of interest has occurred.

Maintenance

Asset Management for Transportation (2 PDHs)
Item Code: TC3ED003-15-T1
Knowledge Categories: Maintenance, Pavement Preservation, Employee Development
This training explains the basics of asset management and why it is important. This training will provide new terms and new ways of thinking about what you're already doing. More importantly, you'll understand why it's so important to be strategic and systematic when you're responsible for managing huge numbers of assets.
This training contains the following lessons:
- Lesson 1: What is Transportation Asset Management? This lesson will explain the concept of asset management, give examples of how asset management is used in the planning process, and explain how past transportation needs have impacted current asset management practices.
- Lesson 2: Asset Management Principles and Practices. This lesson lists the categories of activity that inform spending decisions, explains how policy goals and objectives impact asset management, relates planning and programming to managing assets, describes how asset management principles apply to program delivery, explains why system monitoring is necessary and explains how quality data and analysis impact asset management.

Target audience: This course is intended for managers from State departments of transportation and other transportation agencies responsible for decision-making in one or more areas addressed by transportation asset management. In addition, those who manage individual assets or provide critical information to senior managers, or have direct responsibility for meeting specific transportation system performance or program delivery targets are also excellent candidates for attending the course.

Learning outcomes: Upon completion of the course, participants will be able to:
- Explain what transportation asset management is and why it is important; and
- Describe the asset management principles and practices used to make informed spending decisions.

Fleet Management: Benchmarking and Best Practices for State Equipment Fleet Management (3 PDHs)
Item Code:

Knowledge Categories: Maintenance, Employee Development

The topic of benchmarking is closely aligned with performance management. Most agencies have a strategic plan from which they decide how to allocate resources and pursue their long-range strategy. This course discusses creating a group of performance metrics to track based on what's important in an agency's long-range strategy. This course also covers developing performance metric targets, measurement techniques, internal and external benchmarking, performance gaps, limitations of benchmarking, and benchmarking best practices.

This course is divided into five modules — each of which presents a key concept:
- Module 1: Performance Management;
- Module 2: Performance Metrics;
- Module 3: Performance Management Systems;
- Module 4: Benchmarking; and
- Module 5: Best Practices.

Target audience: The target audience for this training includes maintenance supervisors, managers, and engineers who manage their organization's fleet.

Learning outcomes: Upon completion of this course, participants will be able to:
- Identify a proper mix of performance measures;
- Develop and report effective performance metrics for the agency, fleet, and shop activity levels;
- Describe the differences between internal and external benchmarking;
- Identify what an agency should do with benchmarking data;
- Explain the limitations of benchmarking; and
- Identify best practices.

Maintenance Series Preview (0.5 hours)
Item Code: TC3MN031-16-T1
Knowledge Categories: Maintenance

This preview offers a quick summary of the modules that make up the Maintenance Training Series. The Maintenance Training Series was created to train individuals responsible for maintaining our nation's roadways. The series consists of several self-paced, Web-based training on various maintenance operations topics, ranging from the conceptual (pavement preservation) to the practical (management of underground storage tanks).

The following eight courses are a part of the Maintenance Series:
- Base and Subbase Stabilization and Repair (1.0 PDH)
- Cultural and Historic Preservation (1.0 PDH)
- Pavement Preservation Program (1.0 PDHs)
- Roadside Vegetation Management (1.0 PDH)
- Roadway Drainage (1.0 PDH)
- Shaping and Shoulders (1.5 PDH)
- Thin HMA Overlays and Leveling (1.5 PDH)
- Weather-Related Operations (1.0 PDH)

Maintenance Series: Base and Subbase Stabilization and Repair (1.0 PDH)
Item Code: AT-TC3MN018-16-T1
Knowledge Categories: Maintenance

Course Overview: Before preservation treatments can be applied, localized repairs may be necessary for a pavement's base or subbase. The Base and Subbase Stabilization and Repair course give participants the knowledge to determine if the base or subbase must be stabilized or repaired, select the appropriate stabilization and repair methods for a given project, and ensure the repair is performed correctly. This training reviews the failures and distresses that indicate structural deterioration in a roadway. The course also covers project selection and trade-off considerations, for example, roadway projects that allow participants to evaluate a roadway and determine if it is a candidate for reconstruction or repair. Participants can use this information and guidance on design and construction to make sound project planning decisions.

Target audience: This course is designed for those who manage operations programs and deal with oversight and quality assurance across broad geographic areas. This target audience also is involved with handling materials, scheduling, budgeting, and planning.

Learning outcomes: Upon completion of the course, participants will be able to:
- Identify the symptoms of a localized base or subbase problem, which require greater depth of stabilization and repair than a hot-mix asphalt (HMA) or Portland cement concrete (PCC) surface repair patch;
- Determine when it is appropriate to employ base or subbase repair on a preventive maintenance project; and
- Identify the most appropriate repair methods if base or subbase failures are identified in a project.

Maintenance Series: Cultural and Historic Preservation (1.0 PDH)
Item Code: AT-TC3MN025-16-T1
Knowledge Categories: Maintenance
Course Overview: Cultural and historical sites are often located within an area where maintenance activities are scheduled to be completed. This training teaches participants about regulations and concerns regarding safeguarding cultural and historic sites from the potential impacts of highway maintenance activities. Examples of maintenance activities that can impact such sites include slope stabilization, shoulder or pavement widening, and vegetation control. Additional examples are presented during the course.

This course assists participants with recognizing potential historic or cultural resources, verifying a site's cultural or historical status, and avoiding impacts on sites when carrying out maintenance activities. Since completing these tasks often requires additional expertise, resources for obtaining needed assistance are provided.

Target audience: This course is designed for those who manage operations programs and deal with oversight and quality assurance across broad geographic areas. This target audience also is involved with handling materials, scheduling, budgeting, and planning.

Learning outcomes: Upon completion of the course, participants will be able to:
- Identify governing bodies and registries that should be consulted before commencing maintenance activities on sites of cultural and historical importance;
- Recognize what sorts of structures, landmarks, and properties could pose potential cultural and historic preservation issues;
- Describe how to avoid impacts on historic sites; and
- Describe the role of DOT in maintaining and enhancing cultural resources.

Maintenance Series: Pavement Preservation Program (1.0 PDHs)
Item Code: AT-TC3MN015-T1
Knowledge Categories: Maintenance
Course Overview: Pavement preservation represents a significant paradigm shift in how many transportation agencies view and operate their highway networks. The Pavement Preservation

Program course provides basic information on what comprises a pavement preservation program and how it is implemented. It emphasizes changes in practice and the assignment of dedicated funding. Additionally, this course covers the benefits and challenges of a preservation program and approaches to communicating its advantages to stakeholders. This training was developed as part of the Maintenance Training Series. To access all the courses in the series, enroll in the TC3MN014-15-T1 course.

Target audience: This course is designed for those who manage operations programs and deal with oversight and quality assurance across broad geographic areas. This target audience also is involved with handling materials, scheduling, budgeting, and planning.

Learning outcomes: Upon completion of the course, participants will be able to:
- Identify the benefits and challenges of implementing a pavement preservation program; and
- Determine ways to develop support for a pavement preservation program.

Maintenance Series: Roadside Vegetation Management (1.0 PDH)
Item Code: AT-TC3MN021-16-T1
Knowledge Categories: Maintenance
Course Overview: Vegetation management is more than routine grass mowing and trimming bushes and trees. The Roadside Vegetation Management course explains the need for, and purpose of, good vegetation management. The course also underscores why vegetation management is critical for a roadway maintenance program. Participants of this course will learn about equipment and herbicides used for vegetation management, including an overview of mechanical vegetation control and the environmental controls and precautions needed when using herbicides as part of a noxious weed control program.

Target audience: This course is designed for those who manage operations programs and deal with oversight and quality assurance across broad geographic areas. This target audience also is involved with handling materials, scheduling, budgeting, and planning.

Learning outcomes: Upon completion of the course, participants will be able to:
- Describe why vegetation control is important to roadway safety and performance;
- Identify the types of equipment used for mechanical vegetation control;
- Identify types of herbicide vegetation management methods, their use, environmental control, and precautions; and
- Describe the requirements of a noxious weed control program.

Maintenance Series: Roadway Drainage (1.0 PDH)
Item Code: AT-TC3MN019-16-T1
Knowledge Categories: Maintenance
Course Overview: Shoulder, ditch, and pipe or culvert maintenance activities are performed frequently throughout the year. These activities are critical for avoiding hazardous roadway conditions and extending the life of pavements by controlling water flow along maintainable pathways. This course provides information on the purpose, function, and components of roadway drainage systems. This course reviews the components of shoulders and ditches, the purpose of a roadway drainage inventory, and the permits used in roadway drainage maintenance. Examples of existing drainage inventories are provided. In addition, the benefits of proper water removal are discussed through examples of drainage system issues, such as ponding and washouts, to emphasize the connection between good drainage and roadway safety.

Target audience: This course is designed for those who manage operations programs and deal with oversight and quality assurance across broad geographic areas. This target audience also is involved with handling materials, scheduling, budgeting, and planning.

Learning outcomes: Upon completion of the course, participants will be able to:

- Identify the purpose and function of roadway drainage systems;
- List eight components of roadway drainage systems;
- Identify the purpose of a roadway drainage inventory;
- Identify the purpose of permits in roadway drainage maintenance; and
- List the components of shoulders and ditches.

Maintenance Series: Shaping and Shoulders (1.5 PDH)
Item Code: AT-TC3MN016-16-T1)
Knowledge Categories: Maintenance
Course Overview: Shoulders play an important role in pavement performance and roadway safety. Maintaining shoulders timely and adequately is a primary goal of transportation agencies. To assist agencies in meeting this goal, the Shaping and Shoulders course provides information on the maintenance of both paved and unpaved shoulders, including specific details on the maintenance of gravel shoulders. In addition to discussing the various types of shoulders, project selection considerations, and key maintenance issues, this training places shoulders and shaping into the context of the overall maintenance and pavement preservation program.
Target audience: This course is designed for those who manage operations programs and deal with oversight and quality assurance across broad geographic areas. This target audience also is involved with handling materials, scheduling, budgeting, and planning.
Learning outcomes: Upon completion of the course, participants will be able to:
- Identify desirable characteristics of various types of shoulders;
- Identify project selection considerations for shaping and shoulders;
- Describe shoulder shaping and blading activities, including equipment requirements and construction activities; and
- Describe how a shoulder and ditching program forms the core of the overall maintenance and pavement preservation program.

Maintenance Series: Thin HMA Overlays and Leveling (1.5 PDH)
Item Code: AT-TC3MN017-16-T1
Knowledge Categories: Maintenance
Course Overview: Thin hot-mix asphalt (HMA) overlays and leveling are common pavement treatments and can be central to a maintenance crew's activities. During the Thin HMA Overlays and Leveling course, participants will be introduced to the characteristics and purposes of thin HMA overlays and the placement of leveling courses. Each of these techniques can improve the functionality of an otherwise structurally sound pavement.
This training also covers the materials, personnel, and equipment needed for thin HMA overlays, items that should be considered when making project selection decisions, and guidance on proper mixture compaction. This information is designed to help participants improve project planning and execution for thin HMA overlays and leveling treatments.
Target audience: This course is designed for those who manage operations programs and deal with oversight and quality assurance across broad geographic areas. This target audience also is involved with handling materials, scheduling, budgeting, and planning.
Learning outcomes: Upon completion of the course, participants will be able to:
- Determine the purpose of thin HMA overlays and leveling courses;
- Identify material components of HMA overlays;
- Identify personnel and equipment needed for HMA overlays and leveling construction;
- Identify project selection considerations for thin HMA overlays and leveling; and
- Identify how this treatment can be incorporated into an overall system preservation program.

Maintenance Series: Weather-Related Operations (1.0 PDH)
Item Code: AT-TC3MN022-16-T1
Knowledge Categories: Maintenance
Course Overview: Storm control is a significant component of roadway maintenance in many areas of the country. State, municipal, and county agencies are responsible for providing safe, passable roadways even in severe weather. While most of the Weather-Related Operations course concentrates on snow and ice storms, many of the elements apply to other weather events. Tornadoes, hurricanes, and flooding all require coordination and dedication of maintenance personnel. In any weather event, agencies need to restore roadways and bridges to ensure they are safe for motorists.

Participants of this course will learn about the planning requirements for effective storm response, including scheduling and training personnel, identifying equipment needs, executing dry runs, and the additional requirements posed by a multi-day storm event. This training assists participants with planning and responding effectively to all weather-related operations.

Target audience: This course is designed for those who manage operations programs and deal with oversight and quality assurance across broad geographic areas. This target audience also is involved with handling materials, scheduling, budgeting, and planning.

Learning outcomes: Upon completion of the course, participants will be able to:
- Identify the elements of an effective storm response plan;
- Identify factors involved in scheduling personnel needs;
- Identify safety and training considerations for maintenance personnel who are involved in weather-related operations;
- Identify the types of equipment used in a snow and ice removal plan and their uses; and
- Describe how to identify equipment needs for a particular storm.

Materials

T209 Standard Method of Test for Theoretical Specific Gravity (Gmm) and Density of Hot-Mix Asphalt (2 PDHs)
Item Code: TC3MS024-17-T1
Knowledge Categories: Materials, Construction
Course Overview: The Standard Method of Test for Theoretical Maximum Specific Gravity (Gmm) and Density of Asphalt Mixtures is explained in this course. This includes all of the steps to prepare for, conduct, and report the findings of this test. To improve the quality of highway construction, maintenance, rehabilitation, and reconstruction projects, each State must ensure that appropriate and superior highway materials are incorporated into the finished highway infrastructure element. The only way to achieve this goal is to guarantee the utmost quality assurance possible. This means that qualified technicians involved in sampling and testing processes must be able to maintain their proficiencies and certification with applicable test methods.

Target audience: The target audience for this training includes plant technicians, laboratory technicians, private lab employees, and contractor employees who perform standard method tests for theoretical maximum specific gravity (Gmm) and density of hot mix asphalt (HMA). This is also a good refresher course for supervisors and managers exposed to HMA testing.

Learning outcomes: Upon completion of the course, participants will be able to:
- Explain why this test is used;
- List the equipment needed to run this test and describe preparation steps;
- Describe how the flasks, bowls, and pycnometers are standardized;
- Explain how samples are prepared;
- Describe how the theoretical maximum gravity test is performed;
- Calculate the theoretical maximum gravity of the specimen;
- Describe the supplemental procedure on porous aggregates;
- List whats documented in the gravity and density report; and
- Explain how to correct for different temperatures.

T283 Standard Method of Test for Resistance of Compacted Asphalt Mixtures Due to Moisture-Induced Damage (2 PDHs)
Item Code: TC3MS025-17-T1
Knowledge Categories: Materials, Construction
Course Overview: The Standard Method of Test for Resistance of Compacted Asphalt Mixtures to Moisture-Induced Damage is explained in this course. This includes all of the steps to prepare for, conduct, and report the findings of this test. To improve the quality of highway construction, maintenance, rehabilitation, and reconstruction projects, each State must ensure that appropriate and superior highway materials are incorporated into the finished highway infrastructure element. The only way to achieve this goal is to guarantee the utmost quality assurance possible. This means that qualified technicians involved in sampling and testing processes must be able to maintain their proficiencies and certification with applicable test methods.
Target audience: The target audience for this training includes plant technicians, laboratory technicians, private lab employees, and contractor employees who perform standard method tests for resistance of compacted asphalt mixtures to moisture-induced damage. This is also a good refresher course for supervisors and managers who perform asphalt testing.
Learning outcomes: Upon completion of the course, participants will be able to:
- Explain why this test is used;
- List the equipment needed to run this test and describe preparation steps;
- Describe how specimens are prepared in the laboratory and field;
- Describe how the dry and conditioned specimens are preconditioned for testing;
- Explain how the indirect tensile strength is determined for the specimens;
- Calculate the tensile strength for each specimen; and
- List what is documented in the compaction report.

Cold In-Place Recycling (CIR) (4 PDHs)
Item Code: TC3MN013-15-T1
Knowledge Categories: Materials, Construction, Maintenance
Course Overview: Cold in-place recycling (CIR) is a method of reconstructing any flexible pavement where the need arises from structural failures. These failures include transverse cracking, wheel rutting, potholes, surface irregularities, or a combination of these. The proper selection of a CIR process, in conjunction with good specifications and quality construction, are all important in pavement rehabilitation's long-term performance. This series on CIR will introduce each method and provide a background on when, how, and why that method is selected/used. This training provides an overview of CIR, including explaining the pre-production inspection, completing the control strip, total production of the mix, mix placement, curing and maintenance, acceptance testing, and measurement and payment. This course contains three modules:
1. Introduction to Cold In-place Recycling;

2. Cold In-place Recycling Full Production; and
3. Cold In-place Recycling Post Production.

This course will provide the inspector with a background and proper inspection procedures when placing cold-in-place hot mix asphalt.

Target audience: This course is intended for local, county, and State owner agency technicians and inspectors. It is also helpful for individuals who need awareness or basic understanding of cold in-place recycling

Learning outcomes: Upon completion of the course, participants will be able to:
- Explain what CIR is and why it is used;
- Describe what happens during pre-production;
- Explain how the control strip helps determine compaction procedures and why it is needed;
- Identify the factors that can influence a CIR mix;
- Describe important considerations during placement, compaction, and finishing;
- Explain the importance of curing and maintenance on the quality of a CIR surface; and
- Describe what happens once the surface is finished.

Corrosion of Structures (2 PDHs)
Item Code: TC3CN097-18-T1
Knowledge Categories: Construction, Maintenance
Course Overview: This course covers the corrosion effects on transportation structures, in particular, reinforcing steel, reinforced concrete, and structural steel and girders.

This course explains what corrosion is and how it applies to and appears in highway structures. Concrete and steel members are discussed, including prevention and corrosion mitigation measures. There are four modules in this course. They are:
1. Introduction to Corrosion;
2. Corrosion in Structures;
3. Structural Steel Corrosion; and
4. Reinforced Concrete Corrosion.

Target audience: The target audience for this training includes local, county, and DOT technicians, supervisors, and engineers that provide oversite and inspection on structures, PCC paving, or any project where steel would be used. The training is meant to provide information and support to employees looking for an introduction to corrosion of structures.

Learning outcomes: Upon completion of this course, participants will be able to:
- Define corrosion as it applies to highway structures;
- List the key impacts of corrosion on structures;
- Provide examples of corrosion in structures;
- Summarize the causes of corrosion in structures;
- Describe the affected steel members and causes of corrosion;
- Explain corrosion control options for structural steel;
- Summarize considerations related to steel materials and construction that reduce corrosion;
- Describe the affected reinforced concrete members and causes of corrosion;
- Explain corrosion control options for reinforced concrete; and
- Summarize considerations related to concrete materials and construction that reduce corrosion.

Hot Mix Asphalt (HMA) Paving Inspection (4.5 PDHs)
Item Code: TC3CN005-15-T1
Knowledge Categories: Construction, Materials, Maintenance

Course Overview: This training provides guidance and instruction to inspectors involved in the construction of hot mix asphalt (HMA) pavement. The important tasks involved in this work are explained, and proper procedures are described. This training is arranged to help the inspector learn the various aspects of what is involved in an HMA paving operation and then become familiar with the duties that are a part of the HMA pavement grade inspection responsibilities. It also explains how to recognize the mixed properties of an HMA mixture. The information included will assist the inspector in identifying problems during a project and offering solutions to the problems. This training is not intended to cover every aspect of HMA paving.

Target audience: This training would be beneficial to anyone involved with an HMA paving project but focuses on technicians/inspectors involved with the production, placement, and inspection of HMA paving projects.

Learning outcomes: Upon completion of the course, participants will be able to:
- Understand various aspects of what is involved in an HMA paving operation;
- Understand the duties of an HMA paving inspector;
- Recognize the mix properties of an HMA mixture;
- Recognize the problems that may occur on HMA paving projects; and
- Understand the product and project so that solutions can be recommended.

Self-Consolidating Concrete Testing (1 PDH)
Item Code: TC3MS014-15-T1
Knowledge Categories: Construction, Materials
Course Overview: This training includes an overview of the fresh properties of self-consolidating concrete (SCC), including terminology, target guidelines, and quality control. In addition, the American Society for Testing and Materials (ASTM) test methods for slump flow and flow rate, passing ability using the j-ring, column segregation, static segregation, and making SCC test cylinders are reviewed.

Target audience: This training targets anyone who would like to understand more about self-consolidating concrete, including personnel running self-consolidating concrete tests in the field and supervisors in charge of field testing technicians.

Learning outcomes: Upon completion of the course, participants will be able to:
- Define SCC;
- Understand the terminology associated with SCC;
- Perform the tests associated with SCC; and
- Report the test results.

Trenchless Technology (5.5 PDHs)
Item Code: TC3CN040-16-T1
Knowledge Categories: Construction, Materials
Course Overview: This course introduces trenchless technology, its purpose, history, and explains the applications, permitting considerations, construction practices, and inspection guidelines. Iowa DOT provided the development of this course in partnership with TC3. Various applications are covered, including jack and bore, slip lining, pipe jacking, horizontal directional drilling (HDD), cured-in-place pipe (CIPP) lining for culvert rehab, lining with cementitious or polymer materials for pipe and

manholes, moles (hole hammers), micro tunneling, tunnel boring machine (TBM), and tunnel liner plates.

This course contains four modules:

1. Introduction to Trenchless Technology;
2. Trenchless Technology Applications;
3. Permits for Trenchless Projects; and
4. Construction and Inspection of Trenchless Projects.

Target audience: This course is ideal for individuals with new positions or needing a refresher in using and working with trenchless technology. This course also serves as an introduction for engineers unfamiliar with trenchless technology. Project members responsible for writing and submitting permits for trenchless technology on projects may also benefit from this course.

Learning outcomes: Upon completion of the course, participants will be able to:

- Explain what trenchless technology is and when it is used;
- Describe the evolution of trenchless technology;
- Describe the different trenchless technology applications for new installations;
- List the capabilities/limitations of different trenchless technology methods;
- Identify which trenchless technology should be used in a given situation;
- Explain site investigation goals, methods, and outcomes;
- Describe basic requirements for permitting;
- List best practices for completing permits for trenchless technology projects;
- Describe general guidelines for trenchless technology construction;
- Describe the trenchless construction inspection activities to be performed by the inspector and contractor;
- List construction practices the inspector should be aware of for each trenchless application;
- Describe the risks associated with trenchless technology projects; and
- Explain the difference between plans and as-built drawings.

Understanding Materials Testing for Inspectors (5 PDHs)
Item Code: TC3CN043-17-T1
Knowledge Categories: Construction, Maintenance
Course Overview: This course introduces materials testing for inspectors and entry-level quality assurance (QA) personnel. It provides basic information about testing, including roles, types of test procedures, and who should test. It also discusses the type/purpose of tests related to soils, aggregates, asphalt, concrete, and other non-field tests and what different test results tell us. Lastly, this training provides information on potential problems that may be encountered in the field and how to address those issues.

This course contains four modules. They are:

1. Introduction to Materials Testing;
2. Soils and Aggregates/Fill Material;
3. Asphalt; and
4. Concrete.

Target audience: This training is recommended for inspectors, entry-level QA staff, and individuals responsible for field testing construction materials.

Learning outcomes: Upon completion of this course, participants will be able to:

- Describe the inspector's role in materials testing;
- Explain what an inspector should know about testing materials related to soils/aggregates, asphalt, and concrete;
- List the properties of each material and explain why they are important;

- List the types of tests that are conducted for each material and explain their purpose;
- Describe how test results should be interpreted;
- Explain how the material should be placed; and
- Describe what can be done if material placement goes wrong.

Pavement Preservation

Chip Seal Best Practices (3 PDHs)
Item Code: TC3PP001-15-T1
Knowledge Categories: Maintenance, Pavement Preservation
Course Overview: The Chip Seal Best Practices course assists in the development and implementation of pavement preservation programs by identifying the benefits of using chip seal as part of a preventive maintenance program.
1. This course has six modules:
2. Introduction to Chip Seals;
3. Designing Chip Seal Mixes;
4. Selecting the Proper Materials for the Chip Seal Mix;
5. Use of Equipment;
6. Proper Construction Practices; and
7. Performance Measures of Chip Seals.

Target audience: This training would benefit entry-level construction inspectors, maintenance employees, and contractor personnel. It also serves as a refresher training for those already well-versed in selecting and applying chip seal as a preventive maintenance treatment.
Learning outcomes: Upon completion of the course, participants will be able to:
- Define chip seal;
- Describe how chip seals are used as a preventive maintenance treatment for pavement;
- Identify materials used in chip seals;
- Describe the characteristics of chip seal design;
- Identify types of chip seal;
- Identify the important considerations of aggregate and binder selection;
- Describe aggregate-binder compatibility;
- Describe equipment used in chip seal practices;
- Identify important variables in construction practice;
- Define the measures of control implemented over the quality of materials and construction;
- Identify construction best practices;
- Describe the components of engineering-based performance measures;
- Identify qualitative performance indicators for chip seal; and
- Define common visible chip seal distresses.

Flexible Pavement Preservation Treatment: Introduction (1 PDH)
Item Code: TC3PP003-16-T1
Knowledge Categories: Pavement Preservation, Maintenance
Course Overview: This training is part of the Flexible Pavement Preservation Treatment Series and is designed to introduce participants to the Pavement Preservation Treatment Construction Guide (PPTCG) and the basics of pavement preservation. Topics discussed include pavement structure, distresses, and differentiating pavement preservation from preventive maintenance. This training draws on the PPTCG, a resource for agency and industry pavement preservation practitioners. The

PPTCG provides information on basic pavement preservation concepts and the different treatments available, and how they should be applied.

Target audience: This training is ideal for highway construction and maintenance teams, specifically the highway workers and inspectors involved in the placement of pavement preservation treatments. Design engineers will also benefit from the online guide and the associated training.

Learning outcomes: Upon completion of the course, participants will be able to:

- Identify common surface distresses in pavements;
- Distinguish between distresses caused by surface failure and those caused by subsurface layer failure; and
- Recognize the difference between pavement preservation and pavement maintenance.

Flexible Pavement Preservation Treatment: Chip Seals (1.5 PDHs)
Item Code: TC3PP007-16-T1
Knowledge Categories: Pavement Preservation, Maintenance
Course Overview: Topics covered in this course include project selection, pavement and weather condition requirements, storage, traffic control, construction sequence, aggregate spreading distance, brooming, chip spreading process, distributor preparation, and troubleshooting. This training is part of the Flexible Pavement Preservation Treatment Series and is designed to provide participants with information on chip seals. This training draws on the Pavement Preservation Treatment Construction Guide (PPTCG), a resource for agency and industry pavement preservation practitioners. The PPTCG provides information on basic pavement preservation concepts and the different treatments available, and how they should be applied.

Target audience: This training is ideal for highway construction and maintenance teams, specifically the highway workers and inspectors involved in the placement of pavement preservation treatments. Design engineers will also benefit from the online guide and the associated training.

Learning outcomes: Upon completion of the course, participants will be able to:

- Recognize pavement conditions best suited to the chip seal treatment;
- Identify how proper storage and handling of chip seal materials affect their constructability and performance;
- Describe the construction of chip seals;
- Identify common problems associated with chip seals and recognize their solutions; and
- Recognize key capabilities and limitations of chip seals.

Flexible Pavement Preservation Treatment: Crack Sealing and Fillings (1.5 PDHs)
Item Code: TC3PP005-16-T1
Knowledge Categories: Pavement Preservation, Maintenance
Course Overview: Topics covered in this course include working and non-working cracks, fatigue, and longitudinal cracks, correct temperatures for crack sealant, crack repair sequence, hot sealant, and crack sealing or filling criteria. This training is part of the Flexible Pavement Preservation Treatment Series. It is designed to provide participants with information on crack sealing, crack filling, and joint sealing of flexible and rigid pavements. This training draws on the Pavement Preservation Treatment Construction Guide (PPTCG), a resource for agency and industry pavement preservation practitioners. The PPTCG provides information on basic pavement preservation concepts and the different treatments available, and how they should be applied.

Target audience: This training is ideal for highway construction and maintenance teams, specifically the highway workers and inspectors involved in the placement of pavement preservation treatments. Design engineers will also benefit from the online guide and the associated training.

Learning outcomes: Upon completion of the course, participants will be able to:

- Describe the difference between a working crack and a non-working crack;

- List the types of distresses that crack sealing, crack filling, and joint sealing treatments will repair;
- Describe how proper storage and handling of sealants and fillers affect their constructability and performance;
- Describe the procedure of repairing surface cracks and rigid joints;
- Identify common problems associated with crack sealing, crack filling, and joint sealing treatments and recognize their solutions; and
- List the capabilities and limitations of crack sealing, crack filling, and joint sealing treatments.

Flexible Pavement Preservation Treatment: Fog Seals (1 PDH)
Item Code: TC3PP008-16-T1
Knowledge Categories: Pavement Preservation, Maintenance
Course Overview: Topics covered in this course include uses of fog seals, suitable pavement surfaces, storage and handling of materials, the application process, and problems and causation. This training is part of the Flexible Pavement Preservation Treatment Series and is designed to provide participants with information on fog seals. This training draws on the Pavement Preservation Treatment Construction Guide (PPTCG), a resource for agency and industry pavement preservation practitioners. The PPTCG provides information on basic pavement preservation concepts and the different treatments available, and how they should be applied.
Target audience: This training is ideal for highway construction and maintenance teams, specifically the highway workers and inspectors involved in the placement of pavement preservation treatments. Design engineers will also benefit from the online guide and the associated training.
Learning outcomes: Upon completion of the course, participants will be able to:
- Recognize pavement conditions most suitable for a fog seal;
- Describe how proper storage and handling of fog seal materials affect their constructability and performance;
- Describe the construction of a fog seal;
- Identify common problems associated with fog seals and recognize their solutions; and
- List the key capabilities and limitations of fog seal treatments.

Flexible Pavement Preservation Treatment: Localized Pavement Repairs (1.5 PDHs)
Item Code: TC3PP006-16-T1
Knowledge Categories: Pavement Preservation, Maintenance
Course Overview: Topics covered in this course include pothole formation and edge failure, seal or fill decisions, construction of and problems with pothole patching, dig outs, edge repairs, skin patching, and capabilities and limitations of localized repairs. This training is part of the Flexible Pavement Preservation Treatment Series and is designed to provide participants with information on localized pavement repair. This training draws on the Pavement Preservation Treatment Construction Guide (PPTCG), a resource for agency and industry pavement preservation practitioners. The PPTCG provides information on basic pavement preservation concepts and the different treatments available, and how they should be applied.
Target audience: This training is ideal for highway construction and maintenance teams, specifically the highway workers and inspectors involved in the placement of pavement preservation treatments. Design engineers will also benefit from the online guide and the associated training.
Learning outcomes: Upon completion of the course, participants will be able to:
- Describe the mechanisms of pothole formation and edge failure;
- Select the type of localized pavement repair best suited to a given condition;
- Describe the process of pothole patching, dig outs, edge repairs, and skin patching;

- Identify common problems associated with pothole patching, dig outs, edge repairs, and skin patching and recognize their solutions; and
- List the key capabilities and limitations of localized pavement repairs.

Flexible Pavement Preservation Treatment: Materials (2 PDHs)
Item Code: TC3PP004-16-T1
Knowledge Categories: Pavement Preservation, Maintenance
Course Overview: Topics covered in this course include materials comprising maintenance treatments, emulsions, and aggregates. This training is part of the Flexible Pavement Preservation Treatment Series and is designed to provide participants with information on the materials used for preventive maintenance treatments. This training draws on the Pavement Preservation Treatment Construction Guide (PPTCG), a resource for agency and industry pavement preservation practitioners. The PPTCG provides information on basic pavement preservation concepts and the different treatments available, and how they should be applied.
Target audience: This training is ideal for highway construction and maintenance teams, specifically the highway workers and inspectors involved in the placement of pavement preservation treatments. Design engineers will also benefit from the online guide and the associated training.
Learning outcomes: Upon completion of the course, participants will be able to:
- List the materials used in preventive maintenance treatments for flexible and rigid pavements;
- Recognize the differences between asphalt cement and emulsions and their use in pavement preservation treatments; and
- List the six physical properties of aggregates that affect the performance of preservation treatments.

Flexible Pavement Preservation Treatment: Selecting the Right Treatment (0.5 PDH)
Item Code: TC3PP013-16-T1
Knowledge Categories: Pavement Preservation, Maintenance
Course Overview: This training provides participants with information on preservation treatment selection and is part of the Flexible Pavement Preservation Treatment Series. This training draws on the Pavement Preservation Treatment Construction Guide (PPTCG), a resource for agency and industry pavement preservation practitioners. The PPTCG provides information on basic pavement preservation concepts and the different treatments available, and how they should be applied.
Target audience: This training is ideal for highway construction and maintenance teams, specifically the highway workers and inspectors involved in the placement of pavement preservation treatments. Design engineers will also benefit from the online guide and the associated training.
Learning outcomes: Upon completion of the course, participants will be able to:
- Select the appropriate pavement preservation treatment(s) after analyzing given pavement and traffic conditions.

Flexible Pavement Preservation Treatment: Slurry Seals (1.5 PDHs)
Item Code: TC3PP009-16-T1
Knowledge Categories: Pavement Preservation, Maintenance
Course Overview: Topics covered in this course include reasons to use slurry seals, gradations of slurry seal aggregate, preparation and application process, and problems and solutions. This training

is part of the Flexible Pavement Preservation Treatment Series and is designed to provide participants with information on slurry seals. This training draws on the Pavement Preservation Treatment Construction Guide (PPTCG), a resource for agency and industry pavement preservation practitioners. The PPTCG provides information on basic pavement preservation concepts and the different treatments available, and how they should be applied.

Target audience: This training is ideal for highway construction and maintenance teams, specifically the highway workers and inspectors involved in the placement of pavement preservation treatments. Design engineers will also benefit from the online guide and the associated training.

Learning outcomes: Upon completion of the course, participants will be able to:
- Identify the type of slurry seal appropriate to various traffic conditions;
- Describe the construction of slurry seals;
- Identify common problems associated with slurry seals and recognize their solutions; and
- List the key capabilities and limitations of slurry seals.

Full-Depth Reclamation (FDR) (4.5 PDHs)
Item Code: TC3MN027-16-T1
Knowledge Categories: Materials, Construction, Maintenance
Course Overview: Full-depth reclamation (FDR) is a rehabilitation technique in which the full thickness of the asphalt pavement and a predetermined portion of the underlying materials (the base, subbase, and subgrade) is uniformly pulverized and blended to provide an upgraded, homogeneous material. This course will start with the basics of FDR and then move through pre-production and reclaiming to post-production activities.
This course contains four modules:
1. Introduction: This module introduces the topic of FDR of pavements.
2. Pre-production activities: This module discusses pre-production activities associated with FDR, including the pre-production meeting, roadway preparation, and FDR equipment needs.
3. Reclaiming the pavement: This module covers establishing a control strip, pulverization of material to be reclaimed, and the various methods and agents used to stabilize reclaimed materials.
4. Post-production: This module covers the steps that need to be taken following reclamation.

Target audience: This course is intended for local, county, and State owner agency technicians and inspectors. It is also helpful for individuals who need awareness or basic understanding of FDR of hot mix asphalt.

Learning outcomes: Upon completion of the course, participants will be able to:
- Identify the various types of FDR;
- Describe the stabilizing agents used for the different types of FDR;
- List advantages of using FDR as a rehabilitation technique;
- Describe why a pre-production meeting is important;
- Describe what preparation is needed for an FDR project;
- List the equipment needed for an FDR project;
- Identify the purposes of a control strip;
- Describe the process used to pulverize existing pavement material for FDR;
- List methods used to stabilize reclaimed materials;
- Describe the stabilizing agents and additives used for the stabilization of reclaimed materials;
- Describe the finishing steps involved in FDR;
- Identify factors and actions that can affect yield and gradation results;
- Describe the different methods of measuring compaction and the effect stabilizing agents may have on the results;

- List factors affecting how various FDR mixtures should be cured;
- Describe the steps involved in placing the final surface on a pavement; and
- List criteria for acceptance and payment for FDR pavements.

Hot In-Place Recycling (HIR) (2.5 PDHs)
Item Code: TC3CN026-15-T1
Knowledge Categories: Materials, Construction, Maintenance
Course Overview: Hot in-place recycling (HIR) is a pavement preservation and corrective maintenance technique that consists of heating and softening the existing asphalt pavement. When combined with an asphalt overlay, HIR can be classified as structural rehabilitation.

The HIR techniques described in this training provide owner agencies with cost-effective and sustainable methods to repair their aging pavements. HIR processes have been used on all functional classes of roadways. When properly designed, specified, and constructed, HIR methods can significantly cost savings compared to conventional maintenance operations.

This training consists of three modules:
1. Introduction to Hot In-Place Recycling;
2. Pre-Production Inspection; and
3. Full Production Pavement Recycling.

Target audience: This course is intended for local, county, and State owner agency technicians and inspectors. It is also helpful for individuals who need awareness or basic understanding of hot in-place recycling.

Learning outcomes: Upon completion of the course, participants will be able to:
- Explain the purpose, benefits, and use of HIR;
- Identify the purpose and use of HIR mixture designs and equipment that are both common to all applications and those used for only specific applications
- Identify the preparation and planning steps necessary for an HIR application; and
- Describe the production, evaluation, and payment steps necessary for an HIR application.

Traffic and Safety

Blood Borne Pathogens (1 PDHs)
Item Code: TC3TS015-16-T1
Knowledge Categories: Construction, Employee Development, Materials, Maintenance, Traffic and Safety
Course Overview: This course covers the basics of bloodborne pathogen safety and the techniques you can use to prevent any contamination, disease, or injury from occurring. In addition to covering safe work practices, this course will provide steps to take in case of bloodborne pathogen exposure.
Target audience: This training is suited for all workers who risk occupational exposure to pathogens, including those who make contact with blood through the skin, eye, mucous membrane, and via the parenteral route. Qualified first aid and CPR employees must also be trained.
Learning outcomes: Upon completion of the course, participants will be able to:
- Explain the importance of bloodborne pathogen safety;
- List training applicability and requirements;
- Describe the transmission routes and symptoms of Hepatitis B, Hepatitis C, and HIV;
- Describe safe work practices used to limit bloodborne pathogen exposure; and

- Describe the process for reporting exposure incidents.

Job Hazard Analysis (2 PDHs)
Item Code: TC3TS013-15-T1
Knowledge Categories: Maintenance, Traffic & Safety, Employee Development
Course Overview: This course reviews a job hazard analysis and why it should be performed. More specifically, this course identifies the information that should be documented during a job hazard analysis and provides examples of jobs and potential hazards encountered.
This training aims to explain what a job hazard analysis is and offer guidelines to help you conduct a step-by-step analysis. This information should be used to analyze jobs and recognize workplace hazards. This course contains three lessons:
1. Job Hazard Analysis Overview;
2. Job Hazard Analysis Forms; and
3. Job Hazard Examples.

Target audience: This training is designed for employers, foremen, supervisors, and employees.
Learning outcomes: Upon completion of the course, participants will be able to:
- Explain what job hazard analysis is and why it is important;
- Describe the types of information that should be documented in a Job Hazard Analysis Form;
- Given an example situation, list potential hazards.

Maintenance of Drainage Features for Safety (1 PDH)
Item Code: TC3TS014-15-T1
Knowledge Categories: Maintenance, Safety, Materials
Course Overview: This course highlights common roadway drainage problems that can cause an unsafe conditions and suggests inspection methods and corrective action. Maintaining roadway drainage is important for safety and for ensuring the long life of the roadway as it prevents erosion of the roadway, saturation of the subbase, and damage to roadway structures. Training has two modules:
- Module 1: Effects of Drainage describes common roadway safety hazards and how to recognize drainage problems.
- Module 2: Safe Drainage Features and Work Zones covers solutions to common roadway safety issues and work zone safety.

This training is not intended to be a design guide. Participants may want to contact their State Local Technical Assistance Program (LTAP) for more details on drainage design.
Target audience: This training is ideal for local road agency maintenance workers who want to understand the importance of maintaining and upgrading drainage features on their road system to avoid unsafe conditions.
Learning outcomes: Upon completion of the course, participants will be able to:
- Identify problems created by ponding and standing water on the roadway;
- Describe safety issues related to ditches and side slopes;
- Describe how drainage features can become safety hazards;
- Identify methods for identifying drainage problems;
- Recall conditions to look for during field inspections;
- Explain how to fix or prevent common roadway side slope problems; and
- Describe work zone safety procedures.

Safe Use of Basic Carpentry Tools (3 PDHs)
Item Code: TC3TS003-15-T1
Knowledge Categories: Employee Development, Materials, Maintenance, Traffic and Safety
Course Overview: Carpentry tools are a standard part of our day-to-day lives and are present in nearly every industry. These tools help us easily perform tasks that otherwise would be difficult or impossible. On the other hand, these simple tools can be hazardous and have the potential to cause severe injuries when used or maintained improperly. Special attention towards carpentry tool safety is necessary to reduce or eliminate these hazards. In the process of removing or avoiding the hazards, workers must learn to recognize the hazards associated with the different types of tools and the safety precautions necessary to prevent those hazards. This training will cover the proper use and maintenance of carpentry tools. This training is broken into three modules:

- Handsaws, Ladders, Screwdrivers, and Squares;
- Hammers, Sledge Hammers, Pry Bars, Rulers, and Levels; and
- Portable Power Tools.

Target audience: This course is designed for anyone who wants to learn more about carpentry tool safety.

Learning outcomes: Upon completion of the course, participants will be able to:

- Describe how to properly and safely use a handsaw;
- Explain how to erect and use various types of ladders safely;
- Describe proper use and care of standard and Phillips screwdrivers;
- Explain the correct way to use various types of squares;
- Describe the proper uses for these types of common basic carpentry tools;
- Explain safety considerations for each tool;
- Describe how to properly and safely use a portable electrical drill;
- Identify different types of drill bits and their appropriate use;
- Describe how to properly and safely use a circular saw; and
- Explain the purpose of various types of blades.

Safe Use of Hand and Power Operated Tools (1 PDHs)
Item Code: TC3TS002-15-T1
Knowledge Categories: Employee Development, Materials, Maintenance, Traffic and Safety
Course Overview: Hand and power tools are common in our day-to-day lives and are present in nearly every industry. These tools help us easily perform tasks that otherwise would be difficult or impossible. On the other hand, these simple tools can be hazardous and have the potential to cause severe injuries when used or maintained improperly. Special attention towards hand and power tool safety is necessary to reduce or eliminate these hazards. In the process of removing or avoiding the hazards, workers must learn to recognize the hazards associated with the different types of tools and the safety precautions necessary to prevent those hazards. This training will cover the proper use and maintenance of hand tools and a variety of power tools. This is an introductory course in the safe use of hand and power operated tools; it does not go into regulatory compliance or manufacturer's instructions.
Target audience: This course is designed for any individuals wanting to learn more about hand and power tool safety.
Learning outcomes: Upon completion of the course, participants will be able to:

- Describe how to properly and safely use a hand tool;
- Describe how to properly and safely use a power tool;
- List five types of power tools; and
- List the five general safety rules for power tools.

Texas Department of Transportation

Course Code: BRG100
Course Name: Bridge Construction Inspection
Length: 24 hours
NHI Course? No.
Course Description: This course covers an inspector's responsibilities & the aspects of inspecting bridges upon construction. Focus on: substructure, superstructure, reinforcing steel, slab joints, concrete placement on slabs, finishing concrete, overlays & repairs, & more.
Learning Objectives: Upon completion of this course, the participant will be able to:
1. Explain the principles for checking elevations on a point of a bridge structure during construction.
2. Identify the specifications and locate the tolerances allowed for various items of work performed.
3. Recognize the importance of proper concrete and steel placement in bridge construction.
4. Explain the importance of knowing and adhering to the plans, specifications, and proposals.
5. Explain why curing concrete is important.
6. Identify the elements of a bridge substructure and superstructure.

Course Code: CON120
Course Name: Fundamentals of Concrete 201
Length: 8 hours
NHI Course? No.
Course Description: Provides further information on the material qualities of fresh and hardened concrete, ideal placement, consolidation, finishing and curing techniques, specification requirements, concrete production, and delivery operations.
Learning Objectives: Upon completion of this course, the participant will be able to:
1. Discuss the volumetric properties of aggregates, cement, fly ash, and the concrete mixture.
2. Discuss the specification requirements for mix design, including minimum strength, maximum water-cement ratio, maximum cement content, pozzolan substitution rates, air entrainment, and slump.
3. Explain how to calculate an overdesign value and apply it to a mix design.
4. Perform a mix design manually and with the aid of the "Concrete Mix Design and Control Workbook" developed by TxDOT.
5. Explain the testing requirements of trial batches.
6. Explain the requirements of Item 421 with regard to the calibration of plants and trucks.
7. Explain the specification requirements of Item 421 for concrete delivered to a project, including temperature, time, slump, air, and strength.

Course Code: CON205
Course Name: Fundamentals of Concrete 101
Length: 8 hours
NHI Course? No.
Course Description: Provides an introduction to the material qualities of fresh and hardened concrete, ideal placement, consolidation, finishing and curing techniques, specification requirements, and concrete production and delivery operations.
Learning Objectives: Upon completion of this course, the participant will be able to:
1. Explain the basic principles of cement hydration.
2. Discuss the role of pozzolans in concrete.
3. Describe the effects of water content on concrete properties.

4. Identify concrete properties important for constructability.
5. Identify concrete properties important for durability.
6. Explain the role of chemical admixtures on concrete properties.
7. Explain the importance of consolidation, finishing, and curing.
8. Describe Item 421, Hydraulic Cement Concrete.
9. Discuss basic operations of concrete production (materials, plant operations, delivery, etc.).

Course Code: CON206
Course Name: Concrete Materials Course
Length: 8 hours
NHI Course? No.
Course Description: The course covers: concrete paving benefits; construction resources & tools review; pavement mix-design requirements; proper applications of various concrete pavements. Intended to be taken in conjunction with CON205.
Learning Objectives: Upon completion of this course, the participant will be able to:
1. Define concrete mix design fundamentals.
2. Provide an understanding of the impact of the concrete mix design on constructibility and pavement performance.
3. Identify CRCP and JCP pavement.
4. Identify control of the work and materials during construction.
5. Explain the slipform paver6. Identify the hot and cold weather considerations.

Course Code: CON411
Course Name: Inspection of Flexible Base and Embankments
Length: 16 hours
NHI Course? No.
Course Description: This course will introduce proper techniques for the construction and inspection of embankments, flexible bases, and stabilized layers.
Learning Objectives: Upon completion of this course, the participant will be able to:
1. List the general duties of the inspector.
2. Identify the material properties of the flexible base and embankment.
3. Describe how material properties affect construction and performance.
4. State the importance of proper preparation of the subgrade.
5. Identify proper material delivery, stockpiling, and handling techniques.
6. Describe proper placement techniques.
7. Describe proper compaction.
8. Explain field testing and acceptance.
9. Identify finishing and curing techniques.
10. Cite the related 2004 specifications on embankment, flexible base, and stabilized layers.
11. Discuss the importance and agenda items of pre-paving meetings.

Course Code: DES109
Course Name: Plans, Specifications and Estimates Package
Length: 16 hours
NHI Course? No.
Course Description: Describes processes used to assemble and review project plans, specifications and estimates. Participants should be familiar with the basic operations of TxDOT's Design Construction Information System (DCIS).
Learning Objectives: Upon completion of this course, the participant will be able to:

1. Explain the importance of an accurate PS&E package.
2. Describe the process of assembling a PS&E package.
3. Explain the importance of accurate entries into DCIS.
4. Identify factors that can affect unit bid prices.
5. Explain the purpose of General Notes.
6. Describe the differences between a district review of the PS&E package and a division review.

Course Code: DES119
Course Name: Preliminary Design Process
Length: 16 hours
NHI Course? No
Course Description: Outlines the preliminary design process of a transportation improvement project. Includes the various tasks and sequences required to obtain schematic approval.
Learning Objectives: Upon completion of this course, the participant will be able to:
1. Review the Project Development Process Manual.
2. Discuss major project development tasks and sequence.
3. Describe a Preliminary Design Conference.
4. Identify schematic requirements and types.
5. Review the Design Summary Report (DSR).
6. Identify potential project stakeholders.
7. Discuss transportation project funding.
8. Discuss toll feasibility.
9. Review the requirements of public involvement.
10. Review horizontal alignments in accordance with design criteria.
11. Identify activities in the geometric schematic development process.
12. Identify the purpose and benefits of Value Engineering.
13. Identify the benefits and process of schematic reviews.

Course Code: DES601
Course Name: Basic Hydrology and Hydraulics
Length: 24 hours
NHI Course? No
Course Description: Provides an introduction to basic hydraulic principles and techniques. Content adapted from the TxDOT Hydraulic Design Manual, FHWA HDS-02-00X, and other sources. Participants must bring a scientific calculator and Engineering Scale.
Learning Objectives: Upon completion of this course, the participant will be able to:
1. Derive watershed parameters.
2. Derive flow rates using hydrologic methods.
3. Discuss the concepts of the continuity equation, energy, weir, and orifice.
4. Perform a simple hydraulic analysis.

Course Code: ENV112
Course Name: Public Involvement for the National Environment Protection Act (NEPA)
Length: 16 hours
NHI Course? No.
Course Description: The class will prepare staff to develop an effective public involvement program and how to better conduct public involvement efforts for transportation projects.
Learning Objectives: Upon completion of this course, the participant will be able to:
1. Explain the benefits of active, outreaching public involvement.

2. Describe the laws, regulations, policies and procedures.
3. Plan, organize and conduct effective public involvement efforts.
4. Prepare accurate and appropriate documentation.

Course Code: ENV114
Course Name: Hazardous Materials Management
Length: 8 hours
NHI Course? No.
Course Description: The course will prepare staff to conduct more effective initial site assessments for hazardous materials issues relating to transportation projects and to prepare the appropriate documentation of the findings.
Learning Objectives: Upon completion of this course, the participant will be able to:
1. Describe the role of hazardous materials management in project development.
2. Explain the laws, regulations, policies, and procedures related to hazardous materials management.
3. Plan, organize and conduct initial site assessments for hazardous materials.
4. Prepare accurate documentation on hazardous materials management and initial site assessments.

Course Code: GEO101
Course Name: Basic Geotechnical Engineering for Roadways
Length: 24 hours
NHI Course? No
Course Description: Presents geotechnical engineering fundamentals relative to the design, construction, and maintenance of pavement systems and transportation structures. Addresses the relationship between soil conditions and roadway elements.
Learning Objectives: Upon completion of this course, the participant will be able to:
1. Describe the function and relationship of geotechnical engineering relative to TxDOT transportation projects.
2. Explain the site characterization process relative to both published geologic resources and field sampling and testing.
3. Identify and explain the weight and volume relationship that comprises the fundamentals of soil mechanics.
4. Compare and contrast properties of fine-grained and course-grained soils relative to laboratory test results for soil particle size distribution.
5. Explain the interrelationship between moisture content and soil consistency in terms of Atterberg limits.
6. Identify the primary soil classification systems used for engineering purposes and classify soils using the AASHTO and Unified Soil Classification Systems.
7. Explain soil compaction and describe how compaction relates to different phases of earthwork construction.
8. Explain the concepts of total stress, effective stress, and pore water pressure for both geostatic and induced loading conditions.
9. Define key terms and concepts associated with soil seepage as related to subsurface drainage solutions.
10. Explain the different physical processes of soil movements, including consolidation settlement (compressibility) and soil shrinkage/swelling.
11. Evaluate shear strength based on laboratory test data (direct and triaxial shear) and express in terms of cohesion and internal friction.

Course Code: QLT101
Course Name: Process Improvement Fundamentals
Length: 8 hours
NHI Course? No.
Course Description: Provides an introduction to Continuous Improvement concepts at TxDOT. After this course, you will be able to understand and apply quality, lean, and continuous improvement principles in the workplace.
Learning Objectives: Upon completion of this course, the participant will be able to:
1. Explain what Continuous Improvement is and how it relates to our work.
2. Define common concepts related to Continuous Improvement like Lean, Six Sigma, Quality Management, and "QA/QC."
3. Identify where Continuous Improvement is already found in the workplace and operations.
4. Explain the Cost of Quality concept and how it relates to Continuous Improvement.
5. Recognize common Continuous Improvement tools, methods, and visualizations.
6. Locate resources to support Continuous Improvement projects.
7. Identify a process or a product that would benefit from Continuous improvement.
8. Apply a tool to a current process or product that would benefit from Continuous Improvement.

Course Code: TRF203
Course Name: Risk Management and Tort Liability
Length: 24 hours
NHI Course? No.
Course Description: Provides an overview of the basic principles of project risk management that are applied to TxDOT projects to avoid traffic incidents and liability. Legal principles, the Texas Tort Claims Act, and the lifecycle of a lawsuit are also covered.
Learning Objectives: Upon completion of this course, the participant will be able to:
1. Describe the risk management process.
2. List methods of reducing the risk of highway tort lawsuits.
3. Define negligence and liability.
4. Describe key elements of the Texas Tort Claims Act that apply to TxDOT.
5. Develop post-crash activities and procedures for filing lawsuits.
6. Review examples of tort-related lawsuits.

Course Code: TRF450
Course Name: TxDOT Roadway Illuminations and Electrical Installations
Length: 24 hours
NHI Course? No.
Course Description: Introduces the complete electrical system supplying a roadway illumination project that is to be installed by a contractor. Includes TxDOT specifications, electrical details, construction plans, and the National Electrical Code® (NEC) handbook.
Learning Objectives: Upon completion of this course, the participant will be able to:
1. Explain the purpose and organization of applicable articles and how those articles relate to TxDOT projects.
2. Locate applicable articles in the NEC® handbook.
3. Locate information contained in the Standard Specifications for Construction of Highways, Streets & Bridges (600 series), construction project general notes, Departmental Material Specifications (DMS), pre-approved materials, TxDOT Roadway Illumination Details (RID), TxDOT Roadway Illumination Poles (RIP) and electrical details (ED) standard sheets.
4. Explain how the requirements of 600-series of the Standard Specifications, construction project's general notes, RID, RIP, and ED standard sheets relate to the NEC® handbook.

The following courses are approved TxDOT courses but are hosted at The University of Texas at Arlington, Division for Enterprise Development (DED).

Contact the TxLTAP Program Manager at 817.272.9678 or via email at Txltap@uta.org to find out if any fees associated with these courses may be waived for city or county employees.

The link to these courses is: Division for Enterprise Development Online Training (dedtraining.com)

TRF804 - The Grounding Electrode System	Experienced personnel who install or inspect electrical systems on Texas roadways.	An in-depth study of the installation and material requirements for grounding electrode systems on TxDOT's illumination and traffic signal systems.
TRF805 - Troubleshooting Common Problems in Illumination Systems	Experienced personnel who install, repair or inspect electrical systems on Texas roadways.	An in-depth study in identifying and repairing common problems found on TxDOT's illumination systems.
TRF806 - Splicing Options Acceptable to TxDOT	Experienced personnel who install or inspect electrical systems on Texas roadways.	An in-depth study of the installation and material requirements for splicing electrical conductors used for TxDOT's illumination and traffic signal systems.
TRF807 - Installation Requirements for Temporary Wiring	Experienced personnel who install, repair or inspect electrical systems on Texas roadways.	An in-depth study of the requirements for temporary wiring of illumination and traffic signal systems.
TRF808 - TxDOT's Grounding & Bonding Requirements	Experienced personnel who install or inspect electrical systems on Texas roadways.	An in-depth study of the installation and material requirements for grounding and bonding on TxDOT's illumination and traffic signal systems.
TRF809 - Ground Box Installations	Experienced personnel who install, repair or inspect electrical systems on Texas roadways.	An in-depth study of the types of ground boxes and their installation requirments for TxDOT's illumination and traffic systems.
TRF810 - Contractor's Equipment Testing Requirements	Experienced personnel who install, repair or inspect electrical systems on Texas roadways.	An in-depth study of electrical testing requirements and the equipment needed when testing is done on TxDOT illumination and traffic signal systems.
TRF811 - Conduit Installation Requirements	Experienced personnel who install or inspect electrical systems on Texas roadways.	An in-depth study of the installation and material requirements for installing conduit on TxDOT's illumination and traffic signal systems.
TRF812 - Common Mistakes On TxDOT Electrical Installations	Experienced personnel who install, repair or inspect electrical systems on Texas roadways.	An in-depth study of common mistakes made during installation of illumination and traffic signal systems.
TRF813 - Using Material Producers List	Experienced personnel who install, repair or inspect electrical systems on Texas roadways.	An in-depth study of TxDOT's material producers list, departmental material specifications, and special provisions pertaining to electrical installations of illumination and traffic signal systems.
TRF814 - Conductor Installation Requirements	Experienced personnel who install or inspect electrical systems on Texas roadways.	An in-depth study of the installation and material requirements for electrical conductors installed on TxDOT's illumination and traffic signal systems.

TRF815 - Installation Requirements for Traffic Signal Controller Cabinets	Experienced personnel who install or inspect electrical systems on Texas roadways.	An in-depth study of the installation and material requirements for the installation of traffic signal controller cabinets on TxDOT's traffic signal systems.
TRF816 - Underpass Illumination	Experienced personnel who install or inspect electrical systems on Texas roadways.	An in-depth study of the installation and material requirements for installing underpass luminaires on TxDOT's illumination systems.
TRF817 - Installation Requirements for Breakaway Pole Bases	Experienced personnel who install or inspect electrical systems on Texas roadways.	An in-depth study of the installation and material requirements for installing luminaire breakaway pole bases on TxDOT's illumination systems.
TRF818 - Types of Electrical Service Supports	Experienced personnel who install or inspect electrical systems on Texas roadways.	An in-depth study of the installation and material requirements for electrical service support structures used on TxDOT's illumination and traffic signal systems.
TRF819 - Concrete Barrier Illumination Installation Requirements	Experienced personnel who install or inspect electrical systems on Texas roadways.	An in-depth study of the installation and material requirements for installing luminaire poles on concrete safety barriers used on TxDOT's illumination systems.
TRF820 - High Mast Pole Installation Requirements	Experienced personnel who install or inspect electrical systems on Texas roadways.	An in-depth study of the installation and material requirements for installing high mast poles on TxDOT's illumination systems.
TRF821 - High Mast Pole Lighting Ring with Obstruction Lighting	Experienced personnel who install or inspect electrical systems on Texas roadways.	An in-depth study of the installation and material requirements for a high mast pole's ring with obstruction lighting.
TRF822 – Pedestrian Poles and Roadside Flashing Beacon Installation Requirements	Experienced personnel who install or inspect electrical systems on Texas roadways.	An in-depth study of the installation and material requirements for pedestrian poles and roadside flashing beacons.
TRF823 – Illumination and Signal Pole Foundations	Experienced personnel who install or inspect electrical systems on Texas roadways.	An in-depth study of the installation and material requirements for installing illumination and signal pole foundations.
TRF825 – TxDOT Electrical Services, Types A & C	Experienced personnel who install or inspect electrical systems on Texas roadways.	An in-depth study of the installation and material requirements for TxDOT Type A and Type C electrical service.
TRF826 – TxDOT Electrical Services, Types D & T	Experienced personnel who install or inspect electrical systems on Texas roadways.	An in-depth study of the installation and material requirements for TxDOT Type D and Type T electrical service.
TRF827 – Maintaining High Mast Pole's Winch and Verifying Winch Brake Settings	Experienced personnel who install or inspect electrical systems on Texas roadways.	An in-depth study for maintaining a high mast pole's winch and verifying that the winch's brake setting is correct.

Attachment D: Workforce Strategy, Planning and Alignment

Overview and Making the Case for Developing a Workforce Strategy, Developing a Workforce Plan and How to Align with Other Business Units

As with any business process or function, identifying and implementing a strategy is a necessary first step for any organization to succeed. Organizations with limited resources often skip formalizing a strategy or plan and conduct "business as usual" as they have over the years. The changing demographics, demands for accountability by the public, and continued constraints of budget, all coupled with the difficulty of attracting and retaining quality employees, make a case for an organization to consider developing and implementing a workforce strategy that is aligned with the organization's mission, values and goals at some level.

What is *Strategic* Workforce Planning?

Strategic Workforce Planning is a proactive approach to managing staffing requirements and aligning organizational leadership vision with Human Resources (HR) processes to the organization's goals.

A keyword in the preceding sentence is "***proactive.***" Many organizations work in a continual cycle of "management by crisis," which is constantly being in a reactive mode to respond to shifting needs (in terms of personnel resources); which department puts forth the best "business case" for why they need additional personnel, or pressure from the public to address specific local issues. Moving away from a reactive method of management of the overall workforce to a ***proactive*** approach will result in benefits for your organization, such as:

Image Source: Masadvise.org

- Trends that allow you to identify risks before negatively impacting the organization's goals.
- Identifying and correcting staffing problems that may limit productivity.
- Putting you in an advantageous position to attract and hire the best candidates. Remember, you compete with the private and public sectors for the same talent pool.

Whether you are a rural, urban, or metro city or county, it means your top leadership should be looking at the overall staffing needs for your entity. Do not look at the staffing needs individually, such as the police or sheriff's department, public works/road and bridge, parks and recreation, etc. As a leader of the organization, you should be focused on the overall needs of your city or county. Your plan should include a cross-over of resources, as appropriate, for departments to support one another.

While workforce planning ***should be*** conducted at each department level within the organization, as a leader, you need to examine the individual plans to have a conceptual idea to develop a plan that can be implemented. It is recommended you task your department heads on an annual or bi-annual basis to look at their staffing levels, provide you with solid data on why they need to retain their existing workforce, and then make a separate business case for forecasted needs should they seek added personnel.

Strategic workforce planning tends to take place at the senior leadership level and focuses on big-picture goals such as:

- Structural organization – allows you to look at the organization rather than silos that do not give you the information you need as a leader to make strategic decisions.
- Employee redeployment – when one department gets too heavy in staffing, and another is running short, redeploying employees with crossover skills allows for a balanced operation.
- Succession planning – while succession planning is addressed in Stage 5 of the Model, it is also tied into the organization, not just specific departments.
- Staffing budgets allow you to project for immediate needs and potential increases in staff and merit allocations for retaining top talent.
- Maintaining capacity – having plans to make sure that upcoming retirements from the workforce and statistical departures allow you to plan and keep your workforce at the right level.
- Reducing risk – allows leaders to ensure that all departments are staffed at the right level, without one being over-staffed and another staffed.

What is Workforce Planning?

Workforce planning, or strategic workforce planning, is a process that helps ensure the right person with the right skills is in the right place at the right time. An organization must analyze, forecast, and plan its future staffing needs while determining whether existing employees can be realigned to meet your projected needs. You may need to consider if additional outside talent (new positions and posting for them) will fill your needs. You may also want to consider temporary or project employees if the need is short-term. An example would be that you will build a new jail and currently do not have a qualified project manager on staff. Instead of hiring a permanent project manager (unless other future needs are identified), hire a temporary project manager to handle the additional workload.
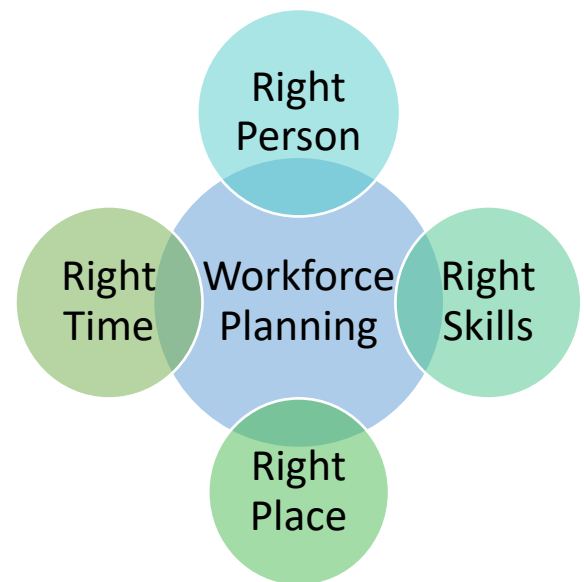
The University of Texas at Arlington DED www.TxLTAP.org

If you are a public entity with adequate budget capability, you may wish to consider a talent management software solution. Talent management software platforms can help make those determinations and help you fulfill your organization's business objectives. If you do not have the budget to procure a talent management software platform, at a minimum, you should have a written plan that is reviewed and updated annually.

The importance of workforce planning cannot be emphasized enough. It is a continual challenge for any organization, but workforce planning will help you minimize and, where possible, eliminate current and future staffing issues. For example, an aging workforce can create shortages for specific critical jobs due to retirements, potentially resulting in a lack of appropriate skills in the remaining workforce.

Comprehensive workforce planning looks at not one but several business procedures and processes. Those procedures and processes should include:
- Setting recruitment strategies.

- Planning for future staffing requirements.
- Developing and implementing organizational-wide employee management procedures.
- Training your employees in alignment with their current job duties and for projected future needed skills.

Let's develop a workplace plan following these suggested processes and procedures.

How Do We Develop a Workforce Plan?

To effectively implement workforce planning, your HR leaders must be interested, engaged, and strategic in their thinking and collaborate with key decision-makers. A plan should be tied to your organizational objectives and include all factors impacting your hiring and employee management.

Tips on How to Develop a Solid Plan

Before developing a workforce plan, we need to look at some tips on accomplishing a solid plan with the resources you have on staff or are readily available for consultation.

- You need to have solid current and long-term business objectives. If you do not have them, they need to be developed first. The more concrete and detailed you can get with your business objectives, the better. This will allow you to identify and measure the most relevant metrics after you launch this effort.
- Do a deep dive into your HR analytics. People analytics can offer insights into your current workforce by looking at your employees' demographics, seniority profiles, performance, and quantity of staff members on hand.
- Identify skills gaps. Analyzing skills gaps allows you to anticipate long-term needs and the potential challenges that come with them. This can give you a head start in finding possible solutions, such as training existing employees to cover the gaps or hiring the right skilled employees.
- Ask for outside advice. Leaders can lean into their network and seek the advice of others in similar positions. Use consultants who specialize in strategic workforce planning. Using the Texas Association of Counties, the Texas Municipal League, and the University of Texas at Arlington, TxLTAP consultants will keep your costs at zero or low.

Steps in Plan Development

There are specific steps you should consider taking when developing your workforce plan. You should follow these steps in the order presented as the results in one step feed the next step.

1. ***You need to decide what your strategic direction and goals are for your workforce plan.***
   Workforce planning is a top-down process requiring clear organizational direction and defined strategic goals to inform and guide future decisions. Depending on the internal obstacles in your city or county the operation's beginning of the process may require direction from a Commissioners Court or City Council should you not have a high-level champion who can
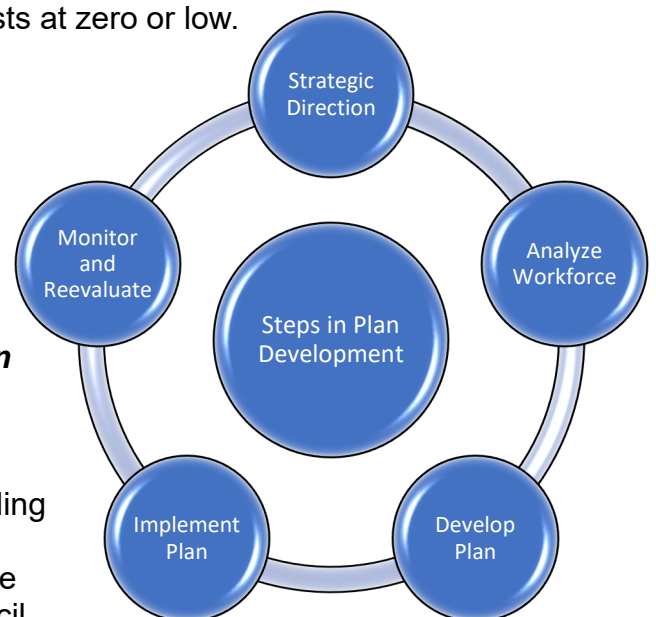

Image Source: www.TxLTAP.org

159

drive this process.

It would be best if you considered the following when looking at your strategic direction and goals:
- What direction do you see your organization going in?
  - o Example: Do you have stagnant, low, moderate, or high growth in terms of population? What new businesses are looking to come into your city or county? What new or improved infrastructure needs are you facing? Is your organization actively supporting growth, or are you ignoring it and letting it happen? How is your organization reacting to outside forces and pressures? All those factors *will impact* your workforce and, hence, the planning needs for that workforce.
- What are you hoping to achieve through workforce planning?
  - o Example: Hopefully, your primary goal is having a structured workforce planning and hiring process that is in place for your entire city or county rather than each department working in a silo.
- What are the primary goals/milestones you are targeting?
  - o Example: Perhaps your city or county has never had a development planner as a part of your workforce. With a rising demand for new housing in your city or county, you now need to bring on a person with the required qualifications and skills. The underlying goal is not having to pay consultant fees for planning. You see the long-term benefits of having an experienced planner to assist with structured growth.
- Why does your organization need new workforce planning structures?
  - o Example: Perhaps you are a rural county that has not experienced growth in population in the past few years. Your county-wide workforce has remained relatively stable in numbers as you have been able to handle business. Suddenly, you begin to have more and more requests for building permits as people are looking to relocate "out into the country," where housing tends to be cheaper and with a higher quality of life. It would be best if you planned in ways you never have to meet the new demands on the county's services. You will need a defined "planning structure" rather than just creating new job positions on "what you think" may solve coming demands for service.

These are vital questions before analyzing your workforce and implementing new employee management strategies.

It is also important to remember that every process in your business affects others. Therefore, workforce planning must be an organization-wide process and include effective communication between key stakeholders, HR, and all other departments.

2. *You need to analyze your existing workforce – all of it.*
The plan for your workforce, what it will look like moving forward, and how to strategize for specific goals are unique to your city or county and may depend on other factors. Typical components that are considered in workforce planning include:

- Talent availability. Not the number of employees you have, but how many employees you have that are truly competent in their jobs and meet or exceed all job duties and expectations.
- Services demand growth. Look at your anticipated growth areas. Most cities and counties have a formula for the number of law enforcement officers per number of residents. You should also. This same theory should also apply to Public Works/Road & Bridge based on lane miles, intersections, signage, etc. Models can also be built out for almost any

department. Based on data, not a "guesstimate," you should forecast where to add additional personnel.

- Age and retirement eligibility of the existing workforce. When employees become eligible for retirement, no matter what they may have told you what their plans are for staying on, they can exercise their options and retire without notice. This may leave you in a gap situation. Using HR analytics (data), plan for the worst-case scenario and upskill your workforce to step in and conduct business as usual.
- Current knowledge and identified skill gaps in the existing workforce. This step is often referred to as a skill gap analysis. You should not "guess" where each employee is at in their skills.

Following the strategies above will help to answer the following questions:

- Do you have the right-sized workforce?
  - o Example: From previous business practices that worked well for you at one point in time, you may want to not "rattle the box" and propose changing up employee allocations within your departments. Don't take the easy way out and default to the "we have always done it this way" mindset. If you do not respond to changes in your workforce to meet the changes in demand for services, you will always be behind.
- What skills, knowledge, and experience do your current employees have?
  - o Example: You might be surprised, pleasantly in some cases, and disappointed in others when you conduct a candid skill assessment. Rely on the results to drive your planning. Unless you have experienced, qualified personnel to conduct accurate assessments, it is recommended that you use an outside source that is unbiased to assist or conduct your skill gap analysis. In Stage 5 – Succession Planning, in step 3 of the 6-step succession planning model, how to assess current staff skill levels is addressed. If you need help with this step, the TxLTAP Program can offer assistance at no cost to your city or county.
- Do your employees need additional training?
  - o Example: Just when you think all your employees are trained in their essential skills – _you are mistaken._ With the continual changes in technology-based equipment, diagnostics, software-based platforms, etc., your workforce always needs training. Don't forget the essential mandatory training your employees and supervisors should also have, as outlined in Stage 3 – Training and Development.
- What new resources can improve workforce performance?
  - o Example: If you do not currently use performance plans and performance evaluations for _all employees_, you are missing a strategic tool that will help you continually improve your workforce performance.
- Is your workforce correctly structured? (This includes organizational design, departments, communication channels, etc.
  - o Example: This strategy relies on the data and direction you take in asking yourself if you have the right-sized workforce. You may keep the same number of employees in a new budget cycle, but shifting from one department to another may relieve a short-staffed department and drive another department to be more efficient in its operations if they are downsized to meet the current work demands.
- What is your current employee turnover rate?
  - o Example: You should receive this information monthly if you are a large city or county, and at a minimum, every quarter, regardless of the size of your city or county. Only

having this data in front of you continuously allows you to be agile and make changes as needed.

For workforce planning to succeed, it must be based on high-quality information within your organization and external sources. Workforce planning defined by inaccurate forecasts and undeliverable future goals cannot be successful.

3. Develop your plan.
This is where you must take your overall goals, input the assessment of your existing workforce, and produce a viable plan for the future.

Cities and counties must plan their workforce to reflect the value and services they produce for their citizens. An example of workforce planning in action could be:

Two counties (County A and County B) with adjacent borders are the same relative size in square miles, population, and lane miles they maintain in a unified system overseen by a Road Administrator. Both have similar revenue streams from their tax base, and neither has any debt to service except recurring expenses. Both counties have nearly the same number of full-time employees with only a difference of 2 FTEs. Both do use part-time help as needed.

County A has a road and bridge workforce of 25 employees, and County B has 19 employees in its road and bridge. Both have adequate budgets and equipment to perform the jobs associated with R&B functions.

County A (with 25 R&B employees) has conducted informal workforce planning as a part of the Commissioners Court strategy, opting for "right-sizing" their various departments.

County B (with 19 R&B employees) has let the influence of the citizens drive how many employees should be in what departments. Many have complained about why it takes two employees to patch potholes when one employee could do it? The citizens do not know about, nor care about, work zone traffic control or the simple principle that a team of two is more productive than a team of one. R&B activities are continuously visible to the public as they are out doing their jobs, versus office-based jobs where employees are not seen.

The Commissioners Court in County B has given in to the citizens' demands and keeps a smaller number of R&B employees allocated.

County B is now starting to experience the consequences of a smaller R&B workforce:
- A backlog of work orders, some delayed for months.
- Quality of work is suffering since employees are working to close out work orders and are cutting corners instead of doing the job right.
- Accelerated workforce turnover due to higher demands and stress on the job.
- Growth is not occurring in County B compared to County A due to the condition of the roadway infrastructure.

With workforce planning structures in place, you can develop plans to retrain and redeploy staff from Model A to Model B during 2023. This kind of planning minimizes disruption and reduces employee turnover.

Of course, this is just a plan based on forecasts and *does not* mean you should immediately hire six new employees for R&B to match County A. Instead, the county should develop a plan that considers redeployment, hiring, and crossover training plans in place to execute and take a gradual approach that matches the shift in focus of their business into R&B.

4. Implementing workforce planning.

When you are ready to implement your workforce plan, there are steps you will need to complete for it to succeed. There will be new responsibilities and understandings that all departments will need to embrace. Among them are:

- HR personnel (or designated office) must clearly understand their new roles and responsibilities to implement and monitor the plan.
- Strategies and processes for recording all relevant data and information must be vested with an office or department for your entire organization.
- Effective communication channels must be established between all departments to support the plan.
- Defined measurement and evaluation criteria to assess the plan's success must be established and measured at some point.

With many new processes to implement, workforce planning does not transform your organization overnight. Instead, it is a gradual process that optimizes each procedure for the circumstances to get your city or county closer to your long-term goals.

5. Monitor the results.

It is crucial to remember workforce planning is a cyclic process whereby progress is monitored and measured against specific milestones and long-term goals.

After implementation, your workforce planning processes may need adjusting due to unexpected factors within your organization or to meet new challenges you may face.

Because your workforce is a crucial asset for any business, workforce planning is one of the most critical factors in organizational growth.

How do We Align Our Workforce Plan with Other Business Units?

Image Source: Changebydesign.us

Top leadership and management must be engaged and support this new strategy 100%, or the process and results will not be what you want or expect. One department holding out or resisting the workforce plan can derail the initiative.

Meetings with department heads need to be held at the very beginning of the program for buy-in. Leaving a department out of the process and then "forcing" them to the table later can result in active resistance.

Remember, your objective is to be inclusiveness in the development and implementation of the plan.

When aligning your workforce plan across the organization, you can consider the following.

1. Ensure alignment and goal clarity.
The most critical step in strategic workforce planning is aligning business strategy, organization structure, people, and results. Ensure clarity (explain it until you are blue in the face!) with all key stakeholders about the strategic objectives, then ensure you have an all-inclusive organization design and talent plan to drive getting the right people with the right skills in the right place at the right time to deliver results.

2. Look at your long-term goals.
While strategic workforce planning is critical to the overall talent strategy, do not forget the tactical side (implementation). It starts with understanding where your organization is headed for future service demands.

3. Execute a current state assessment.
Executing a current state assessment in workforce planning is critical, as many workforces tend to jump into planning without genuinely understanding what resources they have in the first place. An organization needs to understand who they have in place right now, where they're going, and how they're developing to create a more accurate plan of action for the future.

4. Create a staffing model.
Creating a staffing model to predict and drive workforce planning is essential. For example, how many law enforcement officers should you have per population? How many R&B employees does it take to maintain one lane mile of roads? How many calls can a customer service specialist take per day? Along with revenue and operating plans, answers to questions like these help shape your strategic workforce plan for both headcount and timing. Without them, it's just a guess.

5. Determine your current skill and talent gaps.
To create the right workforce plan, identify your organization's current talent gaps and needs and understand how those relate to your strategic roadmap. Understanding where individual team members rate against specific core competencies necessary for driving the business allows you to understand which competencies to add going forward and in which department. Focus on the trio that makes up a competency: knowledge, skills, and abilities. If you determine gaps exist, you can create the right plan to focus on upskilling your current team or hiring new team members with that missing expertise.

6. Identify your long-term needs.
Identify the forecast long-term needs of your organization beyond the coming year. When you plan for tomorrow, you are behind the change curve because development and hiring for the future must be one step ahead of tomorrow.

7. Challenge the status quo.
The expectation must be that you need to think differently about workforce planning. Then, challenge the status quo and evaluate where, why, how, and how many employees are required.

8. Ensure all data is gathered in one place (office/department).
As mentioned in the section on plan implementation, it is to make sure all the information is collated in one place to perform that planning work. Marrying human capital, workforce management, and financial data is not always easy to accomplish based on different systems in place.

9. Start at the finish line.

Start at the finish line. You can't know when you've reached your goal if you don't know where that is. If you start with the finish line, you can work backward to determine what you need and when.

10. Think beyond hiring new talent.

Think beyond hiring new talent. This is one crucial lever but not the only option — certainly not if you want to retain and engage your current talent. Invest in developing their skills, knowledge, and experience so that they can rotate and enjoy a variable career journey within your organization rather than going external.

11. Constantly follow through and pivot.

One essential step in strategic workforce planning is the follow-through with evaluating, monitoring, and making ongoing adjustments to the workforce plan. Ensure regular performance monitoring of the implemented solutions to identify if gaps are addressed. A workforce plan should be continuous and fluid to pivot as the strategic direction, workforce supply, and workloads change over time.

12. Consider your budget and forecasting for the future.

The critical step is considering your budget and forecasting for the next two years. Before hiring and returning to business as usual, you need to consider your needs for six, 12, and 18 months out and consider employee retention, internal promotions, and internal lateral moves. Retention and investing in employee growth are crucial to workforce planning.

A Workforce Planning Example for Public Works or Road and Bridge Organizations
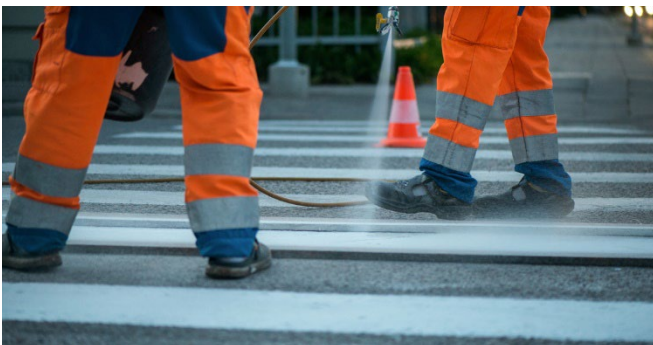
Image Source: Dallascitynews.net

The following workforce planning example is based on a central Texas county Road and Bridge (R&B) organization that faced the same constraints that many cities and counties face daily: limited resources (skilled and knowledgeable personnel), specialized equipment needs, and prioritization of the work.

This county had routinely repaired and built bridges on the county system for years. This function was in addition to routine maintenance of existing roads, handling mowing and brush control, hauling materials, maintaining and installing new signage and markers, etc. All being done with less than 75 R&B supervisors and -employees covering over 1000 miles of paved, gravel, and dirt roads.

The R&B department had five employees (one crew leader and four technicians) dedicated to the bridge construction/repair/maintenance section. With the retirement of two highly experienced R&B workers, the R&B department was faced with the decision to:
 a) begin outsourcing bridgework, or,
 b) train existing employees to take on new responsibilities, or,
 c) hire new employees with bridge and concrete experience.

Using information from the Commissioners' Court that shortly (within 12 – 18 months), up to three new subdivisions would be added to the county road inventory for R&B maintenance. The county

was also experiencing the issue of having only two employees left to handle all signage and markings trained on the Texas Manual on Uniform Traffic Control Devices requirements.

The R&B department knew they had a substantial backlog of needed sign replacements and was struggling to keep even with maintaining regulatory signage.

This information, coupled with a denied request to increase the number of personnel in R&B, made the decision easy; they decided to outsource future bridge construction and repairs. A realignment of R&B personnel took this shape:

- The two positions in the bridge construction/repair/maintenance section that were open from retirements would be moved to the signage/markings section to increase the capacity of replacing and maintaining signage to TMUTCD standards.
- The bridge construction/repair/maintenance crew leader would move over and supervise the signage/markings section.
- The two remaining employees in the bridge construction/repair/maintenance section would stay there but take on new responsibilities for contract administration and oversight of work completed on the county bridges. They would also lead the work of other technicians from time to time when routine maintenance work on the bridge was required.

The county Engineer and R&B Administrator knew their employees moving into new roles would require training to be successful in their new jobs. The employees were trained one month before taking on their new jobs so they could be immediately productive.

This simple example only considers information obtained in making decisions for a realignment of personnel and no loss or increase of positions. The more information you have to work with, and reaching out to other departments in your city or county will increase your probability of success with planning and alignment.