Schedule F: Workforce Plan

Introduction

The Texas Department of Transportation (TxDOT) continues to expand the scope of its responsibilities. TxDOT's workforce includes experts in engineering, maintenance, bridge construction, rail, maritime, real estate, project management, environmental affairs, research and technology, aviation, and transportation planning and programming. TxDOT is focused on maintenance and expansion of multi-modal transportation systems. TxDOT's focus is on more than a system of highways; its focus includes cargo ships, airplanes, buses, trains, bicycles, and more!

The workforce of TxDOT is vital to maintaining and expanding the prosperity of Texas. On a daily basis, TxDOT employees advocate for infrastructure and investment to fulfill TxDOT's mission. Employees at TxDOT have a sense of pride because they know their work improves the quality of life for citizens and brings economic opportunity to the State.

TxDOT generated more than 11,573 full-time equivalent employees (FTEs) during fiscal year 2017. TxDOT has come a long way since its creation in 1917 when it began with nine (9) employees. Also, the business model has changed, which has allowed us to become more effective and efficient in the achievement of our mission. Currently, TxDOT operations use a design-build model allowing us to focus on the purpose and design of a project. This has allowed stakeholders to assist TxDOT in the building of Texas' economy.

1917 Texas Department of Highway Created 9 Employees	1967 Department 17,000 employees	1975 Becomes State Department of Transportation	1991 Texas Dept. of Transportation (TxDOT) 16,366 employees	2017 TxDOT's 100th Year 11,491 employees

Today, TxDOT's employees actively participate with the citizens and communities by listening and collaborating to develop the best possible solutions for their regions and the State. Creativity and innovative thinking are becoming essential competencies as we look to the future.

TxDOT and its Human Resources (HR) Division are developing and implementing the following programs and processes:

- HR Generalist program to promote cross training on core HR functions
- TxDOT-wide Career Development Program
- Veterans Preference initiative to promote the hiring of veterans, disabled veterans, and surviving spouses and orphans of veterans
- Work-life balance /Wellness program
- Performance management process to more closely link employees' performance to their pay and to TxDOT's mission
- TxDOT's compensation philosophy and process
- TxDOT's Human Resources Information System, PeopleSoft, revised and simplified human resources procedures
- Hiring and recruitment process to gain efficiencies

- New employee orientation and other on-boarding initiatives
- TxDOT's work trip reduction program to help address the State's congestion problem by offering flexible work options such as teleworking, non-standard, and flexible work schedules
- Employee relations to be more proactive
- Collaborative resolution program for employees and managers
- Human Resources analytics

Workforce Planning – What is it?

Workforce planning is an organized process for:

- Identifying the number of employees and the types of employee skill sets required to meet TxDOT's goals and strategic objectives
- Developing a plan of action to ensure that the appropriate workforce will be available to provide quality services to the citizens of Texas

Today, as workforce planning matures; it now becomes more of a strategic process and requires linkage to TxDOT's mission, goals, and strategies. The foundation of strategic workforce planning is built upon the use of quantitative activities, such as headcount planning, turnover rates, full-time equivalent employees, and other workforce analytics. These analytics and the resulting metrics can create a framework that can inform and transform organizational strategy. The advantages and outcomes of having a well-developed workforce planning process include:

- Ability to define future workforce gaps to design and implement solutions for those gaps
- Documented knowledge of the competencies the organization needs to develop plans allowing TxDOT the ability to hire or develop people as needed
- Better preparedness for business contingencies
- Improved ability to adapt and align resources for a flourishing economy, innovation, and technological changes
- Measurable action plans that can drive a human capital operating plan
- Understanding of labor trends impacting the workforce such as retirement, skills gaps, and high-demand occupations
- Staff planning focused on workload drivers based on business needs

Full-time Equivalent (FTE) Employees

Figure 1 illustrates TxDOT's FTEs for fiscal years 2013 through 2017. In fiscal year 2017, TxDOT's FTEs were at 11,573, approximately 149 less than fiscal year 2013 and approximately 424 less than fiscal year 2016. The hiring freeze imposed on state agencies beginning January 2017 through August 2017, contributed to the reduction in the FTE count in fiscal year 2017.

Figure 1

Texas Department of Transportation
Full-time Equivalent Employees
Fiscal Years 2013 through 2017
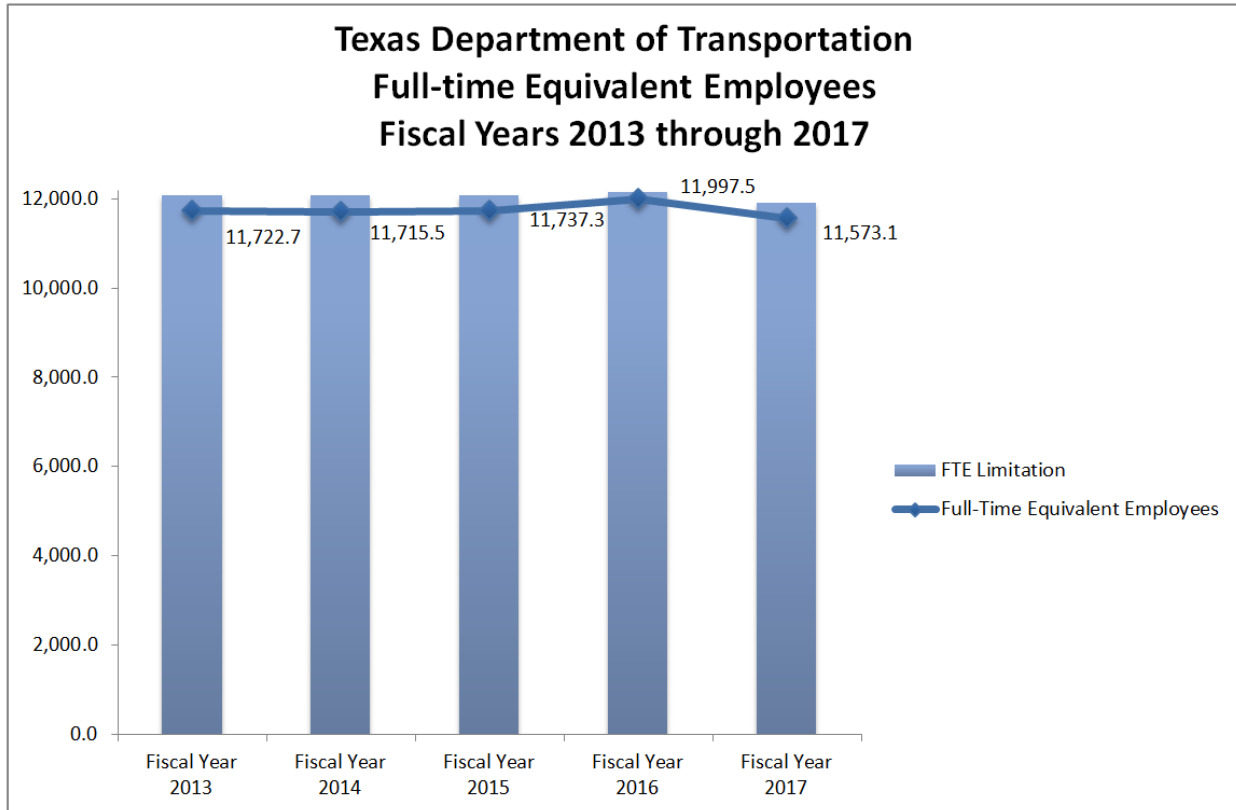
Source: State Auditor's Office's State Classification Team's Full-Time Equivalent (FTE) State Employee System

Business Strategies

Table 1 illustrates that as of March 2018, the majority of position allocations and full-time equivalent employee counts (hours paid) were assigned to Planning, Design and Management of Transportation Projects, and Routine Maintenance.

Table 1

TxDOT STRATEGY	POSITION ALLOCATIONS	FTE COUNT (Hours Paid)
13001 RAIL PLAN/DESIGN/MANAGE	22	24.82
13006 RAIL SAFETY	14	26.76
13019 PLAN/DESIGN/MANAGE	4,575	4,122.13
13023 ROUTINE MAINTENANCE	6,030	5,703.52
13024 AVIATION SERVICES	61	56.36
13025 PUBLIC TRANSPORTATION	47	45.21
13026 GULF WATERWAY	2	2.00
13027 FERRY SYSTEM	257	230.95
13030 RESEARCH	14	13.52
13031 TRAFFIC SAFETY	87	82.16
13032 TRAVEL INFORMATION	105	91.11
13123 ADVERTISING & JUNKYARK ENFORCE	16	16.65
13800 CENTRAL ADMINISTRATION	683	622.87
13801 INFORMATION RESOURCES	101	92.85
13802 OTHER SUPPORT SERVICES	391	364.12
TOTAL	**12,405.00**	**11,495.03**
Source: Texas Department of Transportation's Financial System, PeopleSoft		

Turnover Rate

Turnover Rate
Figure 2 illustrates TxDOT's turnover rate compared to the statewide turnover rate; the rates depicted in Figure 2 exclude interagency transfers. In fiscal year 2017, the statewide turnover rate was 18.6 percent and TxDOT's turnover rate was 11.5 percent. The fluctuation in the oil and gas industry may have contributed to the slight increase in TxDOT's turnover from fiscal year 2016 to fiscal year 2017.

Figure 2
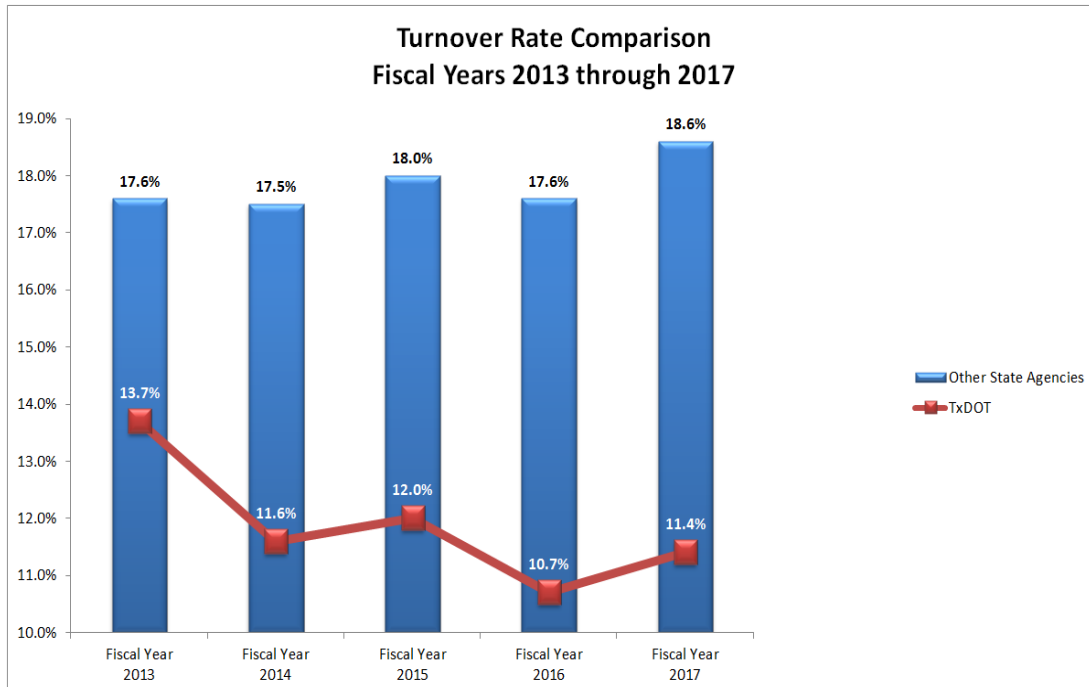
Source: State Auditor's Office's State Classification Team's Electronic Classification Analysis System (E-Class) online system - classified regular full-time and part-time employees

Texas Department of Transportation 2019-2023 Strategic Plan

Environmental Scan
Environmental scanning takes account of circumstances and situations occurring in the environment – externally and internally. This scanning allows us to better understand trends and drivers of change and variations. These identified facts have the potential to impact the future of the business and the workforce. The process involves asking these questions:

- What can we see today?
- What might happen in the future?
- How will this impact future decision making?
- Will it impact what we are doing today and how we take action?

Today, TxDOT faces many environmental factors impacting the way we do business and how that impacts the workforce. External factors include, but are not limited to an aging infrastructure, information technology and technological innovations, increased funding, and competing for talent with other industries. Internal factors such as an addressing an aging workforce and retirements, continuing knowledge transfer efforts, creating resources to become proactive versus reactive and cultivating innovation and embracing new technologies shape how TxDOT conducts business.

TxDOT Environment
TxDOT has a wide-variety of initiatives, programs, and projects that contribute to its mission and goals. For example, the Unified Transportation Program (UTP) is a ten-year statewide plan that guides the development of transportation projects, and has increased from $30 billion to $70 billion. The UTP is developed annually, in accordance with the Texas Administrative Code (TAC §16.105), and is approved by the TxDOT Commission. The UTP authorizes projects for construction, development, and planning activities; and includes projects involving highways, aviation, public transportation and state and coastal waterways. It will be critical for TxDOT to secure the necessary talent to work on these and other initiatives to ensure the maintenance and expansion of multi-modal transportation systems.

Labor Market Influences and Resource Availability
Legislation
In November 2014, Texas voters overwhelmingly approved the ballot measure known as Proposition 1 (Prop 1), authorizing a constitutional amendment for transportation funding. Under the amendment, a portion of oil and gas tax revenues that typically go into the Economic Stabilization Fund will be deposited to the State Highway Fund.
The Texas Comptroller of Public Accounts, Biennial Revenue Estimate 2018-2019, published on January 9, 2017, indicated that the new revenues of Proposition 1 funds are estimated at approximately $563 million in fiscal year 2018 and $739 million in fiscal year 2019. The total Proposition 1 appropriations equal approximately $2.5 billion for fiscal years 2018 -2019.

Senate Bill 1 (85th Legislature) established TxDOT's budget for fiscal years 2018-2019 at $26.6 billion, increasing by approximately $3.5 billion, with the greatest contribution from Proposition 7 funds at approximately $2.9 billion. Texas voters overwhelmingly approved a constitutional amendment which created Proposition 7 funds in November 2015. The Texas Constitution directs a portion of the state general sales and use tax (beginning in fiscal year

2018-2019) and motor vehicle sales and rental tax revenues (beginning in fiscal year 2020) to the State Highway Fund.

Jobs and Unemployment
As reported in a March 2018 Press Release by the Texas Workforce Commission, Texas added 16,000 jobs in January 2018 and 240,500 over the year. According to the Bureau of Labor Statistics, in March 2018, the national unemployment rate was 4.1 percent.
The Bureau of Labor Statistics also reported that in February 2018, Texas' unemployment rate was 4.0 percent. As the Texas unemployment rate continues to decrease, TxDOT may experience difficulties in attracting professional and skilled-workers.

Employment Outlook
According to the Texas Workforce Commission's *Report on Texas Growth Occupations – 2017*, Workforce demographic and economic changes are occurring as Texas employers also have enhanced their employment requirements. Hiring managers are looking for more workers while also demanding workers with more technical skills, more work experience, and more education than in the past. Such trends lead to a rising demand for two kinds of workers in the high-demand, high-wage fields:

- Jobs requiring a bachelor's degree and specific technical skill training
- Jobs requiring some form of post-secondary education, specific technical skill training, and additional on-the-job training

TxDOT has several positions that are very specialized in nature. These specialities are rare in the labor market. The types of positions include: specialized engineers, maintenance and construction experts, inspectors, environmental experts, and project managers. TxDOT will compete with external entities for these skilled workers. The experience level required to obtain the required knowledge, skills, and abilities of these employees is vital to the continued operations and achievement of TxDOT's mission and goals.

The April 2018, *Federal Reserve Beige Book* states:

"Widespread employment growth continued, with most Districts characterizing growth as modest to moderate. Labor markets across the country remained tight, restraining job gains in some regions. Contacts continued to note difficulty finding qualified candidates across a broad array of industries and skill levels. Reports of labor shortages over the reporting period were most often cited in high-skill positions, including engineering, information technology, and health care, as well as in construction and transportation. Businesses were responding to labor shortages in a variety of ways, from raising pay to enhancing training to increasing their use of overtime and/or automation, among other strategies. Upward wage pressures persisted but generally did not escalate; most Districts reported wage growth as only modest."
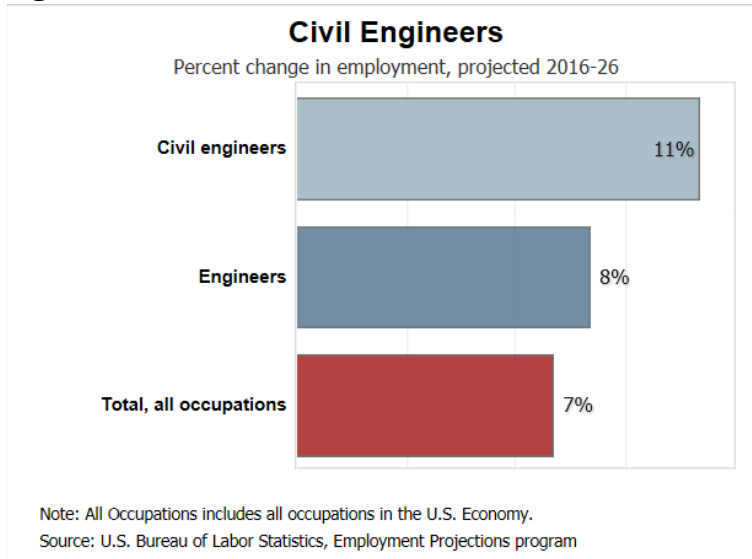
In January 2018, the Bureau of Labor Statistics, U.S. Department of Labor, *Occupational Outlook Handbook* stated "As current U.S. infrastructure experiences growing obsolescence, civil engineers will be needed to manage projects to rebuild, repair, and upgrade bridges, roads, levees, dams, airports, buildings, and other structures."

As new opportunities present themselves for civil engineers, TxDOT may be faced with a supply shortage. Other competing industries include water systems, oil and gas, and renewable energy projects.

Civil engineers focus on many areas, and TxDOT opportunities include those of transportation engineer, design engineer, structural engineer, geotechnical engineer, and construction engineer.
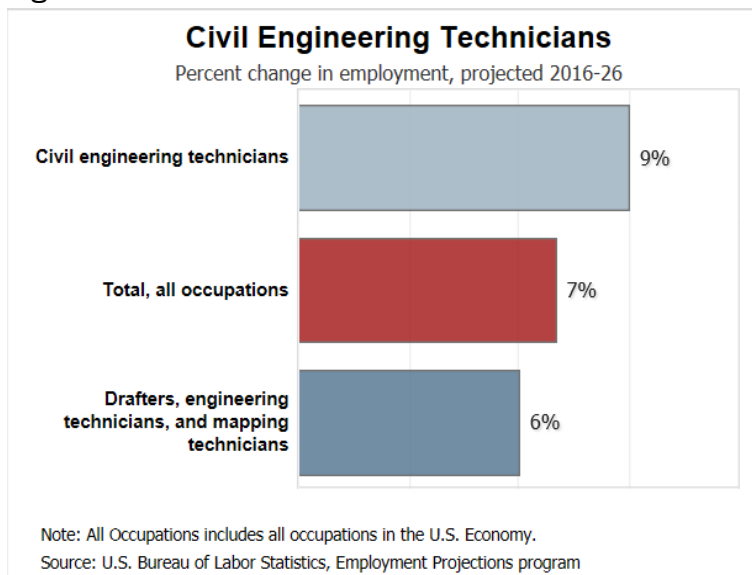
Figure 3 shows the projected growth of civil engineer employment is 11 percent from 2016 to 2026.

Figure 3

Civil Engineers
Percent change in employment, projected 2016-26

- Civil engineers: 11%
- Engineers: 8%
- Total, all occupations: 7%

Note: All Occupations includes all occupations in the U.S. Economy.
Source: U.S. Bureau of Labor Statistics, Employment Projections program

Similarly, civil engineering technicians are required to perform engineering-related work at TxDOT. As depicted in Figure 4, the job outlook for civil engineering technicians is projected to grow 9 percent from 2016 to 2026.

Figure 4

Civil Engineering Technicians
Percent change in employment, projected 2016-26

- Civil engineering technicians: 9%
- Total, all occupations: 7%
- Drafters, engineering technicians, and mapping technicians: 6%

Note: All Occupations includes all occupations in the U.S. Economy.
Source: U.S. Bureau of Labor Statistics, Employment Projections program

In 2016 the Bureau of Labor Statistics indicated that of the largest employers of civil engineers, engineering services employed 48 percent followed by state government at 12 percent; and the remaining civil engineers were employed by local and federal governments, and nonresidential building construction.

Additionally, the Bureau of Labor Statistics reported that in 2016, the largest employers of civil engineering technicians were engineering services at 42 percent, followed by state government at 29 percent, and local government at 17 percent.

The Texas Workforce Commission's Texas Labor Market Information, as depicted in Table 2, projects the percent growth for Civil Engineers and Civil Engineering Technicians.

Table 2

Occupational Title	Percent Growth 2014-2024
Civil Engineers	23.9%
Civil Engineering Technicians	15.5%
Source: Texas Workforce Commission Labor Market and Career Information Tracer	

As noted in the Texas Workforce Commission's *Report on Texas Growth Occupations - 2017*, "Economic changes can impact employment in all industries in Texas. Still, demand across occupations varies depending on the needs of employers in different industries and locations."

As reflected in Figure 5, the Texas Workforce Commission's March 2018 *Texas Labor Market Review* highlights the fastest growing metro areas over the year.

Figure 5
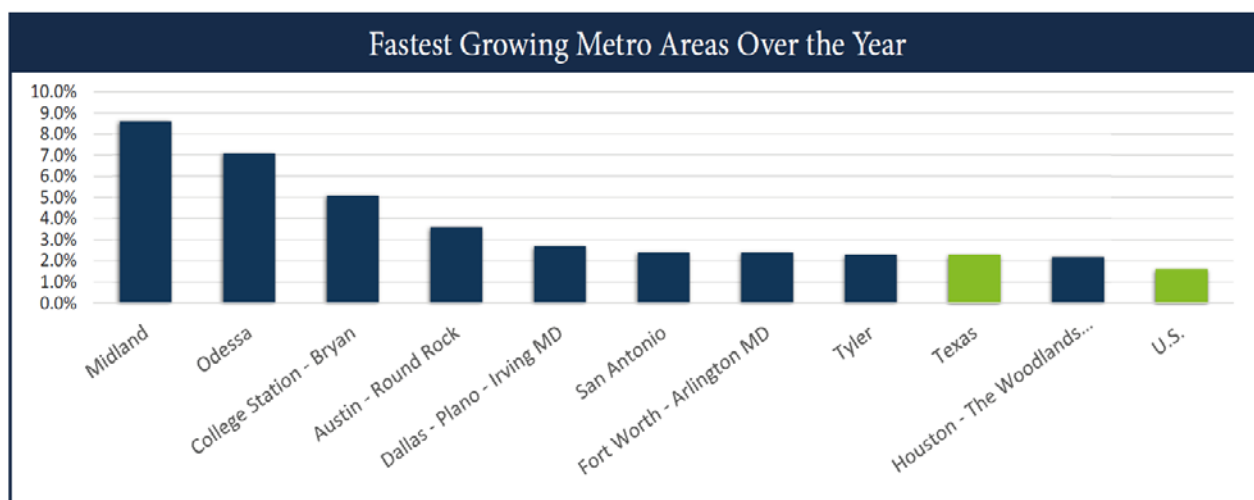
Source: Texas Workforce Commission Labor Market and Career Information Tracer

Compensation Outlook

Wage pressures are also impacting the availability of the workforce. The Federal Reserve Bank of Dallas reported in the April 18, 2018 *Federal Reserve Beige Book,* "Solid employment growth continued, and wage pressures remained elevated. Hiring picked up pace in services, retail and energy. Among manufacturers, employment growth eased a bit. Labor shortages either continued or escalated, covering a wide array of industries and skill levels. Multiple contacts said employee retention had become increasingly difficult across skillsets, although they noted that low-skill workers in particular were quick to leave for better-paying positions. Contacts reported that some rural employers were busing in workers from nearby cities because their local labor pool was tapped out. Wage growth remained elevated across the board and increased further in the energy industry."

Processes

To create a culture of performance excellence and a workforce equipped to meet the evolving demands of functioning as a dynamic organization, consideration should be given to mapping current business processes to identify opportunities to gain efficiencies.

TxDOT oversees many projects and processes directly tied to TxDOT's mission, and one of the main goals is safety. Federal regulations, technical specifications, and changes to state and federal programming are continually changing. Everyday operations and work activities often require TxDOT to react and be in crisis mode, requiring senior staff to address issues reactively rather than proactively focusing on operational strategy.

Technology

As TxDOT strives toward a state of excellence, we are embracing technology to modernize how we conduct business. One way TxDOT has moved toward attaining this goal is by implementing PeopleSoft 9.2. This enterprise system replaced existing management systems in Finance, Payroll, Human Resources, and Supply Chain.

PeopleSoft 9.2 allowed TxDOT to streamline Human Resources procedures in compliance with the provisions of the law, delivering more efficient and effective HR services. The system enhances employee and manager self-service with minimum intervention from HR personnel. The implementation streamlined PeopleSoft processes, provided better tools, information, and improved data reporting.

People

TxDOT's employees are the link to its consistent success. TxDOT understands the importance of focusing on an employee as a whole person and allowing an employee to reach his or her full potential. TxDOT's commitment to its employees is demonstrated by its focus on employee wellness and work-life balance, as well as its support and implementation of numerous incentives and programs. TxDOT encourages employee participation in the following:

- Safety
- Training and Career Development Programs
- Wellness Program
- Work-life Balance
- WorkWise (Trip Reduction Program)

A holistic approach to the work-cycle of employees is key to fostering a modern workforce equipped to meet the challenges of sourcing work activities in the global environment in which TxDOT now functions. Our people need to be well positioned to embrace change and continue to lead us through the 21st Century.

Supply Analysis [Current Workforce]

Age
Figure 6 shows that on average, in fiscal year 2017, TxDOT employees were 46.7 years old and other state agency employees, were 46.8 years of age. Of TxDOT's employees, 71.3 percent were 40 years of age or older, compared to 59.7 percent of other state agency employees.
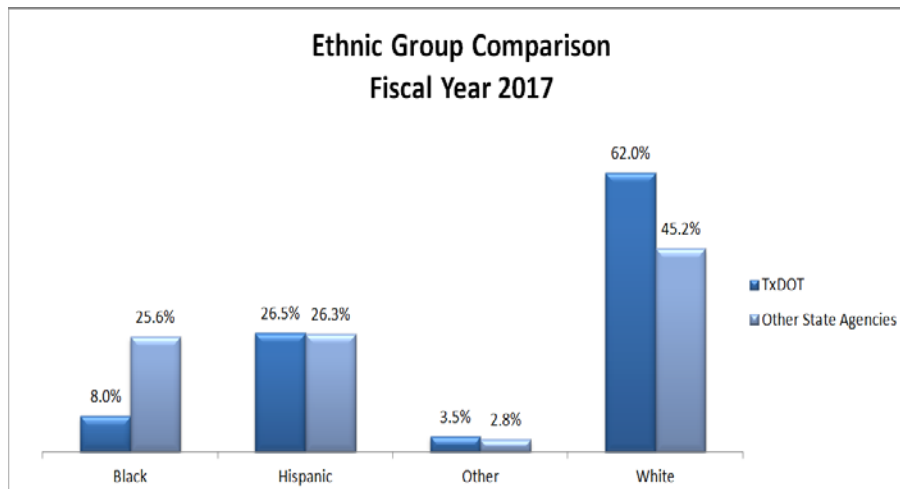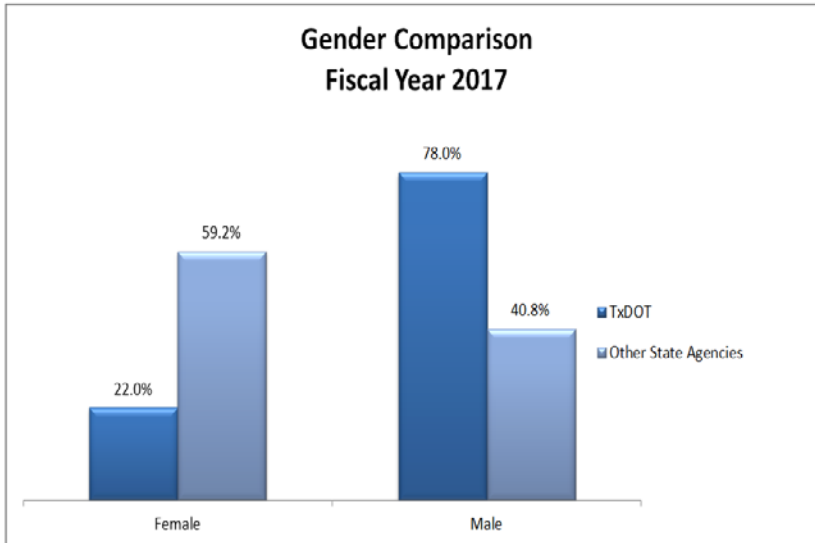
Figure 6
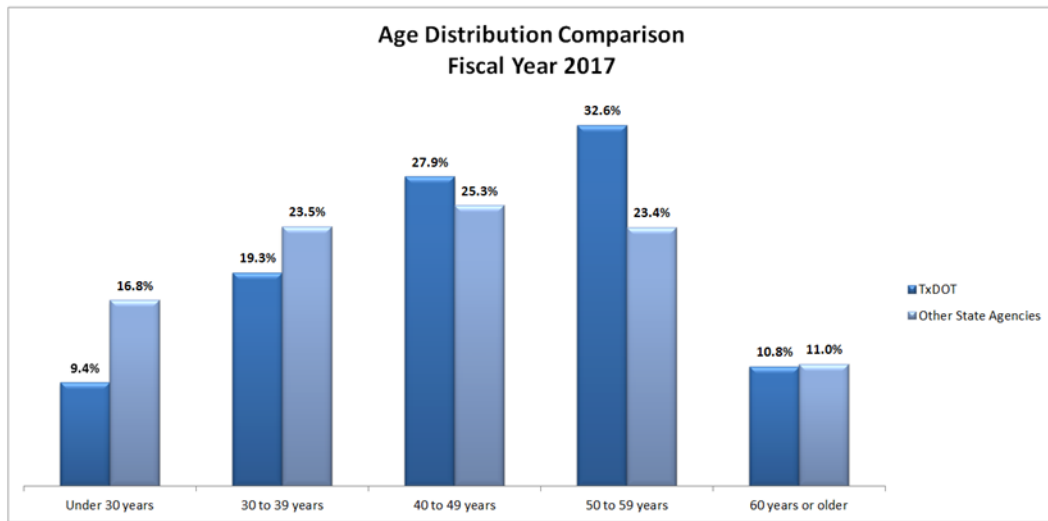
Source: State Auditor's Office's State Classification Team's Electronic Classification Analysis System (E-Class) online system - classified regular full-time and part-time employees

Retirement Eligibility
TxDOT estimates that, between fiscal years 2017 and 2022, 26.9 percent of TxDOT's workforce will be eligible to retire (based on April 2017 data).

According to the Texas Workforce Commission's *Report on Texas Growth Occupations – 2017,* "A key demographic shift is increasing demand for many occupations. Texas employers continue to experience the retirements of the Baby Boom generation. Baby Boomers have long dominated the workforce in many Texas industries. However, many are now in their sixties and are retiring at an increasing rate."

Agency and State Length of Service
In fiscal year 2017, TxDOT employees had an average of 10.4 years of agency length of service. Approximately 41.4 percent of TxDOT employees have fewer than 5 years of TxDOT service. Figure 7 compares the agency length of service between TxDOT and other state agencies.

Figure 7
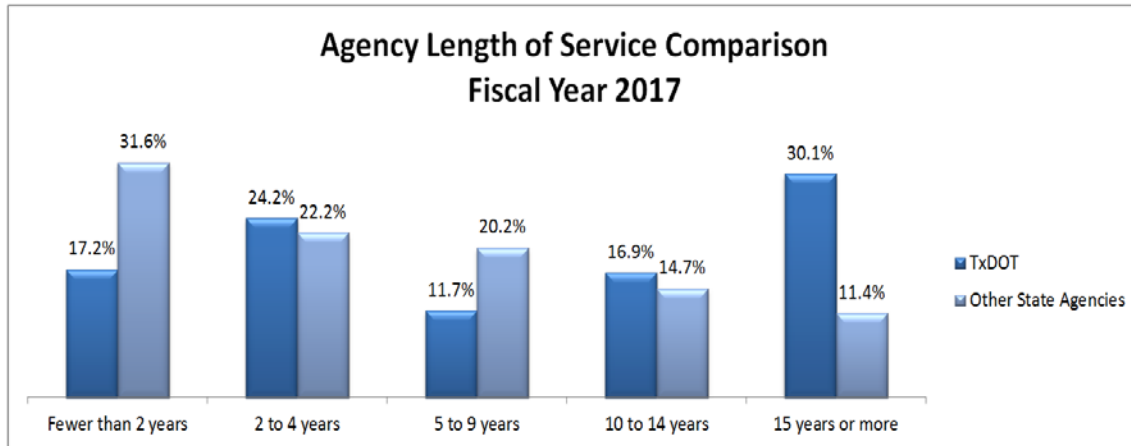
Agency Length of Service Comparison
Fiscal Year 2017

Legend: TxDOT, Other State Agencies

Category	TxDOT	Other State Agencies
Fewer than 2 years	17.2%	31.6%
2 to 4 years	24.2%	22.2%
5 to 9 years	11.7%	20.2%
10 to 14 years	16.9%	14.7%
15 years or more	30.1%	11.4%

Source: State Auditor's Office's State Classification Team's Electronic Classification Analysis System (E-Class) online system - classified regular full-time and part-time employees

Diversity
TxDOT's workforce is composed of 62.0 percent White, 26.5 percent Hispanic, 8.0 percent Black, and 3.5 percent American Indian or Alaskan Native and Asian or Pacific Islander, depicted as Other in Figure 8.

Figure 8

Ethnic Group Comparison
Fiscal Year 2017

Legend: TxDOT, Other State Agencies

Category	TxDOT	Other State Agencies
Black	8.0%	25.6%
Hispanic	26.5%	26.3%
Other	3.5%	2.8%
White	62.0%	45.2%

Source: State Auditor's Office's State Classification Team's Electronic Classification Analysis System (E-Class) online system - classified regular full-time and part-time employees

Figure 9 shows TxDOT's workforce is predominately male at 78 percent, with females at 22 percent.

Figure 9

Gender Comparison Fiscal Year 2017

Female — TxDOT: 22.0%, Other State Agencies: 59.2%
Male — TxDOT: 78.0%, Other State Agencies: 40.8%

Legend: ■ TxDOT ■ Other State Agencies

Source: State Auditor's Office's State Classification Team's Electronic Classification Analysis System (E-Class) online system - classified regular full-time and part-time employees.

As reported in in the Workforce Analysis Summary for fiscal year 2016, published by the State Auditor's Office, TxDOT's total percent of veterans employed in fiscal year 2016 was 8.9 percent; this increased to 9.5 percent as of April 2017.

State Occupational Category and Job Classification
In fiscal year 2017, 51.4 percent of TxDOT's employees were classified in the Engineering and Design occupational category; and the majority (59.8 percent) of TxDOT's employees was classified in the following job classifications:

- Engineering Technicians – 28.3%
- Engineering Specialist – 14.7%
- Engineers – 5.8%
- Equipment Operator – 5.7%
- Transportation Maintenance Specialist – 5.3%

As previously stated, the majority of TxDOT employees are in the Engineering and Design occupational category. See Table 3 for percentage breakdown by category.

Table 3

Texas Department of Transportation Fiscal Year 2017	
State Classification Plan - Occupational Category	**Percentage of TxDOT Workforce**
Accounting, Auditing, and Finance	2.6%
Administrative Support	6.0%
*Engineering and Design	51.4%
Human Resources	1.0%
Information and Communication	1.1%
Information Technology	1.2%
Inspectors and Investigators	0.3%
Land Surveying, Appraising, and Utilities	1.3%
Legal	0.3%
Library and Records	0.1%
Maintenance	15.0%
Natural Resources	1.3%
Office Services	0.2%
Planning, Research, and Statistics	1.1%
Program Management	12.8%
Property Management and Procurement	3.7%
Safety	0.6%
Source: State Auditor's Office's State Classification Team's Electronic Classification Analysis System (E-Class) online system – classified regular full-time and part-time employees	
*Engineering and Design includes General Transportation Technicians performing routine maintenance work.	

Equal Employment Opportunity Categories
As part of the reporting as outlined by the Equal Employment Opportunity Commission, TxDOT is required to make periodic reports indicating the composition for their workforce by gender and race/ethnic categories. Outlined below are descriptions of the job categories identified.

Officials and Administrators: Occupations in which employees set broad policies, exercise overall responsibility for execution of these policies, or direct individual departments or special phases of the Agency's operations, or provide specialized consultation on a regional, district or area basis. Includes: department heads, division chiefs, directors, deputy directors, inspectors (construction, building, safety, and transportation), assessors, investigators, and kindred workers.

Professionals: Occupations which require specialized and theoretical knowledge which is usually acquired through college training or through work experience and other training which provides comparable knowledge. Includes: economists, attorneys, systems analysts, accountants, engineers, librarians, management analysts, airplane pilots and navigators, surveyors and mapping scientists, and kindred workers.

Technicians: Occupations which require a combination of basic scientific or technical knowledge and manual skill which can be obtained through specialized post-secondary school education or through equivalent on-the-job training. Includes: computer programmers, drafters, survey and mapping technicians, photographers, technical illustrators, highway technicians, technicians (electronic, physical sciences), inspectors (production or processing inspectors, and testers), and kindred workers.

Administrative Support (Including Clerical): Occupations which require internal and external communication, recording and retrieval of data and/or information and other paperwork required in an office. Includes: bookkeepers, messengers, clerk-typists, statistical clerks, dispatchers, license distributors, payroll clerks, office machine and computer operators, legal assistants, toll collectors, and kindred workers.

Skilled Craft Workers: Occupations which require special manual skill and a thorough and comprehensive knowledge of the process involved in the work which is acquired through on-the-job training and experience or through apprenticeship or other formal training programs. Includes: mechanics, electricians, heavy equipment operators, stationary engineers, skilled machining occupations, carpenters, and kindred workers.

Service-Maintenance: Occupations in which workers perform duties which result in or contribute to the comfort, convenience, hygiene or safety of the general public or which contribute to the upkeep and care of buildings, facilities or grounds of public property. Workers in this group may operate machinery. Includes: truck drivers, bus drivers, custodial employees, gardeners and groundkeepers, construction laborers, craft apprentices/ trainees/helpers, and kindred workers.

The majority of TxDOT's workforce belong in the Professional and Skilled Craft Worker EEO-4 categories. Table 4 identifies the various categories occupied by TxDOT's employees.

Table 4

Texas Department of Transportation Fiscal Year 2017	
Equal Employment Opportunity Category (EEO)	Percentage of TxDOT Workforce
Administrative Support	4.9%
Officials & Administrators	3.2%
Professionals	42.3%
Service - Maintenance	2.6%
Skilled Craft Workers	31.1%
Technicians	15.9%
Source: State Auditor's Office's State Classification Team's Electronic Analysis System (E-Class) online system – classified regular full-time and part-time employees	

The Texas Workforce Commission's *Equal Employment Opportunity and Minority Hiring Practice Report, Fiscal Years 2015-2016* provides the workforce composition for the state of Texas and Texas state agencies (see Tables 5-7).

Table 5
Statewide Civilian Workforce Composition

Job Categories	Total Employees	Caucasian #	Caucasian %	Black #	Black %	Hispanic #	Hispanic %	Female #	Female %	Male #	Male %
Officials, Administrators (A)	1,281,237	819,857	64.0%	95,152	7.4%	282,925	22.1%	479,176	37.4%	802,061	62.6%
Administrative Support (C)	1,791,763	811,282	45.3%	265,855	14.8%	624,146	34.8%	1,291,656	72.1%	500,107	27.9%
Service and Maintenance (M)	2,436,248	683,072	28.0%	317,281	13.0%	1,317,427	54.1%	1,242,849	51.0%	1,193,399	49.0%
Professional (P)	2,715,488	1,608,888	59.2%	283,718	10.4%	524,524	19.3%	1,502,422	55.3%	1,213,066	44.7%
Protective Services (R)	281,229	127,884	45.5%	55,670	19.8%	87,982	31.3%	71,963	25.6%	209,266	74.4%
Skilled Craft Workers and Operatives (S)	2,361,931	816,287	34.6%	249,999	10.6%	1,196,849	50.7%	273,484	11.6%	2,088,447	88.4%
Technical (T)	381,525	187,592	49.2%	54,779	14.4%	103,612	27.2%	211,028	55.3%	170,497	44.7%
Total	11,249,421	5,054,862	44.9%	1,322,454	11.8%	4,137,465	36.8%	5,072,578	45.1%	6,176,843	54.9%

Table 6
Statewide Agencies Workforce Composition – Fiscal Year 2016

Job Categories	Total Employees	Caucasian #	Caucasian %	Black #	Black %	Hispanic #	Hispanic %	Female #	Female %	Male #	Male %
Officials, Administrators (A)	21,373	13,051	61.1%	2,348	11.0%	3,286	15.4%	11,375	53.2%	9,998	46.8%
Administrative Support (C)	49,344	20,918	42.4%	8,921	18.1%	15,763	31.9%	40,517	82.1%	8,827	17.9%
Service and Maintenance (M)	14,590	5,169	35.4%	3,653	25.0%	5,115	35.1%	6,430	44.1%	8,160	55.9%
Professional (P)	169,578	94,594	55.8%	18,655	11.0%	26,804	15.8%	95,365	56.2%	74,213	43.8%
Para-Professionals (Q)	22,740	7,555	33.2%	7,967	35.0%	6,749	29.7%	16,012	70.4%	6,728	29.6%
Protective Services (R)	52,898	21,827	41.3%	17,743	33.5%	12,267	23.2%	23,908	45.2%	28,990	54.8%
Skilled Craft Workers and Operatives (S)	10,439	6,430	61.6%	885	8.5%	2,778	26.6%	668	6.4%	9,771	93.6%
Technicians (T)	42,959	17,284	40.2%	7,926	18.5%	10,961	25.5%	25,872	60.2%	17,087	39.8%
Total	383,921	186,828	48.7%	68,098	17.7%	83,723	21.8%	220,147	57.3%	163,774	42.7%

Table 7
Statewide Agencies Workforce Composition – Fiscal Year 2015

Job Categories	Total Employees	Caucasian #	Caucasian %	Black #	Black %	Hispanic #	Hispanic %	Female #	Female %	Male #	Male %
Officials, Administrators (A)	20,371	12,618	61.9%	2,225	10.9%	3,255	16.0%	10,683	52.4%	9,688	47.6%
Administrative Support (C)	44,825	19,723	44.0%	8,457	18.9%	13,954	31.1%	37,376	83.4%	7,449	16.6%
Service and Maintenance (M)	14,218	5,146	36.2%	3,517	24.7%	4,959	34.9%	6,247	43.9%	7,971	56.1%
Professional (P)	163,449	93,278	57.1%	17,808	10.9%	25,748	15.8%	91,577	56.0%	71,872	44.0%
Para-Professionals (Q)	22,939	7,921	34.5%	7,900	34.4%	6,625	28.9%	16,223	70.7%	6,716	29.3%
Protective Services (R)	51,279	21,407	41.7%	17,273	33.7%	11,569	22.6%	23,598	46.0%	27,681	54.0%
Skilled Craft Workers and Operatives (S)	10,592	6,568	62.0%	906	8.6%	2,801	26.4%	671	6.3%	9,921	93.7%
Technicians (T)	45,531	18,719	41.1%	8,041	17.7%	11,856	26.0%	27,873	61.2%	17,658	38.8%
Total	373,204	185,380	49.7%	66,127	17.7%	80,767	21.6%	214,248	57.4%	158,956	42.6%

Like the Statewide Civilian Workforce Composition, TxDOT's workforce was also predominately White and male in fiscal year 2017 (see Table 8).

Similar to TxDOT's efforts in improving the employment of veterans, it will also need to diversify its workforce. TxDOT will continue to review its recruitment program strategies to increase the effectiveness of the following:

Affirmative Action Plan
Career Events
College Internship/Coop Programs
Conditional Grant Program
Intern Program
Marketing/Branding

On-Campus Interviews
Outreach
Recruitment/Retention Bonus
Recruitment Teams
Summer Program
Targeted recruitment for diversity and veterans

Table 8

Job Categories	Total Employees	White #	White %	Black #	Black %	Hispanic #	Hispanic %	Other #	Other %	Female #	Female %	Male #	Male %
Officials, Administrators (A)	377	288	76.3%	12	3.2%	65	17.2%	12	3.2%	66	17.6%	311	82.4%
Administrative Support (C)	571	386	67.5%	35	6.1%	144	25.3%	7	1.2%	501	87.7%	71	12.3%
Professional (P)	4,926	2,950	59.9%	473	9.6%	1,219	24.8%	284	5.8%	1,703	34.6%	3,223	65.4%
Service and Maintenance (M)	308	165	53.4%	32	10.4%	104	33.6%	8	2.6%	17	5.6%	291	94.4%
Skilled Craft Workers (S)	3,617	2,252	62.3%	257	7.1%	1,058	29.2%	51	1.4%	81	2.2%	3,536	97.8%
Technical (T)	1,848	1,185	64.1%	123	6.6%	499	27.0%	41	2.2%	199	10.8%	1,649	89.2%
Total	11,646	7,224	62.0%	931	8.0%	3,088	26.5%	403	3.5%	2,567	22.0%	9,080	78.0%

Demand Analysis

The workforce planning processes involves the analysis of work demand that looks at multiple areas such as:

- Staffing patterns
- Demand for labor to address aging infrastructure needs
- Anticipated program and workload changes
- Workforce skills to meet projected needs

Although TxDOT can identify areas of demand, the challenge is lack of data and/or access to data.

In fiscal year 2017, 1,342 employees left TxDOT. Eighty-eight percent of those separations were voluntary (voluntary separations include retirements and transfers to another state agency or institution); 44 percent of those voluntary separations were retirements.

As TxDOT reviews these departures, key areas where a demand for replacements occur within core business functions include management, engineering, maintenance, contracting and procurement, human resources, and other areas. It is critical that TxDOT hires employees well-suited to complete the TxDOT mission. This includes assembling staff that are properly trained and prepared to move TxDOT forward.

Influences on Demand
Texas Economic Growth:

- According to Texas Workforce Commission Chairman Andres Alcantar in a January 19, 2018 Press Release, "Texas ended 2017 with record-level job creation numbers during the fourth quarter, with 10 of 11 industries expanding over the year and an annual gain of 306,900 jobs."
- According to the Texas Workforce Commission's *Report on Texas Growth Occupations-2017*, of the 800 different occupations tracked by the Texas Workforce Commission, employment is projected to increase in almost all those occupations across industries.

In reviewing the past trends and the future forecast, Texas is facing a challenge in maintaining and growing a skilled workforce; especially Science, Technology Engineering, Math (STEM) workers.

Science, Technology, Engineering, Math (STEM) Shortage:

- Recent research shows that certain U.S. STEM jobs in the labor market are growing at a much faster rate than the general workforce.
- The STEM workforce also consists of many types of STEM-capable workers who employ significant STEM knowledge and skills in their jobs. The demand for, supply of, and career prospects for each sub-workforce can vary significantly by employment sector, industry, or geographic region.

TxDOT will continue to have a need for highly-skilled, professional STEM workers. However, to remain competitive, TxDOT must also focus on hiring STEM-capable workers at every educational level. This "technical STEM workforce" consists of workers with high school or

two-year technical training or a certification who employ significant levels of STEM knowledge in their jobs.

Critical Functions
Table 9 provides a list of functions identified as being critical not only to the mission of TxDOT, but also to ensure the State achieves and complies with the federal and state regulations, metrics and performance measures.

Table 9

Critical Functions at TxDOT		
Engineering	Communications	Financial Management, Audit, and Compliance
Maintenance	Planning	Procurement and Contract Management
Program Management	Project Management	Safety Operations

Competency Needs
As we move forward, expertise is required in these scarce and critical positions that encompass having knowledge in the following competencies:

- **Self-management** – Displays resilience and flexibility in the face of obstacles; demonstrates self-reflection; pursues personal development; and learns.
- **Communication** – Communicates clearly and precisely through written and verbal means; provides accurate information effectively.
- **Problem solving** – Frames up and analyzes complex problems; develops practical solutions; acts decisively, based on sound judgment.
- **Performance focus** – Delivers tangible results/action management; takes economic implications into account; demonstrates "can-do" attitude.
- **Teamwork** – Involves and consults others; builds partnerships; connects across entities; displays empathy toward others.
- **Change Management** – Uses continuous improvement; communicates reason for change; influences others; demonstrates use of innovative solutions.
- **People leadership** – Builds diverse teams; coaches and motivates; delegates effectively; gives and receives feedback.
- **Project planning and execution** – Displays sound project planning; delivers projects to completion; tracks progress.
- **Strategic thinking** – Conducts strategic, mid- to long-term planning and visioning; displays political savvy; considers broader context, e.g., other entities, society.
- **Business acumen** – Displays basic budget and finance knowledge; thinks through operational excellence; navigates political landscape.
- **Customer Focus** – Identify and respond to client needs; providing excellent customer service to both internal and external clients; and build relationships.

These competencies will be used during the recruiting process, career development, and performance management.

Expected Workforce Changes
In the next five years, the demands for the workforce will change and will be influenced by the following:
- Aging Infrastructure
- Information and Technological Capabilities
- Aging Workforce
- Competition for Talent

During this time, TxDOT will require:
- Increased emphasis on business processes to achieve performance excellence
- Greater focus on program management and contract management
- Increased use of technology to maximize efficiency in workflow through enterprise resource planning and key transportation applications
- Increased use of subject matter experts

TxDOT may need to expand and deepen its skills to accomplish these programs, and make adjustments in available workforce to continue to be successful in the evolving environment.

Changing Needs in the Workforce
As the workforce changes, TxDOT will need to:
- Change with the business operations to achieve performance excellence
- Recruit and attract skilled workers
- Train staff to integrate new technologies into current processes
- Include contract management and negotiations skills in professional and management staff
- Cross-train employees in critical functions
- Make strategic investments, conserve assets, and promote safety
- Promote a mobile workforce

Employ Knowledgeable and Skilled Employees Needed to Do the Work
TxDOT's employment and mobilization of a knowledgeable and skilled workforce will be critical to TxDOT's ability to achieve its mission and goals. TxDOT will need to:
- Reallocate FTEs within TxDOT to address increased demands
- Review and develop efficient work processes
- Provide initial training and continue cross-training
- Continue knowledge transfer efforts
- Use contingent workforce as needed
- Develop recruiting and hiring practices to attract skilled candidates to compete for positions
- Establish high expectations and demand accountability of existing staff

Gap Analysis
Organizational Structure
- Ensure organization structure provides flexibility, allowing TxDOT to move faster in response to change, challenge, and innovation.
- Continue to improve accountability, communications, productivity, and innovation.

Strategic Staffing and Recruiting
- Address staffing and recruiting from a proactive, planning perspective that it is less reactive.
- Focus on diversity by increasing opportunities to recruit and employ females and minorities.
- Focus on positions critical to achieving the TxDOT goals.
- Validate the critical competencies for key positions.

Compensation
- Ensure the compensation strategy and structures align with business strategy and are connecting through line-of-sight. The compensation strategy should allow TxDOT to recruit and retain qualified talent.

Knowledge Transfer
- Skilled workforce development.
- A significant number of retirement-eligible employees perform critical activities where knowledge transfer plans are not in place.
- Institutional knowledge needs to be documented and transferred.
- Existing technology inhibits the ability to transfer knowledge without having the requisite expertise.

Anticipated Surplus or Shortage of Workers or Skills
- While employees have sufficient skills for the current environment, additional skills will be needed in the future – for example, change management and project management capabilities.
- TxDOT will also face the challenge of retaining the institutional knowledge that may be lost as a result of employee turnover and retirements.
- The focus for staff will be in transferring knowledge and in positioning key staff members for promotion, and career development.
- Conduct a methodical analysis of current work activities, their drivers with related time and cost measures, and develop staffing models based on workload analysis.

Leadership and Business Development
- Staff members and managers are technically competent; however, there is a need to deepen business management and leadership knowledge and techniques.
- Develop leadership that can articulate a vision and a strategy that motivates staff to engage in accomplishing the mission.
- Contract, project management, financial, human resources, and STEM skills are emerging as a critical need.
- Operational (information technology, time keeping, project management, measurements):
  o Limited and disparate systems are in place to track resources and time allocations on a per project basis.
  o Data-driven systems are needed to capture information that would allow for the measurement of workload and productivity in an integrated manner.

Strategies for Consideration to Address Identified Workforce Gaps

Strategy: Organizational Structure
Action Plan Goals
- Commit to a transformational change period at TxDOT, with executive-level champions, clearly defined goals and objectives, and acceptance of the time and investment required to implement significant improvement.
- Continue to create organizational structures providing line-of-sight to TxDOT's mission and goals.
- Continue to develop the agency's career development program.

Objective: Continue to ensure that the organization is responsive to internal and external environmental factors by remaining agile and responsive to the changing needs of Texas.

Objective: Monitor, evaluate and redesign strategic and operational systems to continually adapt to business model changes.

Objective: Implement best practices sharing and greater depth in critical role redundancy to have a more effective knowledge transfer program.

Strategy: Strategic Staffing and Recruiting
Action Plan Goals:
- Address staffing and recruiting from a proactive, planning perspective so that it is less reactive.
- Focus on positions critical to achieving the business strategy.
- Improve recruiting process to capture a more diverse and highly qualified applicant pool.
- Validate the critical competencies for key positions.

Objective: Develop a strategic staffing and recruiting plan that includes processes, procedures, and resulting metrics.

Objective: Develop recruitment plan to attract positions requiring expertise in transportation planning, programming, financing, and monitoring.

Objective: Develop competencies critical for the accomplishment of TxDOT's mission and integrate these into the hiring and recruitment process.

Objective: Enhance the recruitment and selection tools and training to enrich the hiring process.

Strategy: Compensation
Action Plan Goals:
- Ensure the compensation strategy and structures align with business strategy and are connecting through line-of-sight. The compensation strategy should allow TxDOT to recruit and retain qualified talent.

Objective: Ensure roles and responsibilities within TxDOT are appropriately classified and, if needed, reviewed for reclassification.

Objective: Conduct salary market benchmarking to ensure salary structure is competitive based on current compensation philosophy, and review hiring rate philosophy and placements of positions within appropriate salary range.

Objective: Assess whether existing supervisory structure is representative of the roles and responsibilities required.

Strategy: Knowledge Transfer

Action Plan Goals

- Deploy a disciplined and structured career development program tailored for purposes of business continuity, which lessens the risk associated with the loss of institutional knowledge.
- Continue to develop procedures manuals and tools to outline standard operating processes.

Objective: Deploy knowledge management and critical expertise continuity based on best practices to address risks associated with retirement of experienced staff.

Objective: Deploy knowledge transfer to strengthen TxDOT's current and future workforce by developing the skills, abilities, and talent needed for leadership continuity.

Objective: Develop policies, procedures and training to ensure transfer of knowledge for information technology systems.

Strategy: Anticipated Surpulus or Shortage of Workers or Skills

Action Plan Goals

- Conduct a methodical analysis of current work activities, their drivers with related time and cost measures; and develop staffing models based on workload analysis.
- Develop a staffing plan based on forecasted business needs.
- Develop an FTE management process to incorporate the analysis, decision making, and change implementation processes that meet operational and strategic needs.
- Establish staffing standards, FTE plans and performance objectives that drive operational and key strategic initiatives.

Objective: Conduct a methodical analysis of current work activities, their drivers with related time and cost measures; and develop staffing models based on workload analysis.

Objective: Develop a staffing plan based on forecasted business needs.

Objective: Develop an FTE management process to incorporate the analysis, decision making, and change implementation processes that meet operational and strategic needs.

Strategy: Leadership and Business Development

Action Plan Goals:

- Develop and deliver training focused on core leadership competencies.
- Provide resources for leaders to gain understanding of techniques used to review processes, gain efficiencies, and utilized metrics.
- Obtain and develop project and contract management competencies.

Objective: Develop tailored business development training for engineers and critical staff that focuses on business acumen.

Objective: Develop a program to transform the approaches used in addressing business situations that would provide guidance to be more strategic, lead change, and embrace innovative practices.

Objective: Provide training to enhance project management and contract management practices.

Strategy: Operational

Action Plan Goals

- Continue to monitor business processes to ensure best practices are being used.

- Implement a workload tracking system to identify the capacity of the workforce.

Objective: Establish requirements to be used in the design of a workload tracking system.

Objective: Develop tracking systems to capture the resources and time allocation needed on a per-project basis.