



THE UNIVERSITY OF TEXAS AT AUSTIN
CENTER FOR TRANSPORTATION RESEARCH

Technical Memorandum 1

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Executive Summary

This technical memorandum contains four major chapters:

- Chapter 1 introduces current DLD practice in Texas, as well as other U.S. states. Basic statistics of Texas DLD are presented.
- Chapter 2 summarizes the findings from a review of the literature including long wait time complaints, and various efforts made by agencies to reduce the wait time and improve DLD efficiency.
- Chapter 3 summarizes the key findings of this technical memorandum.

The study team carefully categorized, thoroughly analyzed, and systematically documented all the information obtained from the literature review, using the resulting synthesis to arrive at the key findings presented in this technical memorandum:

- A thorough review of DLD in Texas and other States is performed;
- Although DLD is managed and operated by different agencies across the U.S., complaints about long wait time has been a common issue;
- The Federal REAL ID citizenship and lawful presence documentation requirements have significantly impacted wait and transaction times in Texas and most other states;
- Various factors have been identified to cause long customer wait time;
- Various actions have been taken by agencies to reduce wait time, including optimize workflow and process, employing self-check in Kiosks, recruiting more employees, and etc.; and
- Certain actions could potentially be adopted by Texas DLD to reduce wait time

This technical memorandum will serve as a solid foundation for this project, on which we can conduct such activities as surveys and safety impact quantification.

Chapter 1. Driver License Division (DLD) Practices

1.1. History and Scope of Texas DLD

The Texas Department of Public Safety (DPS) Driver License Division (DLD) in Texas is operated and managed by Texas Department of Public Safety (TxDPS). The original driver license law took effect on February 14, 1936 (Senate Bill 15, 44th Legislature, Second Called Session, 1935), requiring each driver to possess a license issued by the Department or by the County Tax Collector. In 1937 (House Bill 16, 45th Legislature, Regular Session), DPS took full responsibility for all the functions concerning the licensing of drivers. By 1950, the DLD gave tests to applicants for original licenses, examined those with suspended licenses, issued renewals, and analyzed records of careless/reckless drivers as a basis for suspension or cancellation. The Division maintained an examining service in each of the 254 county seats, and in the larger cities. After the 1957 reorganization, the Division's name was changed to Driver License Service. As of February 2000, the Division oversaw the issuance of Texas driver's licenses and identification cards, maintained driver record files, administered all driving examinations, and coordinates services related to driver improvement, safety responsibility, and customer service. Prior to 1970, the Division was placed under the Traffic Law Enforcement Division, where it remained until the late 1990s, when it was again made an independent division (TxDPS, 2020). Today, DLD has become the second largest division in TxDPS with 231 driver license offices (DLOs) and testing sites and about 2,900 full time employees (as of October 15, 2019) across the state. Driver License Division is committed to “creating a faster, easier, and friendlier driver license experience and a safer Texas” (TxDPS 2017).

The major responsibilities of TxDPS DLD are to issue Texas driver licenses and identification cards; collect, maintain, and provide driver records; and investigate and prevent identity fraud related to licenses and identity cards (Sunset Advisory Commission, 2009). According to Texas Comptroller of Public Accounts, about 23.7 million Texans hold a Texas driver's license or a DPS-issued identification card. In FY2018, nearly 7.5 million transactions were completed by DPS' Driver License Division involving licenses and identification cards, including issuance, renewals, and replacements, 5.9 million of which were face-to-face transactions (Texas Comptroller of Public Accounts 2019).

Texas DLD provides the following major services:

- Driver license services:

- Apply for a driver license (12 types of licenses or Learner Permits including 3 types of CDL licenses). In addition, special driver's licenses are issued for individuals based on legal or medical factors.
- Renew/replace a driver license
- Move to Texas (Transferring a valid license or obtaining a new license or ID Card when moving to Texas from another state)
- Change your address/name
- Out-of-state renewals
- Manage additional requirements for Drivers 79 years & older
- Veteran services (check disability verification documents and provide veteran designation for driver licenses and ID cards)
- Administer the Federal REAL ID program for Texas including electronic copying and database storage of proper documentation verifying US citizenship
- Vision Test
- Take thumb prints
- Photo service
- During DL or ID card processing ask the customer if they want to donate to 4 charities; collect information if necessary
- During DL or ID card processing ask the customer if they want to become an organ donor; collect information if necessary
- During DL or ID card processing ask the customer if they want register to Vote; collect information if necessary
- Collect Selective Service System information when issuing a driver's license or ID card to males 18 – 25. Transmit information to the Selection Service System on a weekly basis.
- Determine and document Endorsements & restrictions
- Maintain Driver License System database (DLS) which contains all Driver Records and transactions
- Manage Impact Texas Drivers (ITD) Program, including Impact Texas Teen Drivers (ITTD) program and Impact Texas Young Drivers (ITYD) program to improve safety through awareness and education
- Manage Third Party Skill Testing (TPST) Program to reduce wait time to take Class C non-commercial driving test. DLD evaluates

qualifications/credentials to issue certificate to qualified Driver Education schools. The certification process includes:

- Testing of the Driver Education school instructors
- Audit and approval of the drive route used for the drive test
- Obtain and document Emergency Contact Information
- Identification card (ID) services
 - Apply for/renew/replace ID card
 - Change address
 - Out-of-state renewals
 - Veteran services

Thirty-one DPS DLOs provides commercial driver license (CDL) services:

- CDL driving test
- Apply for/renew/replace a CDL
- CDL Handbook (both English and Spanish, online)
- Apply for a non-domicile CDL
- Manage CDL third-party skill testing (TPST) program, which authorizes qualified companies certified by DLD to administer the driving skills examination for Class A, B, and C CDL applicants. A certified TPST provider must have a Designated Responsible Person and an Examiner certified by the Department.
- Endorsements & restrictions:
 - An endorsement allows a commercial vehicle driver to operate certain types of commercial motor vehicles and transport specific items. In total, there are 6 types of endorsements, which are listed in Table 1:

Table 1. Six Types of Commercial Driver License Endorsements

Endorsement Code	Description
H	Allow driver to transport hazardous materials, such as flammable or combustible liquids, gases, or explosives. A comprehensive state and federal background check is required
N	Allow driver to operate a tank vehicle, which is designed to safely transport liquid or liquefied gaseous materials
P	Allow driver to operate a vehicle that carries a specific number of passengers
S	Allow driver to operate a school bus
T	Allows driver to tow a double or triple trailer
X	Combination of N and H, which allows driver to transport hazardous materials in a tank vehicle

- A restriction code may be placed on any type of driver license (both non-commercial and commercial) to make the individual a better driver. For example, one of the most common restriction code is Code A – with corrective lenses. A complete list of 66 restrictions can be found at the TxDPS website at: <https://www.dps.texas.gov/DriverLicense/endsRestrictions.htm>

- Medical certification
- CDL instruction videos (online)

It is apparent from this list of functions that DLD performs several activities that are not directly related to issuing a driver’s license or ID card; but are required to be performed under state or Federal law.

In addition, the TxDPS DLD website also provides customers the options of ‘getting in line at local office online’ to reduce wait time and to renew a driver license and ID card online if the individual is eligible. According to TxDPS DLD website, the following online services are provided:

- DL and ID Renewal:
 - DL services How to Videos: Provide YouTube Videos to assist customers and provide information on some of the most frequently asked questions, including: 1. How to check the status of your DL or ID; 2. How to obtain a DL if it has been expired for more than two years; 3. How to apply for a Texas Driver License; and 4. How to get in line online before you arrive at the office.
 - Renew your DL or ID online application
 - Change your address on your driver license or ID online application
 - Renew or Replacing Your DL or ID While You Are Out-of-State Step-by-step Instruction

- Track a driver license or ID that you recently renewed or changed online application
- New Texas DL or ID:
 - Link to all required documentation for a Texas Driver License or ID
 - Check Lawful Presence Status online application
- Driver Record:
 - Driver record request online application
 - Check your driving eligibility and see if you owe fees online application
- Schedule before you go to a DLO:
 - Schedule a driving test online application
 - “Get in line” online application
- Surcharges and the Driver Responsibility Program:
 - Provide a link to Driver Responsibility Program (Surcharge) Repeal frequently asked questions where customers can obtain very comprehensive information
- Enforcement Actions:
 - Pay reinstatement fees online application
 - Find court information for failure to appear or failure to pay online application
 - Request a hearing for a license suspension, cancellation, revocation, denial, or disqualification online application
 - Request an Administrative License Revocation (ALR) hearing for a breath or blood test failure or refusal online application
- Teen and Adult Driver Education:
 - Provide link to Parent Taught Driver Education Programs managed by Texas Department of Licensing and Regulation
 - Provide link to Adult Driver Education Programs managed by Texas Department of Licensing and Regulation
 - Provide link to Impact Texas Drivers (ITD Program) managed by TxDPS
 - Provide detailed information on Impact Texas Drivers (ITD Program)

- Crash Records:
 - Provide link to Crash Records Information System (CRIS) managed by Texas Department of Transportation, where customers can search for and purchase crash reports
- CDL How to Videos:
 - Provide links to a series of YouTube videos on CDL instructions, including engine start, school bus, engine components, the exterior, the axles, and the coupling systems
 - Provide the procedures and requirements on how to get a CDL

Federal REAL ID Compliance

In 2005, the United States Congress passed the REAL ID Act, which requires states to adopt and implement uniform standards for the issuance and production of state-issued driver licenses and identification cards if they are to be accepted as identity documents by the federal government. This Act strengthens the integrity and security of state-issued cards in an effort to reduce identity fraud and terrorism, and improve the reliability and accuracy of state-issued identification document. Beginning October 1, 2020, only state-issued driver licenses and identification cards that are fully compliant with the REAL ID Act will be accepted for official federal government purposes, such as entering secure federal buildings or boarding domestic flights. The cards will be marked with a gold circle with an inset star located in the upper right-hand corner. TxDPS DLD began issuing REAL ID compliant cards on October 10, 2016. To reduce customer's exposure to identity theft and fraud, ensuring the validity of the information and documentation, TxDPS DLD utilizes a nationally recognized DL and ID issuance process, which involves verifying your identity, residency, and US Citizenship or lawful presence. According to DLD, the following documents are required when applying for a Driver License or ID card in Texas:

- Proof of citizenship or lawful presence (photocopies are not accepted) include: US passport book or passport card, Birth certificate or birth record issued by the appropriate State Bureau of Vital Statistics or equivalent agency from a US state or local government, a US territory, or the District of Columbia, etc.
- Proof of Social Security Number (SSN): Social Security Card, W-2, Paystub with the applicant's name and SSN on it, etc.
- Proof Texas residency: e.g., utility bill statement dated within 90 days of the application date; mail from a federal, state, county, or city government agency dated within 90 days of the application date, etc.
- Proof of Identity (Documents must be original or a copy certified by the issuing agency. Photocopies are not accepted.): includes both primary

identification documents, secondary identification documents, and supporting documents.

- Primary documents include Texas DL or photo ID within two years of expiration; Unexpired US passport book or passport card, etc.
 - Secondary documents. For example, Original or certified copy of a birth certificate or birth record issued by the appropriate State Bureau of Vital Statistics or equivalent agency from a US state or local government, a US territory, the District of Columbia, or a Canadian province
 - Supporting documents include Expired Texas DL or ID (expired more than two years—actual card), school records, military records, etc.
 - If a customer cannot show a document from the Primary Identification Documents list, he/she can present either two documents from the Secondary Documents or one document from the Secondary Documents list and two documents from the Supporting Documents list
- Texas Vehicle Registration and Proof of Insurance, which includes Proof of Insurance for each vehicle, and Evidence of Texas Vehicle Registration for each vehicle (customer has the option to sign a statement to affirm if he/she does not own any vehicles).

A complete list of required document types can be found at TxDPS website: <https://www.dps.texas.gov/internetforms/FormDetail.aspx?Id=2281&FormNumber=DL-57.pdf>.

DPD staff receive extensive training on the nine-step process to issue new licenses and the eight-step process for renewals. The federal REAL ID Act establishes minimum security standards for state-issued driver licenses and IDs, including the requirement that applicants prove lawful presence in the U.S.

1.2. DLD in Other States

The study team performed an extensive literature review to learn how other U.S. states operate and maintain their DLD. The review also revealed the priorities and differences between studies performed in other U.S. states.

The following summarizes state DLD with regard to the State Agency which administers the program:

- 10 States (California, Connecticut, District of Columbia, Indiana, Nebraska, Nevada, New Jersey, New York, South Carolina, and Virginia) maintain and operate driver license service under Department/Bureau of Motor Vehicles.

Table 2. Agencies with Driver License Division Functions in Different States

State	State Agency for Driver License	Verified Link
Alabama	Department of Public Safety, Driver License Division	https://www.alea.gov/dps/driver-license
Alaska	Department of Administration, Division of Motor Vehicles	https://doa.alaska.gov/dmv/akol/renewal.htm
Arizona	Department of Transportation, Motor Vehicle Division	https://azdot.gov/motor-vehicles/driver-services/driver-license-information
Arkansas	Department of Finance and Administration, Driver Services	https://www.dfa.arkansas.gov/driver-services/
California	Department of Motor Vehicles	https://www.dmv.ca.gov/portal/
Colorado	Department of Revenue, Division of Motor Vehicles	https://www.colorado.gov/dmrv
Connecticut	Department of Motor Vehicles	https://portal.ct.gov/DMV
Delaware	Department of Transportation, Division of Motor Vehicles	https://deldot.gov/About/divisions/index.shtml
District of Columbia	Department of Motor Vehicles	https://dmv.dc.gov/
Florida	Department of Highway Safety and Motor Vehicles*	https://www.flhsmv.gov/
Georgia	Department of Driver Services	https://dds.georgia.gov/
Hawaii	Department of Transportation**	https://www2.honolulu.gov/documentguide/
Idaho	Department of Transportation, Division of Motor Vehicles	https://itd.idaho.gov/itddmv/
Illinois	Secretary of State, Driver Services Department	https://www.cyberdriveillinois.com/departments/drivers/drivers_license/home.html
Indiana	Bureau of Motor Vehicles	https://www.in.gov/bmv/
Iowa	Department of Transportation, Motor Vehicle Division	https://iowadot.gov/mvd/driverslicense
Kansas	Department of Revenue, Division of Vehicles	https://www.ksrevenue.org/dvlicenses.html
Kentucky	Kentucky Transportation Cabinet, Division of Driver Licensing	https://drive.ky.gov/Pages/default.aspx
Louisiana	Department of Public Safety, Office of Motor Vehicles	https://dps.expresslane.org/driverslicense

State	State Agency for Driver License	Verified Link
Maine	Secretary of State, Bureau of Motor Vehicles	https://www.maine.gov/sos/bmv/licenses/index.html
Maryland	Department of Transportation, Motor Vehicle Administration	https://mva.maryland.gov/Pages/driver-licensing-questions.aspx
Massachusetts	Department of Transportation, Registry of Motor Vehicles	https://www.mass.gov/orgs/massachusetts-registry-of-motor-vehicles
Michigan	Secretary of State, Customer Service Administration	https://www.michigan.gov/sos/0,4670,7-127-1627---,00.html
Minnesota	Department of Public Safety, Driver and Vehicle Services	https://dps.mn.gov/divisions/dvs/Pages/drivers-license-information.aspx
Mississippi	Department of Public Safety	https://www.ms.gov/dps/license_renewal
Missouri	Department of Revenue	https://dor.mo.gov/drivers/
Montana	Department of Justice, Motor Vehicle Division	https://dojmt.gov/driving/driver-licensing/
Nebraska	Department of Motor Vehicles	https://dmv.nebraska.gov/dl/driver-licensing-services
Nevada	Department of Motor Vehicles	https://dmvnev.com/nvdl.htm
New Hampshire	Department of Safety, Division of Motor Vehicles	https://www.nh.gov/safety/divisions/dmv/index-original.htm
New Jersey	Motor Vehicle Commission	https://www.state.nj.us/mvc/license/initiallicense.htm
New Mexico	Taxation & Revenue Department, Motor Vehicle Division	http://www.mvd.newmexico.gov/apply-for-new-driver-s-license.aspx
New York	Department of Motor Vehicles	https://dmv.ny.gov/
North Carolina	Department of Transportation, Division of Motor Vehicles	https://www.ncdot.gov/dmv/Pages/default.aspx
North Dakota	Department of Transportation, Driver License Division	https://www.dot.nd.gov/divisions/driverslicense/driver.htm
Ohio	Department of Public Safety, Bureau of Motor Vehicles	https://www.bmv.ohio.gov/driver-license.aspx#gsc.tab=0
Oklahoma	Department of Public Safety	https://www.ok.gov/dps/Obtain an Oklahoma Driver License ID Card/

State	State Agency for Driver License	Verified Link
Oregon	Department of Transportation, Driver and Motor Vehicle Services	https://www.oregon.gov/odot/dmv/pages/driverid/licenseget.aspx
Pennsylvania	Department of Transportation, Driver and Vehicle Services	https://www.dmv.pa.gov/Driver-Services/Driver-Licensing/Pages/Drivers-License.aspx
Rhode Island	Department of Revenue, Division of Motor Vehicles	http://www.dmv.ri.gov/
South Carolina	Department of Motor Vehicles	http://scdmvonline.com/Driver-Services/Drivers-License
South Dakota	Department of Public Safety	https://dps.sd.gov/driver-licensing
Tennessee	Department of Safety & Homeland Security, Driver License Services	https://www.tn.gov/safety/driver-services.html
Texas	Department of Public Safety, Driver License Division	https://www.dps.texas.gov/diverlicense/
Utah	Department of Public Safety, Driver License Division	https://dld.utah.gov/
Vermont	Agency of Transportation, Department of Motor Vehicles	https://dmv.vermont.gov/licenses
Virginia	Department of Motor Vehicles	https://www.dmv.virginia.gov/drivers/
Washington	Department of Licensing	https://www.dol.wa.gov/
West Virginia	Department of Transportation, Division of Motor Vehicles	https://transportation.wv.gov/DMV/Drivers/Pages/Drivers-Licenses.aspx
Wisconsin	Department of Transportation, Division of Motor Vehicles	https://wisconsin.gov/Pages/online-srvcs/online.aspx
Wyoming	Department of Transportation, Driver Services Program	http://www.dot.state.wy.us/home/driver_license_records/driver-license.html

* The Florida Department of Highway Safety operates three DLOs, has a specific driver license services division, and is the coordinating agency for tax collectors who administer driver license services at the county level in all other counties but the three near Miami.

** The Hawaii Department of Transportation doesn't offer any driver license services, but serves as a coordination agency for those services. All driver license services are administered at the county level.

Based on the population, workload, demographic information, functions, and services provided by DLD, Florida and New York State have been identified as two

peer states to compare. As a comparable peer state to Texas, one of Florida Department of Highway Safety and Motor Vehicles' (FLHSMV) goals is to “maintain a professional and effective driver license program which assures that only those drivers who demonstrate the necessary knowledge, skills, and abilities are permitted to operate vehicles on Florida roads; removes from the highways and/or requires further education for those drivers who demonstrate an abuse of the driving privilege; and assures that drivers are held financially responsible for their actions” (FLHSMV, 2020 (a)).

FLHSMV manages four programs: administrative service program, Florida Highway Patrol program, information services administration program, and motorist services program. Driver license and ID cards services are under motorist services program. According to FLHSMV, as of January 1, 2019, there are 17,392,281 licensed drivers in Florida (FLHSMV, 2020 (b)). The fixed number of positions for FLHSMV motorist service program is 1,430, and 1,292.5 of them have been filled (Transparency Florida 2020). The total FY2020 – FY2021 biennial budget for Motorist Service Division is \$ 244,288,645 (The Florida Senate 2019; The Florida Senate 2020). In addition, Florida has 208 field offices providing driver license and ID card services in its 67 counties (FLHSMV, 2020 (c)). Florida began issuing REAL ID compliant credentials after January 1, 2010.

The New York State Department of Motor Vehicles' (NYDMV) goals are to “secure identity documents, deliver essential motor vehicle and driver related services, and administer motor vehicle laws enacted to promote safety and protect consumers”. And their vision is “to be a national leader in providing efficient, innovative and responsive government services” (NYDMV 2020 (a)).

NYDMV also provides vehicle registration services. According to New York State Division of the Budget (NYSDB), there are 129 DMV field offices (27 run by State and 102 run by County) in New York State's 62 counties. In FY2020, NYDMV has 2,344 full-time employees (NYSDB 2020 (a)). NYDMV spent \$666 million during FY2019 – FY2020 (NYSDB 2020 (b)).

According to NYDMV, as of January 1, 2019, there are 12,014,823 licensed drivers in New York State (NYDMV, 2020 (b)). New York State began issuing REAL ID compliant credentials on October 30, 2017.

By comparison, Texas DLD has about 2,900 full-time employees working in 231 driver license offices and testing locations. Texas began issuing REAL ID compliant credentials on October 10, 2016. Texas DLD requested \$700,375,324 for FY2020-FY2021 biennial budget to support the program, but only \$490,644,346

(70.1%) was appropriated by the Legislature³ (TxDPS 2018, Texas Legislature 2019). Table 3 lists the comparison of three states.

Table 3. Comparison Table with Peer States

	Texas	Florida	New York State
Agency Managing DLD	Texas Department of Public Safety (TxDPS)	Florida Department of Highway Safety and Motor Vehicles (FLHSMV)	New York Department of Motor Vehicles (NYDMV)
Vehicle Registration	TxDPS does not provide this service	FLHSMV provides this service	NYDMV provides this service
Population in 2018	28.7 million	21.3 million	19.54 million
Number of state-issued DL and ID cards*	23.7 million	17.4 million**	12.0 million**
Number of counties	254	67	62
Number of field Offices	230 DLOs + 1 CDL testing-only location	208	129
Number of FTEs	2,900 (DLD)	1,292.5 (Motorist Service)	2,344 (NYDMV)
Biennial Budget	FY2020 –FY2021 \$490,644,346 (DLD)	FY2020-FY2021 \$244,288,645 (motorist service)	FY2019 – FY2020 \$666 million (NYDMV)
REAL ID Issuance Date	Oct. 10, 2016	Jan. 1, 2010	Oct. 30, 2017

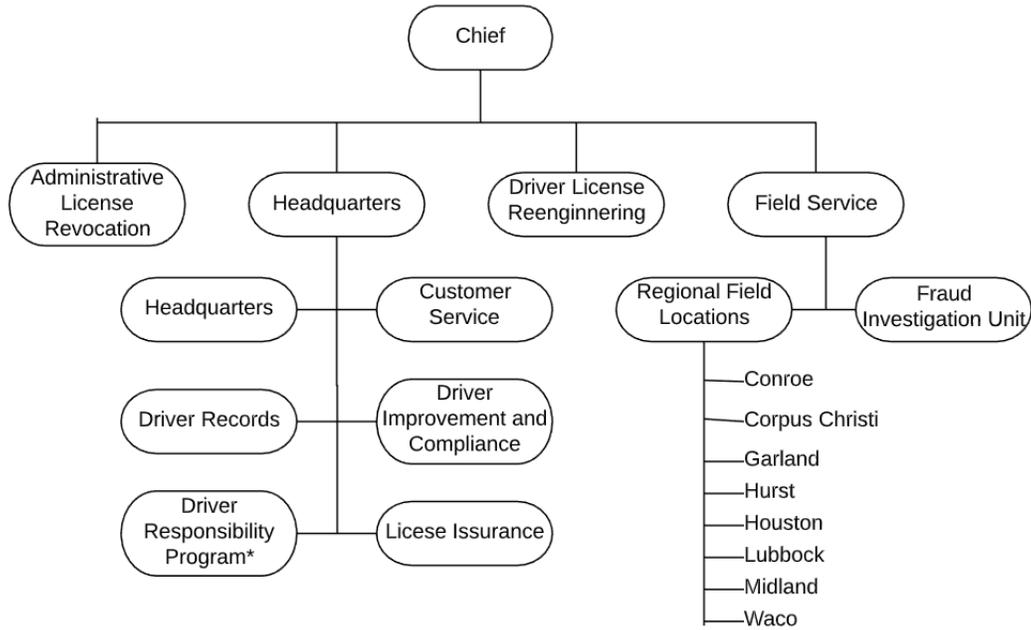
Note: *As of January 1, 2019.

** Number represents DL only. ID card number is not available.

1.3. Basic Information and Statistics of Texas DLD

The FY2007 TxDPS DLD organizational chart was obtained from Sunset Advisory Commission Final Report, which was presented in Figure 2 (Sunset Advisory Commission, 2009).

³ For FY2020 and FY2021, Texas DLD requested \$245,454,978 for Driver License Services and \$34,886,332 for Enforcement & Compliance. In addition, an exception request of \$420,034,014 was made to improve driver license services. The Legislature appropriated the requested \$280,341,310 budget for Driver License Services and Enforcement & Compliance. For the exceptional request, only 50% was appropriated (\$210,303,036). To summarize, in total, DLD requested \$700,375,324 for FY2020-FY2021 biennial budget and \$490,644,346 was appropriated by the Legislature.



*Driver Responsibility Program was repealed by the State of Texas (Chapter 708, Transportation Code), effective September 1, 2019.

Figure 2. Texas Driver License Division Organizational Chart (Sunset Advisory Commission, 2009)

The study team noticed that the report was published over ten years ago. A requested of up-to-date DLD organizational chart was made to DPS. DPS provided a chart with numbers of full-time employees (FTEs) in each field, effective October 15, 2019. DPS also mentioned that they were going through an organizational change at the time study team made the request. Therefore, the organizational chart presented in Figure 3 might not represent the finalized chart.

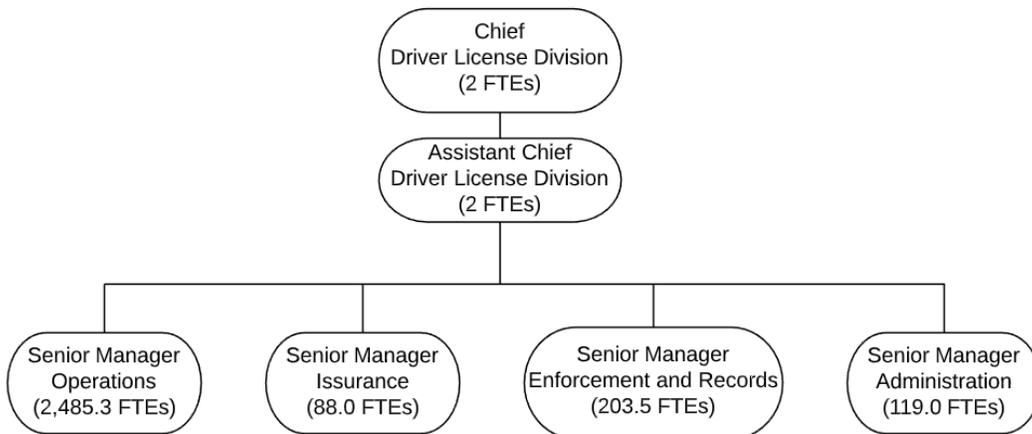


Figure 3. Texas Driver License Division Organizational Chart, effective October 15, 2019

Based on Figure 3, the total number of DLD full-time employee is about 2,900 as of October 15, 2019.

During the relevant literature review process, the study team noticed that several documents list Texas DLD’s goals and performance measurements. These goals and performance measurements are summarized and presented in chronological order in Table 4.

Table 4. Texas Driver License Division Goals and Performance Measurements

Resource	Publish Date	DLD’s Goal
Texas Legislative Budget Board. ‘Department of Public Safety Driver License Improvement Plan.’	January 2013	Reduce driver license office transaction times to 45 minutes for original and 30 minutes for renewals
Texas Sunset Advisory Commission. Texas Sunset Advisory Commission Staff Report with Commission Decisions. 2018-2019 86th Legislature	September 2018	Complete 82 percent of driver license and ID cards applications in 45 minutes
Texas Legislature. House Bill No. 1. General Appropriation Act. 86th Legislature	May 2019	Complete 75% of applications within 45 minutes
Texas Comptroller of Public Accounts. Fiscal Notes. Texas Driver’s Licenses – A customer Service Challenge.	October 2019	Complete at least three-quarters of its driver’s license office transactions within 45 minutes

The study team obtained access to Driver License System (DLS) managed by TxDPS DLD. DLS is serves as a database storing all completed transactions in details, including basic information of customers, types of transactions (e.g., new application or renewal), methods to complete the transaction (e.g. in-person, online, by phone, or by mail), and transaction detail (e.g., DLO location), and etc.

In order to investigate the DLD workload, the study team extracted all transactions completed by DLD from FY2011 to FY 2019 and presented in Table 5 and Figure 4, respectively.

Table 5. Texas Driver License Division Completed Transactions from FY2011 to FY2019

Fiscal Year	Total Completed Transactions	Fiscal Year	Total Completed Transactions
2011	6,364,385	2017	7,306,885
2012	6,586,978	2018	7,451,633
2013	6,889,886	2019	7,694,096
2014	7,123,257	Total	63,393,321
2015	6,992,508	Average	7,043,702
2016	6,983,693		



Figure 4. Texas Driver License Division Total Completed Transactions from FY2011 to FY2019

As can be seen from Table 5 and Figure 4, the number of completed transactions show a steady increasing trend. Approximate 7.7 million transactions were completed in FY2019. During the past 9 years, about 64.4 million transactions were conducted by DLD, with an average of over 7 million every year. In FY2019, Texas DLD also completed 90,332 CDL transactions, including 75,420 original CDL, 8,557 renewal, 3,994 modification, and 2,361 CDL reprint transactions.

In addition, the study team explored the way customers conducted the transactions. Those transactions are categorized as in-person, online, by mail, by phone, and others (e.g. Offender ID Card). The number of each transaction method and corresponding percentage are calculated and listed in Table 6.

Table 6. FY2011 to FY2019 Texas Driver License Division Total Completed Transactions by Transaction Methods

Fiscal Year	In-Person Transaction		Online Transaction		By Mail Transaction		By Phone Transaction		Other Transaction		Total Transaction
	Number	% of Total	Number	% of Total	Number	% of Total	Number	% of Total	Number	% of Total	
2011	5,186,747	81.5%	1,023,544	16.1%	90,060	1.4%	42,287	0.7%	21,747	0.3%	6,364,385
2012	5,211,750	79.1%	1,170,938	17.8%	108,723	1.7%	74,821	1.1%	20,746	0.3%	6,586,978
2013	5,404,059	78.4%	1,266,381	18.4%	106,674	1.5%	87,613	1.3%	25,159	0.4%	6,889,886
2014	5,596,854	78.6%	1,339,203	18.8%	79,617	1.1%	81,169	1.1%	26,414	0.4%	7,123,257
2015	5,532,090	79.1%	1,291,378	18.5%	67,583	1.0%	71,083	1.0%	30,374	0.4%	6,992,508
2016	5,358,977	76.7%	1,441,490	20.6%	85,692	1.2%	67,622	1.0%	29,912	0.4%	6,983,693
2017	5,657,613	77.4%	1,457,579	19.9%	85,109	1.2%	75,771	1.0%	30,813	0.4%	7,306,885
2018	5,682,056	76.3%	1,599,299	21.5%	66,705	0.9%	65,246	0.9%	38,327	0.5%	7,451,633
2019	5,606,024	72.9%	1,912,053	24.9%	59,288	0.8%	75,723	1.0%	41,008	0.5%	7,694,096
Total	49,236,170	77.7%	12,501,865	19.7%	749,451	1.2%	641,335	1.0%	264,500	0.4%	63,393,321
Average	5,470,686	77.7%	1,389,096	19.7%	83,272	1.2%	71,259	1.0%	29,389	0.4%	7,043,702

As can be observed from Table 6, over 95% of the transactions were completed either in-person or online every year. However, the utilization of by mail or by phone is very low (about 1%). On average, during the past 9 years, 77.7% of the transactions were performed in-person, 19.7% were online transactions, 1.2% were by mail, and 1.0% were by phone. The pie chart is presented in Figure 5.

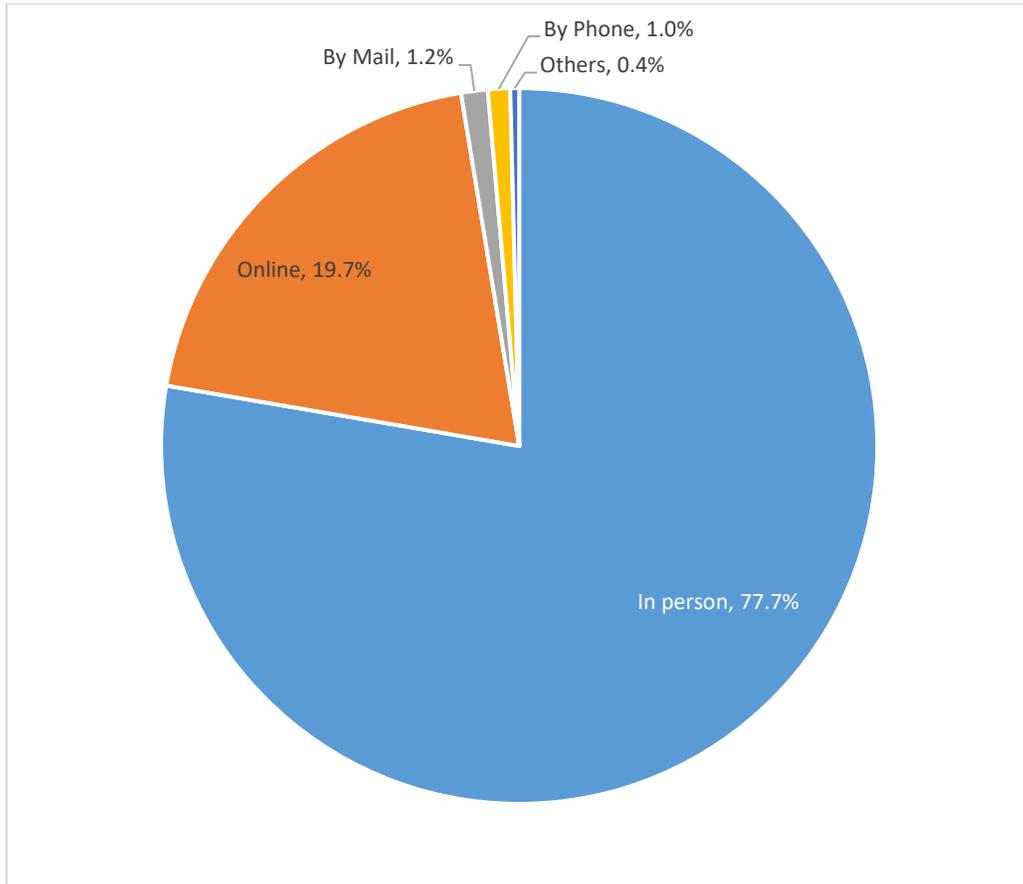


Figure 5. FY2011 to FY2019 Texas Driver License Division Completed Transactions by Methods

Of those 7,694,096 transactions completed in FY2019, 72.9% are in-person, 24.9% are online, 0.8% are by mail, and 1.0% are by phone. The pie chart is shown in Figure 6.

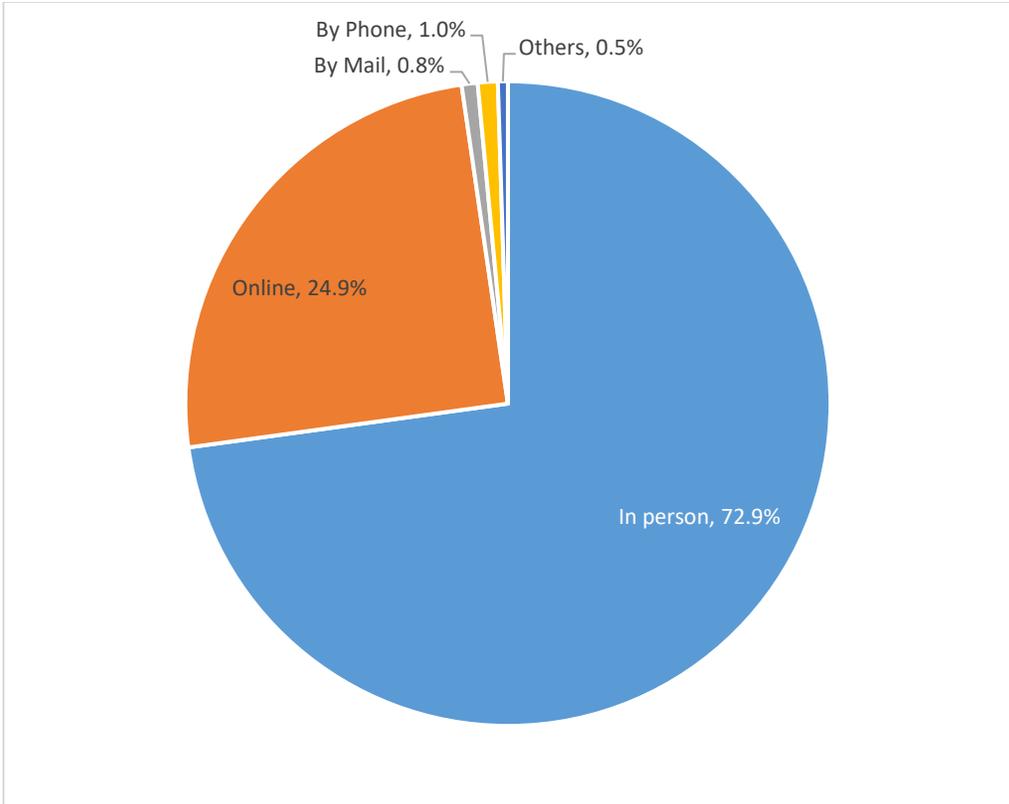


Figure 6. FY2019 Texas Driver License Division Completed Transactions by Method

Figure 7 shows the percentage of online transactions from FY2011 to FY2019.

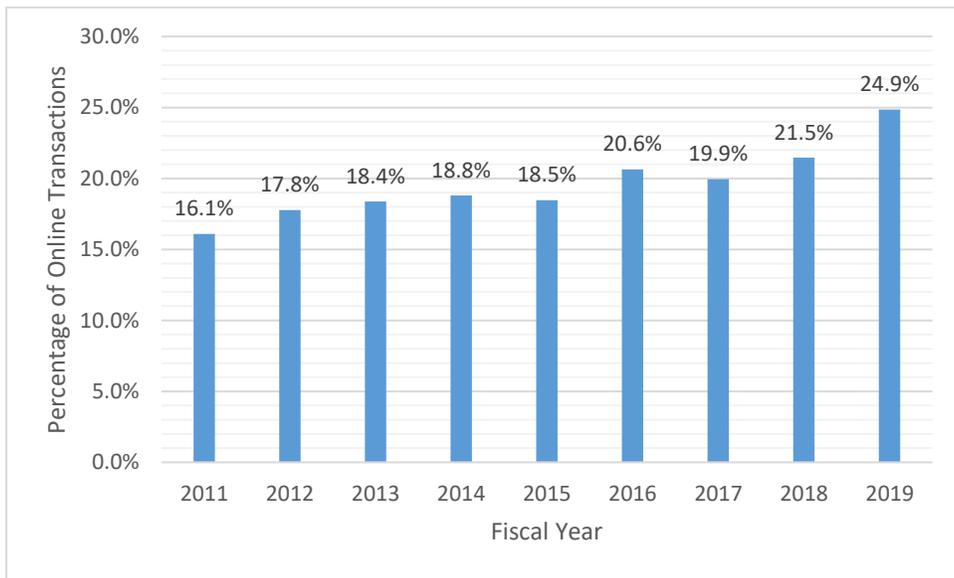


Figure 7. Percentage of Online Transactions from FY2011 to FY2019

Figure 7 presents an increasing trend, indicating that customers are switching to online method more during the past decade. For example, the number changes from 19.9% in FY2017 to 24.9% in FY2019.

Figure 8 and Figure 9 present the percentage of by mail transactions and by phone transactions from FY2011 to FY2019, respectively.

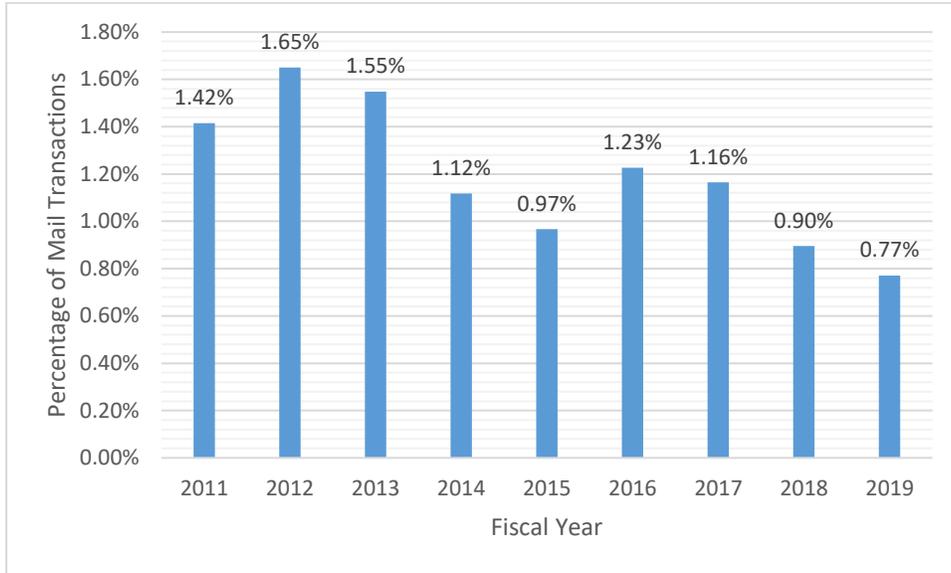


Figure 8. Percentage of Mail Transactions from FY2011 to FY2019

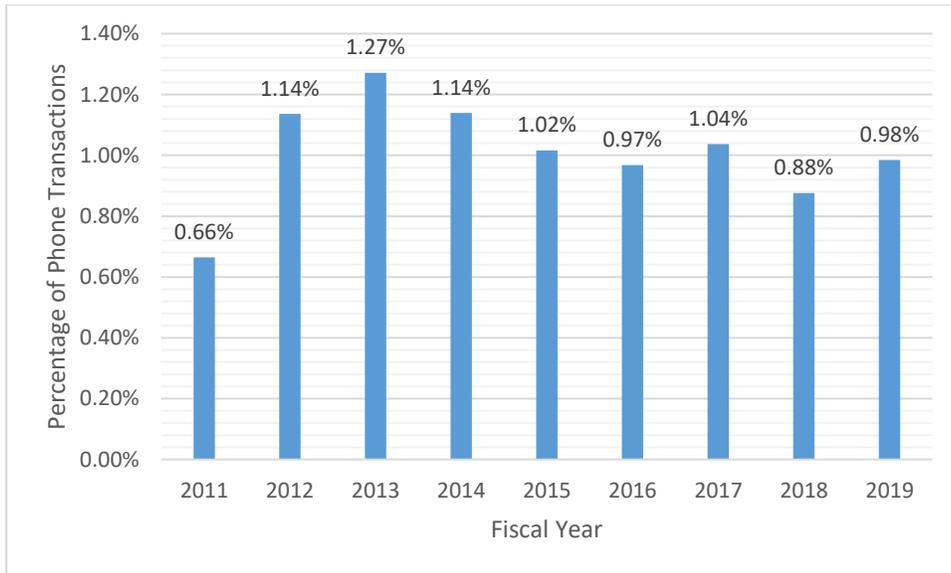


Figure 9. Percentage of Phone Transactions from FY2011 to FY2019

Figure 8 shows a decreasing trend (especially starting from FY2016), which implies that customers are becoming less in favor of conducting transactions by mail.

Figure 10 presents the combine percentage of transactions conducted online, by mail, and by phone.

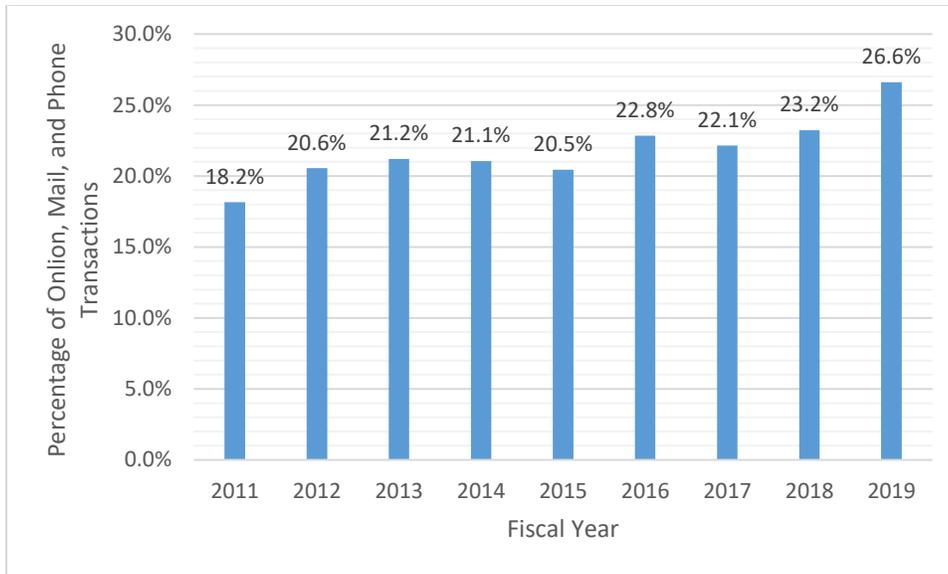


Figure 10. Percentage of Online, Mail, and Phone Transactions from FY2011 to FY2019

An increasing trend is observed from Figure 10 due to the fact that more customers are using online transactions as an alternative way of in-person transaction (Figure 7).

The study team also obtained the ‘Facilities Master List’ from TxDPS which contains detailed information on DLD offices and testing locations, size, whether it is a CDL test site, whether it is equipped with Kiosks, and other details. The study team performed a preliminary analysis of this database. The ‘Facility Master List’ was updated August 1, 2019. Therefore, all the analyses below are as of August 1, 2019.

There are in total 233 locations in the database. However, 2 of these (Houston Region Headquarters and Webster) are marked as neither a driver license office (DLO) nor a testing location; further these two locations do not appear in the DPS online tool for finding a ‘Driver’s License Office nearest to You’. Therefore, the analyses below are based on 231 DLO and testing locations (1 location is for Commercial Driving Testing only – Canton CDL).

Of the 231 DLO and testing locations, 89.6% (207) provide non-commercial driving tests; 13.4% (31) provide commercial driving tests (28 provide both commercial and non-commercial driving test and 3 provide only commercial driving test); 9.1% (21) provide neither tests.

According to the database, 72.7% (168) of 231 locations are categorized as small; 13% (30) are categorized as medium; 7.8% (18) are large; and 6.1% (14) are mega centers: Carrollton, Corpus Christi, Dallas South, Edinburg, Fort Worth, Garland, Houston Gessner, Houston North, Houston Southeast, Leon Valley, Midland,

Pflugerville, Rosenberg, and Spring. One location is marked as N.A. since it is a test site only (Canton CDL). The pie chart is presented in Figure 11.

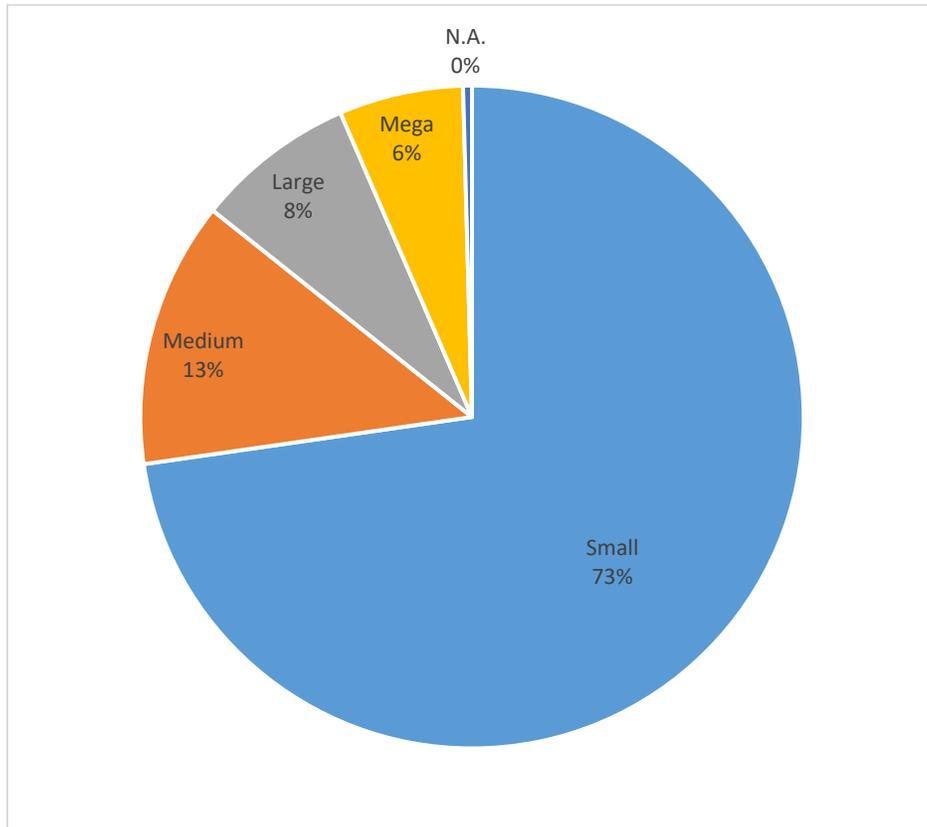


Figure 11. Texas Driver License Pie Char by Size

AS of August 1, 2019, a total of 73 DLOs (31.6%) are equipped with Kiosks that comprise the NEMO-Q queuing system. The rest 68.4% DLOs do not have such queuing systems. The NEMO-Q queuing system helps to manage and improve customer experience and waiting experience. By self-service, customers will be issued a numbered ticket based on transaction type. The system also creates a database that stores all the transaction data categorized by service type (e.g., original DL or ID card application or renewal) and customer type (e.g., in person, by phone, or online). At some locations, it creates either one or two queues of customers based on transaction type. The system provides information to TxDPS regarding the wait time and transaction time. Both walk in customers and customers scheduled online (arrive at appointed time) will get a numbered ticket with timestamp. Estimated wait time can be printed on the ticket as well so that the customer knows the progress of queue. Since not every DLO has a NEMO-Q system, there is no information available from those offices about arrival, wait and processing times.

However, current NEMO-Q system is a same-day-only appointment system and not able to capture customer pre-queue time, which is the time between arrival and check in with the kiosks. In order to improve this, DLD is planning to replace NEME-Q with a new appointment system developed by Applus Technologies, Inc. (Applus Technologies, 2019). The new system is an appointment-based system which gives the customer more flexibility to make appointments up to six months in advance either online or on site at DLO. Customers have the option to use a self-serve kiosk at DLO to schedule an appointment for a different day and/or at a different office. The new appointment solution will conduct an eligibility check with the Driver License System (DLS) to determine transaction eligibility. If applicable, the system will inform online eligible customers that they may conduct their transaction online and avoid visiting an office. Customers without an advance appointment will be permitted to see if the office has an opening as a “standby”. To summarize, the new system:

- Is expected to minimize extended wait times and long lines as customers will only need to arrive shortly before their appointment time
- Is designed to prevent delays in calling/displaying customer numbers, allow DLD to send messages to customers about delays/closures due weather or unforeseen circumstances
- Provides real-time and historical appointment data that will provide DLD greater accuracy in forecasting customer demand and resource requirements
- Allows DLD to customize customer arrival times, which will assist offices with overcrowding and allow offices to better manage the customer flow.

The new system will be installed at all DLOs

1.4. Chapter Conclusion

This chapter provides a basic description and statistics about the DPS DLD and DLOs in Texas. In addition, information was provided about the state agency that manages the operation of the driver’s license program in other U.S. states. A brief comparison summary was given regarding Driver License Program of Florida and New York State, which are considered as peer states to Texas

Chapter 2. Literature Review

The study team collected papers and articles associated with DLD service wait time. During the gathering process, we found that most of the literature came from news articles. We summarized the literature cited and the major findings from each selected item.

2.1. Literature Review

Friedman, Scott. "How Can Texas Reduce Driver License Lines?" NBCDFW. August 6, 2012. <https://www.nbcdfw.com/news/local/how-can-texas-reduce-driver-license-lines/1926415/>. Accessed on January 10, 2020.

Texas only counts wait times once the number is taken from the machine so there is uncounted wait time in lines leading up to service. This period tends to be the most strenuous of waiting as it is typically outside or with no seats. Indiana had similar problem but fixed it by approaching it with customer service point of view. They hired management from retail stores and provided incentives for DMV workers like increased pay and alarms if wait times were longer than 20 minutes.

Texas Department of Public Safety. Driver License Division. FAQs about the Driver License Division. Online reference. Available at: <https://www.dps.texas.gov/DriverLicense/FAQs/dldIndex.htm#FAQs>. Accessed on February 7, 2020.

According to the TxDPS website, more than 50% DL transactions could have been conducted alternatively (online, by mail or by phone) in both FY2017 and FY2018. In fall 2018, Texas.gov conducted a marketing study through Deloitte and found that 91% of customers choose to conduct their transactions in person even though they are aware of the ability to renew their license online. The top reasons are:

- 22% - To update their photo
- 19% - Do not want to disclose sensitive information online
- 19% - More comfortable speaking to a person
- 14% - Do not want to pay online convenience fees
- 14% - Do not want to pay additional fees to conduct a transaction online (assume the transaction fees online are higher than in person transactions).

Texas Comptroller of Public Accounts. Fiscal Notes. Texas Driver's Licenses – A customer Service Challenge. October 2019. Online reference. Available at: <https://comptroller.texas.gov/economy/fiscal-notes/2019/oct/license.php>. Accessed on February 11, 2020.

According to the Fiscal Notes from Texas Comptroller of Public Accounts, about 23.7 million Texans hold a Texas driver's license or a DPS-issued identification card. In FY2018, nearly 7.5 million transactions were completed by DPS' Driver License Division involving licenses and identification cards, including issuance, renewals, and replacements, 5.9 million of which were face-to-face transactions (Texas Comptroller of Public Accounts 2019).

The article pointed out that DPS' goal is to complete at least three-quarters of its driver's license office transactions within 45 minutes. Despite the creation of several large driver's license "mega-centers" in urban areas to meet demand, average wait times continue to rise and the agency fails to meet this target.

In addition, DPS operates a statewide license call center that receives more than 24,000 calls a day or nearly 7 million each year. However, its performance has declined. In 2009, customers need to wait for an average of 13.5 minutes before they were served, and 65 percent of callers gave up before their calls were answered. In 2017, these numbers increased to 14 minutes and 20 seconds for average on-hold wait time, and 80 percent of callers gave up before DPS answered.

DPS thinks these difficulties mainly caused by population growth and inadequate staffing. In January 2019 testimony before the Texas Senate Finance Committee, DPS Director Steve McCraw said the problem could be solved by additional staffing in driver's license offices; increased funding for staff salaries to retain trained personnel; and an extension of the driver's license expiration period. McCraw also said that "53 percent of the people who come to the [DPS driver's license] office don't need to be there", pointing out that many driver's license customers are not taking full advantage of the services DPS offers by mail, telephone or online.

In 2011, Driver License Improvement Plan (DLIP) was established by the Legislature with initial funding of \$64.1 million. By the end of fiscal 2019, total DLIP appropriations through four legislative sessions had reached \$443.1 million, which is presented in Figure 12.

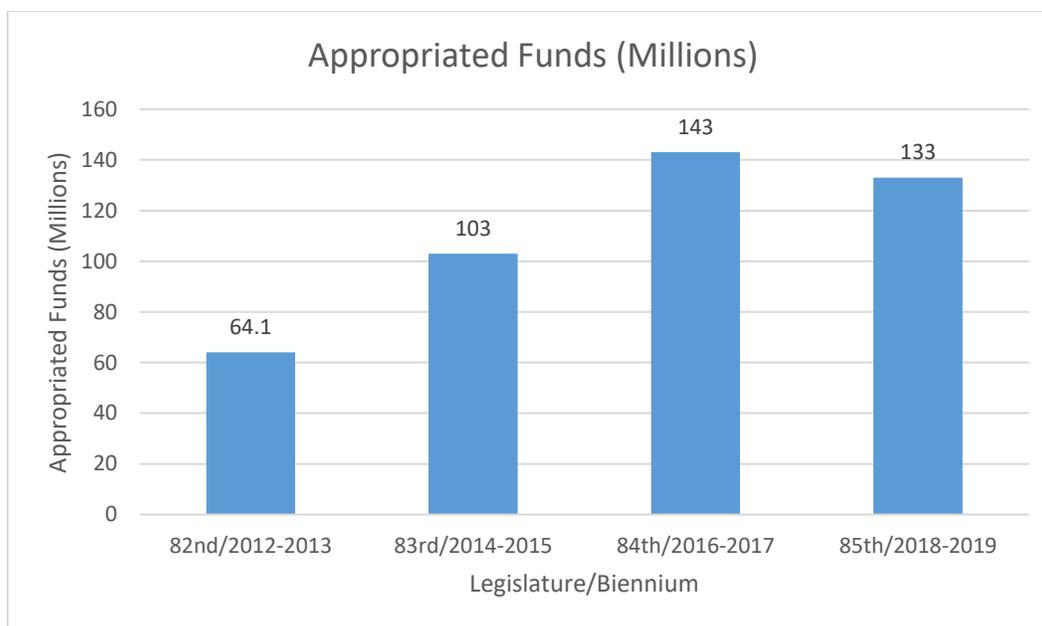


Figure 12. Texas Driver License Improvement Plan Appropriated Funds by Legislature/Biennium

DLIP funding has been used primarily to create and expand driver’s license offices and to hire new employees to staff them. Table 7 lists the expenditures of DLIP funding from FY2012 to FY2019.

Table 7. Texas Driver License Improvement Plan Expenditures, FY2012 - FY2019

Legislature/ Biennium	Mega- centers opened	Other offices opened	Offices Relocated/ Remodeled	New Office Staffing*
82ND/2012-13	6	2	32	361.0
83RD/2014-15	3	8	14	16.0
84TH/2016-17	4	18	40	170.3
85TH/2018-19**	0	0	0	0
TOTAL, FISCAL 2012-2019	13	28	86	547.3

* Full-time-equivalent employees.

** Reflects agency budget cuts in the 2018-19 biennium.

As can be seen from Table 7, of 41 new driver’s license offices opened between fiscal 2012 and 2019, 13 were mega-centers, each designed to process at least 2,000 transactions per day with 25 or more staff members. DPS closed two driver’s license offices during the 2018-19 biennium due to a directive from state leaders calling for agency budget cuts.

The DPS Sunset bill (Senate Bill 616) was signed into law in June 2019. This new law fulfills one DPS recommendation by extending driver’s license expiration dates

from six to eight years, effective June 1, 2020. It also requires a third-party study on the feasibility of transferring DPS' driver's license program to TxDMV. The Legislature thinks that TxDMV already "has a division dedicated to consumer relations and receives high customer satisfaction ratings."

The Fiscal Notes also stated that Texas certainly is not alone in its efforts to improve service in its driver's license offices; many other states are facing the same problems, especially to comply with the REAL ID requirements and meet the October 2020 deadline. Some efforts made to reduce customer wait times include increased staffing, online service options and extended expiration dates (Effective June 1, 2020). Other potential options adopted by other states that could potentially be useful to Texas are: Saturday office hours (Alabama) – allowing customers to visit without taking time off from work; mobile stations (Kansas) - established summer-only driver's license stations in temporary offices such as schools specifically to serve teens; and technological upgrades (e.g., Pennsylvania) - adopted new technologies and re-engineered their business processes for driver's license issuance.

Deloitte Consulting LLP. Texas Department of Public Safety: Management and Organizational Structure Study. October 28, 2008. Available at: www.dps.texas.gov/director_staff/public_information/Deloitte102808.pdf. Accessed on January 30, 2020.

Deloitte Consulting LLP performed a management and organizational structure study for TxDPS in 2008. In the reports, they provided several recommendations and listed several major findings regarding Driver License and Regulation:

- It was recommended to combine licensing and regulation functions into one customer-focused License and Regulation Division. In addition, Deloitte proposed one organizational chart;
- It was recommended to establish a non-commissioned management and staffing structure for the License and Regulation Division, and reassign law enforcement officers from regulatory operations into other DPS divisions as appropriate:
 - It was found that the current use of DL troopers may not be the most optimal, cost-effective use of commissioned officer resources
 - It was found that fraud-related functions exist in the DLD today, but could be split between civilian and commissioned employees in the future, and could be split between the DLD and a commissioned investigations unit in the future
 - It was found that some DLOs may require security personnel

- It was found that DLOs that have a large end-of-day cash deposit may require security personnel or a law enforcement officer in order to support the daily deposit process
- It was recommended to provide the DL field staff with an information system that enables them to easily determine a driver's status, verify identify, and complete the customer service transactions
- It was recommended to improve training in customer service, driver license program requirements, supervision, and management
- It was recommended to create job definitions and performance measures for the new structure, creating a balance between safety, security, and service
- It was recommended to determine the security requirements for each facility and use appropriate commissioned support from Highway Patrol to provide security
 - It was found that different offices may have different security needs
 - It was found that the benefits of arrests at DLOs may be overstated
 - It was found that driver license facilities handle a large amount of money each day, and the deposit into a bank may require security
- It was recommended to upgrade existing facilities and/or expand the total number of facilities to meet current population needs
 - It was found that over the years, the Texas' population has risen steadily, yet the number and square footage of customer-service facilities may not have kept pace
 - It was found that several DLOs need significant repair; most offices need to be refreshed with paint, new furniture, updated flooring, and other improvements to provide for a more pleasant customer experience
 - It was found that many DLOs would benefit from a customer-flow analysis and redesign of the facility layout
 - It was found that there does not appear to be a model office configuration for selecting and planning new locations
 - It was found that lack of driver license facilities co-location with TxDOT offices requires customers to make multiple stops.
- It was recommended to set citizen-customer service expectations and communicate those to the public
 - It was found that rules and policies for citizen using driver licensing are inconsistent or not well communicated

- It was recommended to improve telephone support through a fully staffed toll-free call center
 - It was found that the DLD experiences a high number of dropped or non-serviced calls in the call center
 - It was found that a centralized driver license help desk and call center is needed for filed users and law enforcement officers
- It was recommended to build a self-service infrastructure, including expanding Internet services, to improve citizen-customer service and minimize wait times in the office
 - It was found that DPS provides only limited driver license services and transaction capability online
 - It was found that DPS' new Driver License Renewal (DLR) system can provide a foundation from which to build additional on-site capability
 - It was found that additional basic customer service functions could be deployed in the near term, separate from the DLR implement effort
- It was recommended to develop a robust audit and journaling capability to detect anomalies that could indicate internal fraud
- It was recommended to identify specific citizen-customer segments for their special service needs, including teenage drivers, elder drivers, and drivers with English as a second language

Texas Sunset Advisory Commission. Texas Sunset Advisory Commission Final Report. July 2009. Online reference. Available at: https://www.sunset.texas.gov/public/uploads/files/reports/Department%20of%20Public%20Safety_Private%20Security_Polygraph%20Examiners%20Final%20Report%202009%2081st%20Leg_0.pdf. Accessed on February 10, 2020.

Texas Sunset Advisory Commission July 2009 Final Report gave an overall introduction of Texas DLD. As of FY2007, DLD has 1,667 employees, including 215 commissioned officers and 1,452 noncommissioned personnel. The FY2007 budget is \$104 million. In total, there were 16,330,825 valid licensed drivers in Texas in FY2007. On average, Texas DLD issues 5,099,748 driver licenses and 759,725 identification cards every year.

As of FY2007, there are 256 DLOs across the state, whose major responsibilities are to “accept and review driver license and identification card applications, and to test new applicants on both written and driving tests”. Field Service also operates a DL mobile unit that can process simple remote transactions such as renewals and duplicate licenses. DPS also applies auto-queuing systems in high volume locations

(e.g., Gessner Road office in Houston) where customers receive numbers upon arrival and are directed to the appropriate customer service station.

Trained troopers present in DLOs to detect fraud associated with driver license issuance, perform road tests on applicants, provide security, and also make frequent arrests of applicants with outstanding criminal warrants who attempt to get licenses. In 2007, 1,673 felony arrests and 4,809 misdemeanor arrests were made by DL troopers on DLO premises. DL troopers also supplement the Highway Patrol's efforts in traffic law enforcement 16 hours per month, during holidays, and during daily commutes to and from duty stations. In 2007, DL troopers issued 18,216 traffic tickets and 7,377 warnings while on patrol.

DL Headquarters Service supports driver license in four functions:

- Customer service: assists the public and field service personnel in driver license and records matters. Every month, DPS handles over 70,000 customer service calls and over 6,000 e-mails. During business hours, customer service staff answers the DPS main telephone switchboard.
- Driver improvement and compliance: evaluate certain traffic convictions involving Texas drivers to identify potentially dangerous drivers and take corrective action that may result in license revocation
- License issuance: verifies an applicant's eligibility to be issued a Texas driver license or identification card before mailing; monitors the production, quality, and automated mailing of driver licenses and identification cards; assisting the public and DL field offices with administrative and technical issues.
- Driver records: administers, processes, and maintains records on all DL and ID issued by the Division. The Driver Records Bureau's responsibilities are:
 - Maintain microfilm records for each DL or ID
 - Update traffic conviction information on each record
 - Sell driver records and certifications to eligible requestors including insurance companies and the general public

In addition, Headquarters Service oversees special projects to implement process changes within the Division, such as reengineering projects.

Headquarters Service also manages the commercial driver license (CDL) program. In FY2007, Texas had more than 767,000 CDLs: 543,557 Class A CDLs (tractor trailer vehicles with 18 wheels), 211,777 Class B CDLs (small combination units where a truck pulls a certain type of trailer), and 12,264 Class C CDLs (small delivery vehicles).

Driver Responsibility Program was established by the Legislature to prevent the repeated behavior of problem drivers and to improve traffic safety through the assessment of surcharges for various traffic violations. The agency retains 1 percent of surcharges collected with the remainder divided between state trauma centers and the General Revenue Fund. Since inception in September 2004, the program has exceeded \$1 billion dollars in total assessments to more than 1 million drivers. This Program used to be managed by DLD. However, the State of Texas has repealed the Driver Responsibility Program (Chapter 708, Transportation Code), effective September 1, 2019.

Texas Sunset Advisory Commission. Texas Sunset Advisory Commission Staff Report with Commission Decisions. 2018-2019 86th Legislature. September 2018. Online reference. Available at: <https://www.sunset.texas.gov/public/uploads/files/reports/Department%20of%20Public%20Safety%20Staff%20Report%20with%20Commission%20Decisions%209-10-18.pdf>. Accessed on February 11, 2020.

According to the report, DLD is the division within TxDPS program the public interacts with the most. About 20.3 million Texans held a Texas driver license and another 3.2 million held a state-issued ID. In FY2017, TxDPS spent more than \$149 million on its driver license and identification services and allocated 2,087 staff to the program. DPS collected almost \$405 million in various driver license fees in FY2017.

A major workload for TxDPS is to manage the demand for driver license and ID services. Based on the report, DPS issued 3.5 million driver licenses and 603,000 IDs in FY2017. The department's call center receives about seven million phone calls annually regarding topics such as documents required for licensure, suspension and reinstatement of licenses, and fines. The call center is open from 7 a.m. to 6 p.m. Monday through Friday and has about 84 staff answering calls daily.

The report summarized the Sunset Commission's decisions on the staff recommendations for the TxDPS as well as modifications and new recommendations raised during the public hearing. More specifically, the following issue and findings associated with DLD has been reported:

Issue: DPS has not maximized its resources to adequately improve driver license customer service.

Finding #1: Driver license customer service continues to struggle at DPS despite dedicated and hardworking staff.

The commission found that despite significant financial investments made by the Legislature to improve this program, wait times at DLOs and the call center have continued to increase – more than an hour at several large offices (The average wait is likely to be even longer because the office sometimes gets so crowded customers must wait outside the building before being able to check in to the queuing system).

For example, the average wait time at Houston-Gessner DLO is 71 minutes in FY2017; and the wait time at Leon Valley almost tripled from FY2015 to FY2017. The report provided the average wait time at 9 driver license megacenters from FY2015 to FY2017, as shown in Table 8. In addition, just 20 percent of the 24,000 daily phone calls being answered. Sunset staff also said that they have heard numerous complaints about long waits to take a driving skills test at DLOs, more than three months in some cases.

Table 8. Average Wait Times at NineTxDPS Driver License Megacenters (in hh:mm)

Megacenter Location	FY2015	FY2016	FY2017
Dallas – South	-	0:59	1:18
Fort Worth	0:51	1:05	1:06
Garland	0:55	0:56	1:29
Houston - Gessner	1:16	1:14	1:11
Houston - North	-	0:24	0:41
Leon Valley	0:26	0:43	1:10
Pflugerville	0:17	0:43	0:43
Rosenberg	0:42	0:45	0:38
Spring	1:01	1:23	0:51

The report claimed that DPS failed to meet its key driver license performance measure – completing 82 percent of driver license and identification card applications within 45 minutes. Driver License Improvement Plan was initiated and the Legislature has invested significant funding in it, the appropriation of which has been presented in Figure 12.

Finding #2: Within a law enforcement agency, the driver license program cannot compete with public safety priorities.

The report stated that “The department appropriately prioritizes preventing and combating crime over more administrative functions like issuing driver licenses”. Sunset Staff think that DPS’ approach to providing funding and technology shows the lower priority DPS places on its driver license program:

- Transferred and unspent funds: the report says that DPS has a history of transferring money out of its driver license program to fund other duties. From FY2012 to FY2016, DPS transferred out a net amount of more than \$8 million from its driver license strategies. In order to prevent DPS from transferring funds without written permission, the Legislature “locked” the driver license goal in DPS’ appropriations bill pattern for the 2018-2019 biennium. In a 2017 report, the Legislative Budget Board (LBB) wrote that DPS could not show that all of the funding it received to improve driver license services was actually spent on that purpose. In addition, the driver

license program left \$8 million unspent in FY2017 and returned it to the state to help DPS meet the 4 percent budget cut applied to all state agencies that year.

- Lack of key technology:
 - DPS' call center does not have customer relationship management software, which makes DPS struggle to most effectively target information on its website to address common questions.
 - DPS' interactive voice response system is not integrated with the Driver License System that holds customers' records - customers cannot actually make any transactions on their own and must still speak with staff or visit a DLO
 - Self-service kiosks: customers cannot use these kiosks for transactions such as renewing licenses, freeing up staff to help customers with more complex transactions. Customers can only use them to check in and establish their place in the waiting queue at Texas DLOs
 - Helpful driver license information is difficult to find on DPS' website

Finding #3: The department has not implemented plans to close or consolidate driver license offices with low demand.

The report says that “DPS and others recognize that smaller driver license offices tend to be less efficient”. DPS partnered with Texas State University in 2011 to help inform a plan to more efficiently locate driver license offices across the state. This study evaluated DLOs for potential closure based on several criteria, including number of transactions, drive time, and population. A list of 26 DLOs has been identified as primary potential closures stating that these resources could be made available to other locations where they could have a positive impact on a greater number of customers. Sunset staff reported that DPS closed six of these offices, not as a proactive measure to better allocate resources, but mostly due to equipment failure and no available replacement.

TxDPS, in its 2017 Driver License Improvement Program Annual Report, recognized that reallocating employees from offices that serve few customers to offices with more demand could be an option to increase capacity if no more additional staff can be hired. DPS currently has 77 one-person offices, almost half of which had fewer than 1,500 transactions in fiscal year 2017 and of those, 20 had fewer than 1,000 transactions. These one-person DLOs will close any time the assigned customer service representative is sick or on vacation. Therefore, according to the report, they have been identified as problematic by DPS

Finding #4: Most states administer driver license programs through an agency like the Texas Department of Motor Vehicles.

The report claimed that “The Texas Department of Motor Vehicles has a division dedicated to consumer relations and receives high customer satisfaction ratings.” The Sunset staff identified several efficiencies and benefits to customers from having both driver license and motor vehicle functions in one agency – they carefully considered whether to recommend transferring driver licensing from DPS to TxDMV.

Correspondingly, the following recommendations have been made:

Recommendation #1. Require DPS to develop and implement a plan to close inefficient driver license offices.

The Sunset Staff believes that closing low volume offices would make more resources available for allocation to other offices where they could serve a greater number of customers and best impact customer service. This recommendation would require DPS to develop and implement a plan to better maximize its driver license offices and resources across the state, considering geographic distribution. The Sunset Staff recommended DPS consider setting a standard for minimum distance between offices as well as a standard for minimum volume of business to keep an office open unless located in a rural area without reasonable access to other such offices.

Recommendation #2. Direct the Department of Public Safety and Texas Department of Motor Vehicles to perform a joint analysis on opportunities and challenges of transferring the driver license program to TxDMV.

Contingent upon funding, direct DPS to contract with an independent third party to perform an analysis and make recommendations on opportunities and challenges of transferring the driver license program to TxDMV. The independent third party shall coordinate with TxDMV and any other pertinent organization to assist in this analysis. A report with the analysis and recommendations will be due to the Sunset Commission, legislative leadership, and the governor by September 1, 2020.

The driver license program shall be transferred to TxDMV effective September 1, 2021 if the 86th Legislature does not appropriate money to DPS to fund the third party analysis. In preparation for the transfer:

- DPS shall provide TxDMV access to any information, systems, records, property, staff, or data necessary for the transfer;
- DPS and TxDMV shall establish a working group to develop a transition plan containing milestone and deliverable dates, and provide at least quarterly reports to the Sunset Commission, governor, and legislative leadership; and

- TxDMV shall study how it can use existing state and local property and staff (with intergovernmental agreements as necessary) to most effectively administer the driver license program. For this study, TxDMV should prioritize cost savings, efficiencies, and accessibility for Texans across the state, including in rural parts of the state. DPS should assist in this study, as necessary.

Texas Legislative Budget Board. ‘Department of Public Safety Driver License Improvement Plan. January 2013’ Online Reference. Official website of Texas Legislative Budget Board. Available at: [http://www.lbb.state.tx.us/Documents/Publications/Issue Briefs/409 DPS DL %20Improv.pdf](http://www.lbb.state.tx.us/Documents/Publications/Issue%20Briefs/409%20DPS%20DL%20Improv.pdf). Accessed on February 6, 2020

In order to improve services and shorten wait times for driver license customers, TxDPS developed a Driver License Improvement Plan. The Texas Legislature appropriated \$63 million and 361 full-time equivalents for this purpose in the 2012–13 biennium. The expected outcomes of this plan are:

- Customer Service: Reduce driver license office transaction times to 45 minutes for original and 30 minutes for renewals. Reduce contact center calls by being clearer in correspondence and website information. Improve customer satisfaction with an online survey. Make process changes in accordance with customer feedback.
- Safety and Security: Increase fraud prevention with security features on driver license and identification cards.
- Employee Environment: Improve retention programs by increasing salaries of field employees and realigning position descriptions. Provide management leadership training for staff with the intent of improving employee retention and maximizing productivity.

Florida Highway Safety and Motor Vehicles. Florida Licensing on Wheels (FLOW). Online reference. Available at: <https://www.flhsmv.gov/locations/florida-licensing-wheels-flow/>. Accessed on February 25, 2020.

The Florida Department of Highway Safety and Motor Vehicles (FLHSMV) offer 13 mobile units to make service more accessible to customers, which also release the burden of field offices and reduce customer wait times. Customer can renew a driver license, obtain a replacement driver license, change a name or address on a driver license, get an identification card, renew a vehicle registration, and purchase a specialty license plate. These mobile units also offer FLHSMV’s critical safety services such as emergency contact information registration and safety campaigns by the Florida Highway Patrol. However, no written or driving tests are given from mobile units. Of the 13 mobile units, seven provide services out of a large bus,

making them great for large and outdoor events; six mini-FLOW are set up at a table, which accommodates smaller venues and indoor events. The photo of mobile units are presented in Figure 13.



(a). Florida Licensing on Wheels (FLOW) – Large Bus



(b). Florida Licensing on Wheels (FLOW) - Table

Figure 13. Florida Mobile Units - Florida Licensing on Wheels (FLOW)

FLHSMV also provides online calendar of these mobile units so that customers can check the future location up to one month. In addition, customers can request a FLOW online as well.

California DMV. DMV Announces New Efforts to Reduce Wait Times. August 7, 2018. Online Reference. Accessed on January 31, 2020. Available at: https://www.dmv.ca.gov/portal/dmv/detail/pubs/newsrel/2018/2018_63.

Due to increased demand in the federal compliant REAL ID driver licenses or identification cards, customers have experienced longer-than-expected service times. The California DMV took a number of additional actions — including redirecting 240 employees from the DMV headquarters and staff from other state agencies and departments— to combat rising wait times at field offices.

The department also used a variety of additional options to reduce wait times. Some of the timesaving solutions include:

- Piloting a text notification option. If a customer provides their cell phone number when they check in, they can receive a text message shortly before their service number is called. This provides flexibility so they do not have to wait inside a field office.
- Piloting self-check-in kiosks. Customers with appointments can bypass the “Start Here” window and use a kiosk to instantly receive their service number.
- Expanding DMV Now Self-Service Terminals: DMV will add the self-service vehicle registration renewal kiosks to 10 additional field offices. Later in 2018, the department planned to expand to 50 additional grocery store locations, bringing the statewide total of DMV Now Self-Service Terminals to 160.
- Saturday service expansion: The DMV expanded Saturday service to 60 field offices on August 4, 2018. Offices are open every Saturday from 8 a.m. to 5 p.m. Find a location on the Saturday Service webpage.
- Early office hours: The DMV began offering extended hours at 14 field offices on July 16, 2018. The offices open at 7 a.m. four days a week. They continue to open at 9 a.m. on Wednesdays and close at 5 p.m. daily.

Brown, E.G., Brian C. Annis, and Bill Davidson. Report to the Joint Legislative Budget Committee of the State of California: Department of Motor Vehicles Monthly Status Update Report. California DMV. January 4, 2019. Online reference. Available at: https://www.dmv.ca.gov/portal/wcm/connect/c23f9fc5-57fc-4348-881b-1ac302cafcaa/JLBC_December_2018.pdf?MOD=AJPERES&CVID=. Accessed on January 31, 2020.

California DMV has been committed to reducing statewide wait times (combined queue and pre-queue), especially since REAL ID cards have been produced since the program began on January 22, 2018. As of December 2018, more than 2.45

million REAL ID driver license and ID cards have been produced and issued. Effective actions California DMV took include:

- Hiring new employees: As of December 31, 2018, the following job offers have been made since July 1, 2018: 946 Civil Service Appointments made (561 have already started); 680 Emergency Hires made (469 have already started); 141 Retired Annuitants hired (128 have already started). The new hires filled the authorized positions for REAL ID and positions in field offices that have become vacant through transfers, promotions, and retirements.
- Observe absenteeism: California DMV established an Absenteeism Task Force to look into the reasons why staff are absent from work and identify strategies to reduce the department's absenteeism rate, which was defined as the total number of staff who have an unscheduled absence, divided by the total number of staff on schedule on any given day. In December 2018, the absenteeism is 6.4%.
- Continue adding self-service vehicle registration renewal kiosks: Four new kiosks were installed in November 2018 in grocery stores in Oxnard, Victorville, Lancaster, and Bakersfield. These terminals allow customers to renew their registration and receive their tags on site. With the addition of these 4 new self-service kiosks, there are now 152 kiosks statewide as of December 2018: 70 in DMV field offices, 77 retail locations, 3 libraries, 1 at UC Irvine and 1 in City Hall in Mendota. The department plans to add 25 more kiosks in 2019.
- Continue improving process:
 - Lean Six Sigma process: In October 2018, the San Jose Driver License Processing Center (DLPC) became the first office to implement a new document review process as its operational standard. This process includes the prescreening of documents such as birth certificates, passports, residency, and social security cards while customers wait for their queue number to be called. When the applicant arrives at a technician window, this document review is already complete and reduces the transaction processing time. In November 2018, the Stanton DLPC implemented this model. The Granada Hills DLPC and Hollywood-Cole field office both adopted this as their operational standard in December 2018. In the month of January 2019, the Pasadena field office became the fifth office to implement this process. The pilot effort revealed that this model of document pre-screening is most effective in those offices whose primary workload is driver licensing.

- Consistent training: California DMV continued its efforts to develop training material, including training videos, to reinforce the importance of consistency in the customer service initiatives implemented at the field offices. In December 2018, two new training videos were completed that focus on specific details of triaging the customer wait lines and proper queue management. These new videos will be used as part of statewide employee training on January 16 and January 23.

In December 2018, non-appointment wait times averaged 44 minutes (30 minutes queue time and 14 minutes pre-queue) while those with an appointment waited an average of 13 minutes.

According to the report, between August and December 2018, wait times have been reduced by an average of 86 minutes (1 hour and 26 minutes) for customers coming to a field office without an appointment. This number varies among offices, with some seeing even greater wait time reductions and others not as much. The department's goals are that wait times (amount of time in the queue) not exceed 45 minutes for customers without an appointment and 15 minutes for customers with an appointment. Additionally, the DMV has a goal for non-appointment customers to not wait more than 15 minutes to be issued a queue ticket upon arrival at the field office and an appointment customer not to wait more than 3 minutes to be issued a queue ticket.

Oregon State Legislature. Task Force on Transportation and Customer Service Efficiency. Report. November 1, 2014. Online reference. Available at: https://www.oregonlegislature.gov/citizen_engagement/Reports/ODOT2014TaskForceCustomerServiceEffncy.pdf. Accessed on January 31, 2020.

While Oregon has shorter than national average wait times, surveys say that customers hate the way they are treated. It was also found that customer satisfaction is not always correlated with wait times. In 2014, wide-ranging customer service complaints spurred the Legislature to form an 11-member task force under House Bill 4047 to study ways to improve wait times and possibly expand Saturday hours. As a result, the bill was passed to hire more DMV staff and extend hours of operation. The following recommendations were made to reduce wait time:

- Post 'live' field office wait time online
- Employ lobby/queue management system: offer a way to manage customers in real-time and can even allow customers to join a 'virtual' line and leave the field office to complete other tasks while they wait.
- Scheduling of appointments: Appointments that allow commercial customers and vehicle dealers to complete unlimited transactions at one

time with one payment are a more efficient use of customer and DMV employee time

- Employ kiosks
- Customer information placards: Customers are often frustrated by empty counters when there is a backlog, e.g. to conduct drive tests. Communicate these reasons to customers would help improve the customer experience.
- Provide Wi-Fi in field offices: offer entertainment options to occupy waiting customers and may also allow customers to complete other necessary transactions that impact their DMV transaction, such as paying fines
- Ensure adequate staffing: provide back-up staff for nearby offices to cover illness or vacation.

Barragán, J. “Driver's license centers have hours-long waits, but will Texas lawmakers fix the problem?” The Dallas Morning News. Available at <https://www.dallasnews.com/news/politics/2019/05/14/driver-s-license-centers-have-hours-long-waits-but-will-texas-lawmakers-fix-the-problem/>. Accessed on January 25, 2020.

The article mentioned that Texas has suffered from inefficiencies and excruciatingly long wait times at its driver's license centers. A WFAA investigation found that 7 of the 10 worst wait times for driver's license centers in the state were in North Texas. A list of DL office and its average transaction time, renewals and originals, and customer queuing in FY 2018 was provided in Table 9.

In the article, the author said that the data source was Texas DPS. However, the study team searched online and could not find any published data to repeat the analysis. The study team contacted the author and the author replied that he requested the data directly from DPS to develop the table. The study team also noticed that both the Table title and in the article text used “Driver’s License wait times”, but the column headings were “average transaction times for original license or replacement license”. The study team sent the author another email requesting further explanation on this. However, no response has been received so far.

Table 9. Texas FY18 Driver's License Center Wait Times

DL Office	Average Transaction Time		Renewals and Originals		Customers Queuing	
	Average Transaction Time Originals	Average Transaction Time Renewal & Replacement	% Renewals within 30 minutes	% Originals within 45 minutes	Originals	Renewals
Abilene	0:55:58	0:50:53	29.17%	35.13%	14,457	22,325
Amarillo	0:43:57	0:44:13	43.11%	62.15%	22,704	37,469
Austin North	1:32:53	1:19:11	18.78%	23.46%	36,644	49,097
Austin Northwest	1:14:11	1:03:42	24.65%	33.38%	25,188	36,160
Austin South	2:02:19	1:58:51	11.88%	19.82%	37,246	52,669
Baytown	1:06:24	0:45:01	33.30%	33.80%	28,739	37,459
Beaumont	1:19:11	1:14:20	13.15%	21.77%	20,141	33,770
Boerne	1:16:21	1:09:22	23.06%	32.32%	6,342	12,740
Brownsville	1:02:09	0:41:25	38.57%	46.02%	18,567	37,316
Bryan	1:24:40	1:12:58	23.53%	29.77%	25,188	31,048
Carrollton Mega Center	2:17:42	1:47:51	15.82%	17.63%	60,025	83,765
Clearlake	1:16:31	1:20:03	18.69%	29.71%	11,927	26,785
Cleburne	1:10:23	0:46:34	31.30%	31.45%	14,289	20,385
Conroe	0:51:21	0:52:39	30.66%	50.12%	19,862	28,727
Corpus Christi Mega Center	1:03:21	0:59:11	29.32%	33.19%	29,081	39,832
Dallas South Mega Center	2:18:37	1:31:44	14.49%	15.75%	83,785	95,461
Denton	1:26:22	1:15:55	9.44%	17.57%	17,324	23,950
Eagle Pass	0:21:18	0:20:16	77.21%	89.99%	11,463	10,141
Edinburg Mega Center	0:39:36	0:29:33	62.55%	66.31%	16,754	22,193
El Paso Gateway	0:38:44	0:36:09	45.54%	65.12%	27,417	47,092

DL Office	Average Transaction Time		Renewals and Originals		Customers Queuing	
	Average Transaction Time Originals	Average Transaction Time Renewal & Replacement	% Renewals within 30 minutes	% Originals within 45 minutes	Originals	Renewals
El Paso Hondo Pass	0:48:42	0:45:02	37.65%	51.52%	22,547	23,163
El Paso Northwest	0:41:35	0:37:42	45.07%	63.14%	16,897	21,068
El Paso Scott Simpson	0:58:34	0:55:31	20.44%	32.72%	28,030	42,592
Flower Mound	NA	NA	NA	NA	NA	NA
Fort Worth Mega Center	2:33:26	1:51:11	12.71%	19.68%	52,949	78,664
Fort Worth South	1:24:43	1:00:43	20.66%	22.36%	35,023	50,067
Garland	1:21:30	0:59:46	26.61%	33.16%	27,717	44,752
Garland Mega Center	2:34:05	1:48:31	16.31%	20.32%	70,600	111,157
Georgetown	1:14:29	1:10:48	17.26%	29.56%	15,185	21,536
Grand Prairie	2:29:29	2:25:20	9.33%	19.16%	25,161	33,907
Harlingen	0:37:59	0:28:42	63.59%	72.07%	12,647	27,968
Houston Dacoma	1:47:17	1:34:45	15.48%	15.46%	44,303	61,171
Houston Gessner Mega Center	2:00:17	1:52:37	19.48%	26.59%	66,150	91,657
Houston North Mega Center	1:13:28	1:05:36	37.35%	49.26%	62,643	93,799
Houston SE Mega Center	1:54:06	1:25:30	25.93%	32.01%	23,355	37,180
Houston Winkler	1:30:11	1:20:11	11.49%	20.80%	16,504	27,922
Humble	0:55:06	0:46:13	29.13%	38.81%	32,382	43,606
Hurst	1:48:13	1:45:37	13.70%	20.46%	29,214	49,671
Jacksonville	0:48:58	0:47:56	46.18%	57.39%	4,710	6,686

DL Office	Average Transaction Time		Renewals and Originals		Customers Queuing	
	Average Transaction Time Originals	Average Transaction Time Renewal & Replacement	% Renewals within 30 minutes	% Originals within 45 minutes	Originals	Renewals
Killeen	2:25:26	2:06:47	12.74%	19.39%	29,468	27,190
Kingsville	0:27:18	0:23:54	68.06%	81.71%	5,575	7,191
Lake Worth	2:01:10	1:29:16	10.90%	13.57%	37,118	54,422
Laredo	1:01:32	0:49:32	34.36%	50.66%	26,240	37,956
Leon Valley Mega Center	1:27:49	0:56:18	35.69%	32.68%	74,267	114,765
Lewisville	0:59:39	0:53:28	22.48%	37.15%	21,042	40,740
Livingston	0:35:35	0:35:02	50.61%	73.31%	5,917	8,260
Longview	0:49:19	0:42:48	37.46%	49.85%	15,008	21,140
Lubbock	0:54:07	0:46:50	40.80%	54.80%	17,100	34,377
Marble Falls	0:43:21	0:41:17	45.07%	61.66%	9,346	13,631
McAllen	0:48:57	0:39:55	47.46%	56.09%	28,670	42,246
McKinney	1:13:03	0:49:00	23.89%	30.02%	19,058	34,470
Midland Mega Center	1:40:13	1:19:13	22.94%	29.57%	38,372	49,446
Mission/Palmview	0:32:27	0:38:09	47.46%	73.70%	399	28,644
New Braunfels	0:51:18	0:45:05	43.55%	53.76%	16,408	22,038
Paris	0:20:40	0:17:48	86.71%	93.16%	6,191	10,410
Pasadena	1:15:48	1:19:26	16.30%	37.72%	10,470	18,803

Washington State Department of Licensing. “Picture This: Cameras at Every Licensing Service Office Counter”. June 11, 2019. Online reference. Available at: <https://licensingexpress.wordpress.com/2019/03/26/picture-this-cameras-at-every-licensing-service-office-counter/>. Accessed on January 13, 2020.

This article discusses a solution that the Washington State Department of Licensing implemented which helped has reduced driver’s license wait times. Cameras have been placed at every licensing station (so that the customers do not have to shuffle in between stations to have different functions performed, such as having a photo taken) which saves time. Washington also allows private third-party groups to conduct driving knowledge/skills testing, the most time-consuming transactions. The average state wait time is 10 minutes and it is possible to look up current wait times for all state offices.

*Beggin, Riley, Mike Wilkinson, Don, Karen Dunnam, George, Kelly Ripken, Joel, et al. “Michigan's Secretary of State Promised 30-Minute Waits - Lines Are Worse.” *Bridge Magazine*, August 14, 2019. <https://www.bridgemi.com/michigan-government/michigans-secretary-state-promised-30-minute-waits-lines-are-worse>. Accessed on January 15, 2020.*

Michigan DMV wait times are increasing. Secretary of State Benson had promised shorter wait times during campaigns, but she has yet to deliver. DMV claims that wait times from those with appointments typically less than 30 minutes but reports from locals are much higher. Methods to decrease wait time include implementing streamlining services for high-volume customers like auto dealers and manufacturers, staff training on goal metrics and how to expedite services. Increased wait times accredited to REAL ID laws and understaffing, and wait time estimations in highly trafficked areas are inaccurate. Wait times vary by region with northern Michigan having the shortest wait times. Wait times are also increased by high staff turnover (good economy, better options) so training takes a while. Michigan used old computer system until recently, but the latest system is filled with bugs. The government claims that simple system and kiosk changes are not enough-must redefine how we deliver state services.

The article provided a Table of average wait time at the 43 Michigan driver license brunches during the first seven months in 2019, as well as the corresponding change from 2018 of each office.

Table 10. Average Wait Times at 43 Michigan Brunch Offices in 2019

Office	2019 Wait Time (minutes)	Jan.	Feb.	April	May	June	July
Adrian	Ave. Wait	54.4	93.7	87.4	79	97.6	88.2
	Ch. from 2018	+31	+68.4	+50.8	+30.4	+32	+16.1
Ann Arbor	Ave. Wait	85.1	81.3	81.9	122.4	144.6	136
	Ch. from 2018	+17.3	+14.3	+8.2	+29.6	+46.1	+23.4

Office	2019 Wait Time (minutes)	Jan.	Feb.	April	May	June	July
Battle Creek	Ave. Wait	68.1	90	74.3	94.7	108.2	114.6
	Ch. from 2018	+26.9	+46.5	+24.2	+40	+64.5	+40.5
Bay City	Ave. Wait	12.6	40.7	46.8	52.3	31.7	37.1
	Ch. from 2018	+10	+18.9	+20.5	+18.3	+0.9	+0.8
Canton	Ave. Wait	103.7	137.9	124.1	78	110.4	122.6
	Ch. from 2018	+1.8	+38.5	+20.9	-33.1	-9.7	-26.5
Chesterfield Township	Ave. Wait	30.3	59.5	73.6	75.7	76.3	73.1
	Ch. from 2018	+3.5	+31.3	+35	+29.9	+10.3	-26.7
Clarkston	Ave. Wait	67.2	100.9	89.8	80.3	113.4	94.8
	Ch. from 2018	+37.5	+54.6	+36.3	+8.3	+28.2	0.5
Clinton Township	Ave. Wait	48.2	70.9	69.5	64.7	68.8	73.9
	Ch. from 2018	+5.4	+26.7	+9.2	-2.3	-10.6	-22.2
Cilo	Ave. Wait	27.5	67.1	99.2	111.4	127.9	119.3
	Ch. from 2018	+26.5	+61.1	+48.1	+60.8	+74.6	+61.7
Davison	Ave. Wait	23.3	67.8	48.8	62.5	55.3	79.1
	Ch. from 2018	+7.2	+38.5	+7.6	-7.5	-3.6	+11.8
Detroit West Grand Blvd	Ave. Wait	44.6	94.5	62.3	74.4	102.4	130.8
	Ch. from 2018	+6.1	+35.1	-20	+1.8	+23	+31.1
Eastpointe	Ave. Wait	73.4	124.4	75.1	85.9	121.9	118.5
	Ch. from 2018	+29.9	+44.4	-18.8	0	+37.1	-10.7
Flint Fenton Road	Ave. Wait	46.5	83	65.1	101	98	118.2
	Ch. from 2018	-1.7	+24.9	+9.5	+33.6	+22.9	+51.9
Grand Rapids 28 th Street	Ave. Wait	49.6	66.5	65.1	65.2	91.1	91.2
	Ch. from 2018	+9.9	+26.7	+17	+2.3	+8.1	-3.2
Grand Rapids Plainfield Ave.	Ave. Wait	35.6	49.5	49.7	45.6	59.1	66.3
	Ch. from 2018	+18.9	+25.8	+24.9	-1.7	+11.4	+5.2
Holland	Ave. Wait	31	48.9	32.3	86.9	108.8	118.6
	Ch. from 2018	-14.3	+16	-17.3	+16.4	+46.8	+30.5
Howell	Ave. Wait	77.5	108.9	99.6	107.8	123.1	134.2
	Ch. from 2018	-0.6	+54.3	+7.1	-9.5	-4.4	-17.4
Hudsonville	Ave. Wait	26.2	45.2	75.8	72	82.1	80.4
	Ch. from 2018	+26.2	+21.4	+38.5	+21.4	+28.3	+2.5
Jackson	Ave. Wait	69.9	72.5	67.5	79.3	107.7	85.4
	Ch. from 2018	+16.3	+19.7	+32.1	+37.8	+47	+6
Kalamazoo	Ave. Wait	60.4	77	120.1	101.9	102.6	120.8
	Ch. from 2018	-23.5	-3.3	+23.4	-14.1	+3.4	+5.1
Lansing East Michigan Ave	Ave. Wait	50.2	61.3	N.A.	N.A.	N.A.	N.A.
	Ch. from 2018	-45.6	-33.8	N.A.	N.A.	N.A.	N.A.
Lansing Executive Court	Ave. Wait	33.6	50.5	43.5	65.5	75.4	85.3
	Ch. from 2018	+12.6	+19.7	-34.5	-19	-20.6	-10.3
Lapeer	Ave. Wait	19.6	64.1	90.3	99.9	74.5	122.6
	Ch. from 2018	+2.2	+44.3	+51.5	+53.3	+14.1	+35.1
Livonia	Ave. Wait	103.2	112.3	107.1	130.5	111.2	124

Office	2019 Wait Time (minutes)	Jan.	Feb.	April	May	June	July
	Ch. from 2018	-19.6	-7.4	-7.8	+1.2	-14.7	-27.5
Marquette	Ave. Wait	11.4	12.9	30.3	34.5	30.2	35.4
	Ch. from 2018	+11.4	+12.9	+30.3	+34.5	+9.9	+5.4
Monroe	Ave. Wait	24.6	63.4	46.5	59.2	52.1	57
	Ch. from 2018	+24.6	+63.4	+29.4	+19.7	+9.2	+0.8
Muskegon	Ave. Wait	21.8	36.9	59.9	83.2	63.2	62.7
	Ch. from 2018	-1.2	+9.5	+23.2	+23.7	-10.4	-29.4
Novi	Ave. Wait	77	101.7	95	131	151	182.8
	Ch. from 2018	+1	+28.5	-39.4	+7.8	+44.3	+62.7
Oak Park	Ave. Wait	73.6	103.2	90.1	98.2	114	156.4
	Ch. from 2018	+21.4	+42.5	+11.8	+7.6	+21.9	+43.4
Pontiac	Ave. Wait	64.8	87.5	79	89.4	103.6	96.8
	Ch. from 2018	-2.7	+26.6	+9.9	+0.3	+8.6	-9.5
Port Huron	Ave. Wait	15.6	61	38.5	51.8	75.2	87
	Ch. from 2018	+2	+30.2	+1.4	+2	+20.4	+6.7
Portage	Ave. Wait	53.2	81.6	81.9	113.5	125.2	123.4
	Ch. from 2018	+5.8	+29.8	+15.7	+7.4	+32.8	+19
Rochester Hills	Ave. Wait	52.2	84.3	100.2	114.3	143.4	149.4
	Ch. from 2018	-17.4	+21.9	+40.7	+41	+35.8	+25.7
Seginaw Bay Road	Ave. Wait	20	45.3	35.4	48.1	50.9	70.7
	Ch. from 2018	-6.8	+18	+9.4	+19.6	+12.5	+28.1
Shelby Township	Ave. Wait	57.3	87	96.2	99.8	110.2	101.4
	Ch. from 2018	+25.5	+43.6	+43	+29.5	+20.1	-19.8
Southfield	Ave. Wait	95.1	119	70.2	92.2	106.1	124.4
	Ch. from 2018	+6.8	+23.6	-33.3	-18	-3.6	-7.8
Sterling Heights	Ave. Wait	42.2	78.3	28.3	57.4	79.4	71
	Ch. from 2018	+10.2	+39.4	-16.1	+4.4	+5.2	-14.8
Taylor	Ave. Wait	112.9	121.5	91.1	66.5	79.3	109.3
	Ch. from 2018	+41.6	+43.6	-15.1	-27.2	-23.9	-19.3
Traverse City	Ave. Wait	23.6	45.5	47.9	70.7	47	80.6
	Ch. from 2018	-46.9	-17.4	-12.6	-14.4	-47.8	-36.3
Trenton	Ave. Wait	59.6	88.9	70.1	112.8	91.4	94.4
	Ch. from 2018	+59.6	+46.7	-6.8	+40.8	+0.7	+8
Troy	Ave. Wait	101.1	107.4	116.3	112.8	129.5	135.8
	Ch. from 2018	+28.3	+50.4	+40.8	+7.9	-3	+10.6
Warren	Ave. Wait	58	90	80	73.8	83.3	95.3
	Ch. from 2018	-11.2	+11.9	+4.8	-25	-29.8	-34.2
Wyoming	Ave. Wait	38.7	78.7	92.1	81.3	103.7	106.6
	Ch. from 2018	-12.4	+21.9	+15	+15.6	+32	+27.8

The study team noticed that March is not included in Table 10. The article gave the reason because most branches did not have data for March. According to Table 10,

the average wait time of the 43 Michigan branches in the first seven months (excludes March) of 2019 was 79.2 minutes. Compared with the same period of 2018, Michigan experienced a 12.8 minutes wait time increase.

The article cited the data source as Michigan Secretary of State. The study team search the official website of Michigan Secretary of State but could not find published data regarding the wait time. We contacted the author of the article and the author replied that he requested the data directly from Secretary of State and developed the table.

Tennessee Comptroller of the Treasure Performance Audit Report. Department of Safety and Homeland Security. September 2019. Online reference. Official website of Tennessee Comptroller of the Treasure. Available at: <https://comptroller.tn.gov/content/dam/cot/sa/advanced-search/2019/pa19058.pdf>. Accessed on February 14, 2020.

The Division of State Audit of Tennessee Department of Safety and Homeland Security published a performance audit report on September 2019. The primary focus of the Driver Services Division is to “issue driver licenses and identification cards to qualified applicants”. The division maintains 44 staffed driver services centers across the state and partners with county clerks and municipal governments to provide identification cards, licenses, and renewal services. The division also offers citizens the option to renew or replace their license online or to use self-service kiosks located across the state. In addition to issuing driver licenses, the division is also responsible for processing handgun carry permit applications, handling voter registration, issuing driving records, and managing organ donation commitments.

According to the report, Table 11 lists the services provided by Tennessee Driver Service Center and their corresponding available methods.

Table 11. Services and Available Methods Provided by Tennessee Driver Service Center

Service	Driver Service Center	Mail	Online	County Clerk Office	Tablet	Self-service Kiosks	Mobile Application
Original DL or ID card	X						
DL renewal	X	X	X	X	X	X	X
Duplicate(rep lacement) DL or ID	X	X	X	X	X	X	X
DL reinstatement	X	X	X				
Motor vehicle record	X	X	X				
Knowledge and road skills test	X						
Handgun permit application	X		X				
Address change	X	X	X	X			X
Name change	X			X			
Real ID	X						
Voter photo ID	X						

As of January 23, 2019, the Driver Services Division had 432 employees, including 265 Driver License Examiners and Managers and 167 employees at the central office in Nashville.

Starting July 1, 2016, the Division of Audit performed an audit on Tennessee Department of Safety and Homeland Security, including a review of internal controls and compliance with laws, regulations, policies, procedures, and provisions of contracts or grant agreements. As part of the audit, during July 1, 2016 to June 30, 2019 (the audit is still ongoing and the scheduled termination date is June 30, 2020), the Division of State Audit audited the Driver Service Division, including:

- Driver services centers wait times
- Commercial driver license issuance
- Commercial driver license traffic convictions
- REAL ID implementation

- Staff turnover analysis

One of the main findings from the report found is that “Management did not accurately measure customers’ wait times and wait times at some driver services centers still exceeded the department’s average wait time standard”.

In October 2016 performance audit report, the Division of Audit reported that Driver Services Division did not accurately measure total wait times for driver license applicants at driver services centers because the time customers waited to obtain a service ticket was not measured and included as part of the total wait time. To solve this, Tennessee Department of Safety and Homeland Security signed contracts with vendors to implement customer queuing systems – kiosks. However, the audit team performed site visit in May/June 2019 and found some kiosks were not functional due to various vendor hardware and technical issues, such as inoperable kiosks and insufficient technical support for driver services centers. Therefore, the audit team said that the division could not accurately measure customers’ wait times from January 2019 through June 2019 because of these ongoing technical issues.

The Driver Service Center processed 1.5 million transactions and served 1.4 million customers in FY2018. Based on factors, such as staffing levels and services provided at the centers, the division management sets a performance standard for the average wait time per transaction for each office. The average wait time standards for fiscal years 2017, 2018, and 2019 are 16, 24, and 24 minutes, respectively.

The audit team obtained and analyzed monthly wait time reports for FY2018. The results are shown in Table 12.

Table 12. FY2018 Number of Tennessee Driver Services Centers Exceeding Wait Time Standard

Month	Number of Centers Exceeding Standard	Percentage of Centers Exceeding Standard	Average Wait Time (minutes)	Average Time Over Standard (minutes)
July 2017	19	43%	41	17
Aug. 2017	16	36%	41	17
Sept. 2017	9	20%	30	6
Oct. 2017	8	18%	29	5
Nov. 2017	5	11%	33	9
Dec. 2017	5	11%	30	6
Jan. 2018	9	20%	32	8
Feb. 2018	10	23%	34	10
March 2018	14	32%	39	15
April 2018	15	34%	37	13
May 2018	12	27%	33	9
June 2018	17	39%	40	16

On average, the wait time at Tennessee drive service center is 35 minutes in FY2018 – 9 minutes higher than the standard. In addition, 25% driver service centers’ wait times exceeded the standard for more than 6 months during FY2018.

Other main findings from the report are:

- Due to a lack of effective physical security measures, there is a heightened risk of theft, fraud, waste, abuse, and safety concerns at a Department of Safety and Homeland Security driver services center
- Driver Services Center staff did not ensure that adequate proof of residency was obtained before issuance of commercial learner’s permits and commercial driver licenses
- Local courts’ delays in sending traffic violation convictions affect the Driver Services Division’s ability to meet the federal reporting guidelines for commercial driver license traffic convictions
- Tennessee achieved full compliance with the REAL ID Act:

To implement the REAL ID Act’s requirements, Tennessee Department of Safety and Homeland Security received a federal grant totaling \$2,344,077 between 2009 and 2011, which was spent in full as of June 30, 2016. In preparation for the rollout of REAL ID issuance, the department plans to use \$600,000 of its state budget for FY 2019 and FY 2020 - \$200,000 to pay for advertising to relay and promote the issuance of REAL IDs; and \$400,000 to pay 30 part-time, temporary employees,

who were hired in May 2019 to assist with increased ID issuance activities. Tennessee driver service center began issuing REAL IDs on July 1, 2019.

FitzPatrick, Hayley. “At the DMV Monday, Shorter Lines and Calmer Tempers.” Medium. Transit New York, October 16, 2017. <https://medium.com/transit-new-york/at-the-dmv-monday-short-lines-and-calm-tempers-3c198824384f>. Accessed on January 20, 2020.

Midtown Manhattan DMV wait time is ~35 minutes. These wait times are typically shorter than expected since NYC is such a large, dense city. This decrease in wait times is due to efficient appointment system.

New York State. Governor Cuomo Highlights Dramatic Reduction in DMV Wait Times. January 29, 2015. Official website of New York State. Available at: <https://www.governor.ny.gov/news/governor-cuomo-highlights-dramatic-reduction-dmv-wait-times>. Accessed on February 15, 2020.

The article highlighted a dramatic reduction in wait times at offices of the New York State Department of Motor Vehicles. In 2012, New York DMV started Customer Service Initiative – a two-year process to reduce customer wait times, including the following actions:

- Implement a reservation system: all customers can reserve a day and time convenient for them without a wait
- Expand office hours
- New technology at call centers to expedite the 4.5 million calls received each year
- Assign employees to greet customers upon arriving at DMV offices in order to ensure they can efficiently navigate to the office and have the required documents
- Establish “vision registry”: this allows customers have the results of required eye exams transmitted electronically from their vision provider to the DMV. After the results have been transmitted, the customer can renew their driver license online without having to visit a DMV office
- Re-design DMV website: improve the appearance and content of the website and focused specifically on optimizing the mobile experience. In 2014, the total visitation to the DMV website was 28 million.
- Place kiosks in most DMV offices: customers can process their own registration renewals and replacements, driver license and non-driver ID renewals and replacements, permit replacements, address changes and driver license record requests

As a result, in September 2014, the average wait time at State-run DMV offices was reduced to 30 minutes – down from an average of 72 minutes (a decrease of 58 percent) in March 2013.

Toledo Blade. “Ohio Rolls out Online Waiting for Some BMV Locations”. June 17, 2019. Online reference. Available at: <https://www.toledoblade.com/local/transportation/2019/06/17/ohio-rolls-out-online-waiting-for-some-BMV-locations/stories/20190617148>. Accessed on January 9, 2020

Ohio utilizes online waiting that provides customers have a 4-hour window to claim a spot in line. The Program also will track wait times. However, wait times were never very long in Ohio to begin with. This program cost \$20,000 to launch. It is currently in 12 offices-will expand if successful.

DeCosta-Klipa, Nikolas. “3 Things to Know about Those Scary Wait Times at the RMV.” Boston.com. The Boston Globe, March 28, 2018. <https://www.boston.com/cars/car-news/2018/03/28/real-id-rmv-wait-times>. Accessed on January 20, 2020.

The Registry of Motor Vehicles in Massachusetts began issuing REAL IDs and a new computer system led to very long wait times. This is because REAL IDs require more documentation which takes a long time to process. The government of Massachusetts is encouraging customers to fill out documents beforehand or go online for other requests to decrease wait times dramatically.

According to the website, Massachusetts increased the number of residents served in less than 30 minutes from 59 percent in November 2014 to 74 percent by December 2015. Massachusetts registry’s official website provided real-time wait time (at <https://www.mass.gov/info-details/rmv-service-center-wait-times#rmv-service-center-wait-times>;) so that customer can check expected wait time at different Registry of Motor Vehicles (RMV) locations. Massachusetts RMV provides customers color-coded queues — a green “Ready to Go Line” for people who have their paperwork in order, and an orange line for folks who need more help or are performing lengthier transactions. They also place a greeter near the door to help people figure out what paperwork they need for their transaction and directing them to the right queue depending on whether their forms are in order (Miller 2015).

FOX 4 Kansas City WDAF-TV | News, Weather, Sports. “Kansas License Bureau Customers Experiencing Extra Long Wait Times”. July 6, 2018. Online reference. Available at: <https://fox4kc.com/2018/07/06/kansas-dmv-customers-experiencing-extra-long-wait-times/>. Accessed on January 17, 2020

The Kansas Licensing Bureau experiences busier weeks when people typically take off work. Reports have claimed customers make appointments but are still turned away at the door or have up to 4-hour waits. REAL IDs take longer. Online

transactions, like change of address, are underutilized. Spring and summer are big times for license renewals.

Pender, Kathleen. “*Ten Ways to Avoid Spending Your Whole Day at the DMV.*” *SFChronicle.com. San Francisco Chronicle, July 14, 2018.* <https://www.sfchronicle.com/business/networth/article/Ten-ways-to-avoid-spending-your-whole-day-at-the-13073886.php>. Accessed on January 27, 2020.

California has not implemented a text alert system for appointments. They have short wait times with appointment, but appointments are booked several months in advance. Wait time recordings are inaccurate because DMV does not track pre-wait, but the current recorded waits are advertised so customers can know beforehand. The shortest wait times are recorded at rural offices. Some offices also have self-serve kiosks. They suggest customers bring food, water, and chargers.

The average wait time has exploded since Jan. 22, 2018, when the DMV started issuing driver’s licenses and identity cards with enhanced security features, known as REAL ID. Things got even worse in February when the DMV started rolling out a new computerized queuing system to direct customers to the technician best suited to their needs. Some technical bugs were encountered with the new system.

The average wait time without an appointment for all services at 27 Bay Area DMV offices was an hour and 43 minutes in the first half of June 2018 compared with 47 minutes the same time a year ago. But that is only the time it takes from the moment a customer gets a numbered ticket until he or she is called to a window to begin the transaction. People could be in line “for hours” before they get the numbered ticket. The DMV is not tracking that time.

The article provided 10 tips to improve efficiency at DMV: 1. Don’t go if you don’t have to; 2. Look at your license; 3. Take a DMVacation; 4. Check wait times; 5. Consider going in late; 6. Bring the proper paperwork; 7. Bring sustenance; 8. Bring backup; 9. Don’t rely on credit cards; and 10. Keep calm.

Wu, Jiao Rong, Su Gang Lu, and Ying En Ge. “*Identifying Factors Impacting Customers’ Perceived Waiting Time in High Density Passenger Flow Waiting Areas.*” *Procedia - Social and Behavioral Sciences* 96 (2013): 1801–11. <https://doi.org/10.1016/j.sbspro.2013.08.205>.

According to the paper, younger and older customers tend to believe they waited longer than they actually did, compared to the middle age range. Males tend to believe they waited longer than they actually did. People who visited earlier in the morning tend to believe they waited longer than they actually did. Solo customers tend to believe they waited longer than they actually did compared to people who came in larger groups. Perception factor positively correlated with increasing number of people in group. It is more difficult to wait in hot conditions, standing more difficult than sitting, more difficult in densely packed areas and more difficult

without waiting information. Boredom sense is important in determining perception factor

Maister, D.H. (1985), "The psychology of waiting lines", in Czepiel, J.A., Solomon, M.R. and Surprenant, C.F. (Eds), *The Service Encounter: Managing Employee/Customer Interaction in Service Businesses*, Lexington Books, Lexington, MA, pp. 113-23.

The major findings from this paper include the following. Occupied time feels shorter than unoccupied time. People want to be acknowledged when they walk in (take a number) rather than waiting in a line without acknowledgement. Anxiety increases perceived wait time. An example of this is "The other line is moving faster." Uncertain and unexplained waits make people anxious. Unfair waits feel longer than equal waits. Customers will more likely wait calmly if service does not feel trivial. Solo waits feel longer than if someone is in a group

McGuire, K. A., Kimes, S. E., Lynn, M., Pullman, M. E., & Lloyd, R. C. "A framework for evaluating the customer wait experience" *Cornell University, School of Hospitality Administration* (2010).

The authors proposed and tested a model of the relationship between perceived wait time (PWT) and satisfaction that considers the impact of various psychological mediators. They conducted one field study and two laboratory experiments where subjects participated in a service with a pre-process wait and evaluated their experience on a survey. Their study found that perceived wasted time, perceived control, perceived boredom, and perceived neglect mediated the relationship between PWD and wait experience evaluation:

- Perceived wasted time: Time spent waiting increases the investment that must be made to obtain a service and reduces the utility that can be derived from it (Schwartz, 1975; Berry et al., 2002). The more valuable the customers' time, the more negative their perception of those that waste it (Osuna, 1985; Antonides et al., 2002).
- Perceived control: Control is defined as the need to demonstrate one's competence, superiority, and mastery over the environment. Increased perceptions of control have a significant, positive impact on human physical and psychological well-being (Staub et al., 1971; Langer and Rodin, 1976; Szpiller and Epstein, 1976; Sherrod et al., 1977, Burger, 1987, Hui and Bateson, 1991).
- Perceived boredom: Boredom arises when an individual "does not get enough interesting information" (Klapp, 1986). Due to the way in which the human mind measures the passage of time, time often seems to move more slowly to someone who experiences boredom. In other words, having

nothing to do during the wait results in idleness, which leads to boredom (Maister, 1985; Larson, 1987).

- Perceived neglect: When customers are forced to wait, they might perceive the agency as unresponsive or not empathetic. Feelings of neglect during a wait cause anxiety and uncertainty, which negatively impact the experience (Taylor, 1994; Hui et al., 1998).

When tested using filled versus unfilled wait time as the situational variable, the model showed that having something to do during the wait decreased perceived boredom, resulting in a more positive wait experience.

However, it needs to be pointed out that the services used in this paper were functional (as opposed to hedonistic) in nature and wait durations were a maximum of ten minutes.

Pruyn, A.Th.H. and A. Smidts. "Customers' Evaluations of Queues: Three Exploratory Studies," (1993) in E -European Advances in Consumer Research Volume 1, eds. W. Fred Van Raaij and Gary J. Bamossy, Provo, UT : Association for Consumer Research, Pages: 371-382

The paper conducted three exploratory studies using different methodologies. The first study of customer waiting times was the diary method. Close friends and family of the researchers recorded for one week how much time was spent waiting in lines. They found that finding that, on average, people spend more than half an hour each day on waiting, which produces substantial irritation and less satisfaction with the service proper. The second study looked at the factors that influence waiting times. Fairness was deemed the most important factor in the evaluation of waiting situations. The second important factor was the perceived value of the service. In the third study, they did a field experiment of queuing models at a local post office. Single lines and steady progress tend to frustrate people less than multiple lines. This was looked at by analyzing the perceived wait time over actual wait time. The waiting environment and objective waiting time were found to be the most influential factors on perceived duration of waiting. The difference in queuing system appeared to have minor effects.

Wallace, C., Martin, A., and Walton, J., 2015. Best practice for the implementation of the REAL ID Act. University of Kentucky, Kentucky Transportation Center.

Kentucky, which currently operates its licensing division through a decentralized model run through County Clerks Offices, conducted a survey and research review to recommend options for the state's transition to REAL ID compliance. The report recommends centralizing REAL ID printing and distribution into one facility to lower costs of complying with security protocols, and then proposes options for distributing non-REAL ID compliant licenses from its regular field offices. It also

recommends an online renewal option, and a staggered transition to an 8-year renewal cycle. Some of the best practices highlighted by states surveyed include an online checklist giving residents information about what documents are needed for REAL ID, solutions for limiting mailing issues of ID cards, and having the option of a non-compliant ID for those residents who can't access all the necessary documentation. This report also provides an outline for how to predict costs of implementation under various scenarios, including vendors and contractors.

Williams, T., 2013. Safedrive Medical: Assessing fitness to drive. 16th Road Safety on Four Continents Conference.

In Victoria, Australia, licensing for driving is based on “fitness to drive” test only, not age. The licensing department is responsible for monitoring medically at-risk drivers. Such drivers can be reported to VicRoads, the licensing dept, by anyone, but often it is medical professionals who are the front line of informing patients if their health conditions might contribute to dangerous driving. Thus, the department began an educational program to better inform medical professionals about how to assess fitness to drive in their patients. The main health conditions connected to elevated driving risk are alcohol abuse, dementia, epilepsy, MS, psychiatric disorders, schizophrenia, sleep apnea, and cataracts. The educational program, both a free seminar and online module, were evaluated by health professionals as useful and relevant.

United States Government Accountability Office, Driver's License Security: Federal Leadership Needed to Address Remaining Vulnerabilities. Report 12-893, Washington, D.C., September 2012.

This report recommends action and guidance from the Department of Homeland Security to address problems states have faced preventing cross-state and birth certificate fraud. Most states have successfully complied with existing DHS guidelines and laws related to preventing licensing fraud. However, many states have requested additional help with cross-state and birth certificate fraud, as there are currently gaps in cross-state coordination and data accuracy that single states alone are struggling to address. The GAO recommends interim action and guidance for states from the DHS while national systems are developed

Wheet, A., Rall, J., Major State Transportation Legislation. National Conference of State Legislatures. March 2011. Online reference. Available at: <https://www.ncsl.org/documents/transportation/2010majortranleg.pdf>. Accessed on January 27, 2020.

This report reviews funding and financing legislation passed and considered by states in 2010 in the face of the impending end to American Recovery and Reinvestment Act funding. Some of this legislation proposed increasing taxes and fees associated with registration and licensing, others proposed less-common

options like selling ad space on state-owned electronic highway signs or charging vehicle miles fees.

At the end of 2010, the REAL ID Act required that state-issued DL and ID meet federal standards by May 2011 to be accepted for federal purpose. Department of Homeland Security has estimated that it will cost about \$3.9 billion for the states to implement REAL ID. In 2010, Kentucky, Louisiana, New Hampshire, Oklahoma, and Utah considered bills that would have prohibited the state from complying with REAL ID provisions. The Utah bill passed (House Bill 234), making it the 25th state to oppose REAL ID. Conversely, legislators in Virginia proposed but did not pass a bill that would have required compliance.

Keathley, V., Martin, A., Walton, J., Kentucky Transportation Center at the University of Kentucky. Online Driver's License Renewal Research Report. September 2015.

The State of Kentucky commissioned this report to explore options for providing online driver's license renewal. A preliminary survey of states that have enacted online renewal indicated that online renewal is more efficient, improves customer service, cuts down on foot traffic, and promotes cost savings. States also reported on costs of implementation, distribution models, and eligibility requirements. Implementation was not found to be particularly disruptive or expensive. University of Kentucky researchers proposed either operating a print farm through the state or contracting out centralized production of IDs at a vendor location to service residents getting licenses online. The state would need legislative approval for either option to increase fees, and it would need to amend state law to authorize distribution of licenses by a vendor third party.

Ulmer, David H. "NCDOT IT Oversight SB744 Projects." North Carolina Department of Transportation, November 20, 2014. [https://www.ncleg.gov/DocumentSites/committees/JLOCIT/Past Meeting Information/2013-2014/11-20-2014/IT-Oversight-SB744-Overview-Status-Report-11-17-14v3.pdf](https://www.ncleg.gov/DocumentSites/committees/JLOCIT/Past%20Meeting%20Information/2013-2014/11-20-2014/IT-Oversight-SB744-Overview-Status-Report-11-17-14v3.pdf).

In 2014, North Carolina's Department of Transportation (NCDOT) used funding allocated after the passage of SB744 for technological and process improvements to its driver's license renewal and registration process. NCDOT updated and made more durable its driver's licenses, improving security, and ensuring compliance with Federal REAL ID requirements. NCDOT optimized office layouts, replaced mobile units with new portable units and footlockers, and piloted 34 self-service kiosks offered by MorphoTrust USA. Certain customers were made eligible to renew driver's licenses remotely via the internet, kiosks, and personal devices. For customers petitioning the DMV to preserve driving rights after a license suspension, NCDOT sought to make the hearing process more efficient by better allocating hearing officers across locations. NCDOT additionally used internal

resources to implement service-oriented architecture (SOA) goals, seeking to reduce delivery times and improve product and service distribution. Lastly, NCDOT upgraded its systems, applications, and products (SAP) infrastructure.

Safran. “Delaware DMV Speeds Customer Service Using MorphoTrust Self-Service Kiosks”. September 20, 2012. Online reference. Available at: https://www.safran-group.com/media/20120912_delaware-dmv-speeds-customer-service-using-morphotrust-self-service-kiosks. Accessed on January 16, 2020

In September 2012, Delaware’s Department of Motor Vehicles began using MorphoTrust USA’s self-service kiosks in three Delaware cities: Dover, Wilmington, and Georgetown. The kiosks are meant to speed up the ID issuance process for customers needing to replace or renew their licenses. If a customer chooses to use the kiosk, they either place their old license on a scanner or enter personal information by touch screen – if without their license -- and look at the kiosk’s camera. The kiosk connects to the DMV mainframe and confirms the customer’s identity. After taking a new picture, customers take a receipt from the kiosk to the window of a secure processing room to retrieve their new licenses. The kiosks also permit voter registration, address changes, and organ donor registration, with the potential for future registration capabilities.

FindBiometrics. “DMV To Benefit From Virtual Lines Thanks To New MorphoTrust Partnership”. August 27, 2014. Online reference. Available at: <https://findbiometrics.com/dmv-to-benefit-from-virtual-lines-thanks-to-new-morphotrust-partnership/>. Accessed on January 20, 2020.

In August 2014, MorphoTrust USA partnered with QLess, a wait management solutions software provider, integrating this new technology into its Identogo Centers and providing it to federal agencies. This partnership has the potential to streamline services and reduce wait times at governmental offices. To use this service, customer with internet-enabled personal devices may enter contact information at a website. They then receive a text or call notifying them it is their time to be served. Customers without internet-enabled devices may use an on-site touch screen kiosk to manage service times.

Martin, Zack. “Kiosks Enabling Driver License Renewal, Replacements.” SecureIDNews, November 11, 2014. <https://www.secureidnews.com/news-item/kiosks-enabling-driver-license-renewal-replacements/>.

In November 2014, Massachusetts’s Registry of Motor Vehicles began using MorphoTrust USA’s self-service kiosks, deploying eight kiosks in DMV offices across the state. The kiosks are meant to speed up the ID issuance process for customers needing to replace or renew their licenses. If a customer chooses to use the kiosk, they place their old license on a scanner, answer a few authentication questions, and then look at the kiosk’s camera. The kiosk connects to the DMV

mainframe and confirms the customer's identity. After taking a new picture, the kiosk prints a receipt that functions as a temporary ID until the customer receives a permanent ID in the mail a few days later. The kiosk additionally asks customers if they would like to register to vote and register to be an organ donor, among other possibilities.

WLOX. "Residents Frustrated over out of Service Kiosk". November 3, 2017. Online reference. Available at: <https://www.wlox.com/story/36753219/residents-frustrated-over-out-of-service-kiosk/>. Accessed on January 10, 2020.

In November 2017, Mississippi residents reported frustration that a MorphoTrust USA self-service kiosk deployed by the Mississippi Highway Patrol at a county courthouse had been broken for an extended period of time. The kiosk performed certain DMV functions, and saved customers from otherwise unnecessary trips to the DMV. Part of the reason for the delayed repair is confusion over the kiosk's repair process: Mississippi Highway Patrol says repairs are not their responsibility but are instead MorphoTrust USA's.

Witt, Gerald. "Driver's License ID Process Changed." Knoxville News Sentinel, August 8, 2013. <http://archive.knoxnews.com/news/local/drivers-license-id-process-changed-ep-510564804-355589301.html>. Accessed on January 24, 2020

This article provides additional information on the February 2013 deployment of MorphoTrust USA self-service kiosks by the Tennessee Department of Safety and Homeland Security (TDOS). Customers renewing or replacing ID's through self-service kiosks receive a 20-day temporary paper ID, while a permanent ID is stamped and mailed from a factory in Washington state. Customers may also update ID photos at kiosks if they would like, regardless of whether they need to renew or replace their license.

Iowa Department of Transportation. "Kiosks - Motor Vehicle." Official website of IDOT. Online reference. Available at: <https://iowadot.gov/mvd/kiosks>. Accessed on January 18, 2020.

Iowans have the ability to renew or replace their ID at self-service kiosks. If a customer chooses to use the kiosk, they either place their old license on a scanner or enter personal information by touch screen – if they are without their license -- and look at the kiosk's camera. The kiosk connects to the Department of Transportation (DOT) mainframe and confirms the customer's identity. A permanent ID will arrive in the mail within 21 days. The Iowa DOT's website lists additional requirements for ID renewal and replacement.

Des Moines Register. "Renew License at Six Metro DOT Kiosks". June 10, 2015. Online reference. Available at: <https://www.desmoinesregister.com/story/news/local/community/2015/06/10/dot-license-kiosks/71010926/>. Accessed on January 20, 2020.

In June 2015, the Iowa Department of Transportation (DOT) installed 24 self-service kiosks at alternate public locations such as grocery stores and library branches. The kiosks are meant to speed up the ID issuance process for customers needing to replace or renew their licenses and/or ID. Customers either scan their current driver license and/or ID or enter personal information into the kiosk's touch screen, then they have their photo taken and confirmed through the Iowa DOT's mainframe. Customers then receive a temporary paper ID while they wait up to 21 days to receive a permanent driver license or ID in the mail.

Chandler, Tyler. "Time-Saving Self Service Driver's License Kiosk Installed at Mt. Juliet Police Headquarters." Mt. Juliet Police, December 4, 2012. <https://mjpgdnews.org/2012/12/04/timesaving-self-service-drivers-license-kiosk-installed-at-mt-juliet-police-headquarters/>.

This article provides additional information on one of the 40 self-service kiosks issued by the Tennessee Department of Safety and Homeland Security (TDOS) in late 2012 and early 2013. Customers renewing or replacing driver license and ID through self-service kiosks receive a temporary paper driver license and/or ID valid for 2 weeks, while a permanent driver license and/or ID is stamped and mailed to them. This kiosk, located in Mt. Juliet, Tennessee, is available 24/7.

West Virginia Division of Motor Vehicles. "WV DMV Features New Self-Service Kiosks for License and Registration Renewals." February 28, 2017. Online reference. Available at: <https://transportation.wv.gov/DMV/News/Pages/New-Self-Service-Kiosks.aspx>. Accessed on January 26, 2020.

In February 2017, the West Virginia Department of Motor Vehicles (DMV) announced the issuance of three self-service kiosks across the state. These kiosks allow customers to renew or replace their driver license and vehicle registration without having to visit a DMV office. After entering personal information and having their identity confirmed at the machine, customers receive a temporary paper ID while their permanent driver license comes in the mail. At the time, customers needing to change the name or address on their driver's license still had to visit their local DMV office.

Indiana Bureau of Motor Vehicles. "BMV Connect." Online reference. Available at: <https://www.in.gov/bmv/2793.htm>. Accessed January 15, 2020.

Indiana offers its residents the ability to perform certain motor license registration functions at 24-hour self-service terminals called BMV Connect. At these kiosks, customers can complete numerous ID registration and renewal tasks, and they may update contact information, among other options.

Gantla, Snehalatha; Reyna, Monica; McNamee, Liza Nirelli; Wulfhorst, J D; Foltz, Barbara E. Idaho Transportation Department, Division of Motor Vehicles –2015 Customer Satisfaction Survey. University of Idaho, Moscow; Idaho

Transportation Department; Federal Highway Administration, 2015, 186p.
<https://trid.trb.org/view/1403011>

In the fall of 2014, the Idaho Transportation Department (ITD) commissioned a statewide telephone survey of Idaho residents to gauge their perception of the DMV's performance in different areas of customer service. Prior to being called, residents were sent postcards to inform them of their upcoming survey call. Respondents were asked to rate services for each of the following four areas: Driver Licensing, Vehicle Titling and Registration, Online Services, and Direct Services. All four areas received a majority of "A" grades from survey respondents, with Vehicle Titling and Registration receiving the most support and Direct Services receiving the least support.

For Driver Licensing, 86% of respondents reported satisfaction with overall wait times, and 94% of respondents felt that DMV staff were courteous and knowledgeable. Most respondents were able to complete their business in one trip, and 91% of respondents awarded a "B" or higher for quality of services when renewing or obtaining a driver's license or ID. 13% of respondents suggested adding more staff at driver licensing offices, followed by 12% of respondents suggesting a focus on staff courteousness and 12% more on wait times.

For Vehicle Titling and Registration, 92% of respondents reported satisfaction with wait times, and 96% of respondents felt that DMV staff were courteous and knowledgeable. Most respondents were able to complete their business in one trip, and 94% of respondents awarded a "B" or higher for quality of services when registering or titling a vehicle. 15% of respondents suggested adding more staff at vehicle titling and registration offices, followed by 11% of respondents suggesting a focus on staff courteousness and 7% more on wait times.

For Online Services, only 42% of respondents were aware of ITD's online services. Of the respondents that had previously used ITD's online services, 90% awarded a "B" or higher for overall quality of services. The most frequently cited reason for not using online services among those who had not previously used them is a preference for doing business in person. The vast majority of respondents using online services, at 75%, had done so to renew a vehicle registration. No other service was cited by more than 6% of respondents.

For Direct Services, 78% of respondents awarded a "B" or higher for quality of services provided at DMV Headquarters or Port of Entry offices. Courteousness of staff and knowledge of staff were found to be the most influential factors in how respondents rated direct services at DMV Headquarters or Port of Entry offices. 79% of respondents reported some satisfaction with wait times at DMV Headquarters or Port of Entry offices. Among respondents contacting direct services, 89% felt that all communication was very fast, not including telephone or

in person communications. A plurality of respondents, at 27%, reported using direct services for driver licenses or identification cards.

Looking at respondents' preferences for conducting transactions, 61% of respondents most preferred in person, while 24% of respondents most preferred online. Among second choices, 20% preferred in person and 28% preferred online. With respect to preferences for communications, 51% of respondents most preferred mail, while 29% of respondents most preferred email. Among second choices, 24% preferred mail and 23% preferred email.

Kane, S., Foltz, B., Idaho Transportation Department 2009 Customer Satisfaction Survey. Idaho Transportation Department Research Section, Transportation Planning Division. February 2010.

The Idaho Transportation Department commissioned a customer satisfaction survey in 2009 to review its citizens' views on highway construction, DMV procedures, alternative transit options, and public outreach efforts. For DMV driver licensing, titling, registration, and online services, a majority of survey-takers were satisfied with regards to each question they were asked. The report recommends more marketing for DMV online services, even though the services were highly rated by all who used them, only a small percentage of respondents had used the services. 29% of respondents who did not use online services stated the reason was that they "preferred in person/DMV is close/convenient" and 22% stated they did not have Internet access.

Kane, Stephanie L; Foltz, Barbara E. Idaho Transportation Department 2011 Customer Satisfaction Survey. University of Idaho, Moscow; Idaho Transportation Department; Federal Highway Administration, 2011, 166p. <https://trid.trb.org/view/1136579>

In the spring and summer of 2011, the Idaho Transportation Department (ITD) commissioned a statewide telephone survey of Idaho residents to gauge their perception of the DMV's performance in different areas of customer service. Prior to being called, residents were sent postcards to inform them of their upcoming survey call. Respondents were asked to rate services for each of the following seven areas: Highway Maintenance, DMV Services, Alternative Transportation, Public Involvement in the Planning Process, Communications from ITD, Direct Customer Service, and the Value and Focus of ITD. Driver Licensing Services, Registration and Titling, and Online Registration and Titling received a majority of "A" grades.

For DMV Services, 87% of respondents reported they were able to complete their business in one visit, and 93% of respondents felt that staff was courteous and knowledgeable. Roughly 90% of respondents awarded a "B" or higher for driver licensing services at DMV offices. Roughly 92% of respondents awarded a "B" or higher for vehicle titling and registration services at DMV offices. 88% of respondents reported some satisfaction with wait times at DMV offices.

Additionally, 92% of respondents awarded a “B” or higher for online DMV services. Among respondents unaware of online services, 56% reported a likelihood of using these services in the future. Among respondents making suggestions for improvements to DMV services, many comments regarded customer service recommendations such as improving wait times and adding more staff.

For Communications from ITD, just 28% of respondents report having accessed ITD’s website. Compared to 2009 survey results, these respondents were younger on average, indicating more potential for online communications in the future. Roughly 23% of respondents awarded communications from ITD an “A”, with 43% awarding it a “B”. With regard to respondents’ preference for communications, newspaper and television each received roughly 25%, with modes of communication such as radio, internet, and social media constituting part of the remaining 50%.

For Direct Customer Service, only 12% of respondents reported contacting ITD directly for service, but the vast majority were satisfied with their service. Roughly 44% of respondents awarded direct customer service an “A”, with 35% awarding it a “B”. Nearly a majority of respondents cited DMV services as the reason for their direct contact with ITD, followed by road maintenance and conditions at 20%. 90% of respondents felt that direct customer staff were courteous, while 84% of respondents felt that direct customer staff were knowledgeable. 81% of respondents felt that their service was fast.

For the Value and Focus of ITD, roughly 64% of respondents felt that ITD was either providing good or excellent value, compared to just 5% who felt that ITD provides poor value. Preserving and restoring highways was the most prominent suggestion, followed by winter maintenance and preserving and restoring bridges.

Proctor, Gordon D. Assessing the Idaho Transportation Department’s Customer Service Performance. No. FHWA-ID-11-205B. Idaho. Transportation Dept., 2011. <https://trid.trb.org/view/1136371>

This report evaluates and compares the statewide customer service survey on the Idaho DMV’s performance commissioned in the spring and summer of 2011 by the Idaho Transportation Department (ITD) to similar surveys by national agencies and other state transportation agencies.⁴ This report then uses these comparisons to provide additional strategies for improving the ITD’s customer service.

In addition to restating the major findings of the 2011 ITD report on Idaho residents’ perceptions of DMV performance, this report compares these findings to those of national survey data prepared by the Federal Highway Administration (FHWA) in 2005. Although comparisons between surveys are not exact, this report

⁴ Kane, Stephanie L; Foltz, Barbara E. Idaho Transportation Department 2011 Customer Satisfaction Survey. University of Idaho, Moscow; Idaho Transportation Department; Federal Highway Administration, 2011, 166p. <https://trid.trb.org/view/1136579>

found that Idaho residents were relatively less concerned about safety and congestion than residents nationally. Additionally, Idaho residents perceived relatively more value from the state transportation system than did residents nationally. Idaho's 2011 survey results and FHWA's 2005 survey results report similar customer satisfaction levels regarding alternative modes of transportation.

This report additionally compares Idaho's customer service survey results to similar surveys conducted by Oregon, Montana, and Missouri. With respect to Oregon, this report looked at customer satisfaction surveys from 2007, 2009, and 2011. In Oregon, customers rated Oregon DOT's performance at similar levels to Idaho customers' ratings of ITD's perceived values. So, both the Oregon and Idaho survey results reveal similar levels of customer unawareness of online services. However, Idaho residents reported higher satisfaction levels with DMV services than did Oregon residents with their DMV services.

Further comparisons between results from Ohio, Arizona, Florida, Kentucky, and Tennessee demonstrate similar findings as above. Among these states and national survey results, somewhere between two-thirds and three-quarters of respondents show satisfaction with the services provided by their state's highway network. ITD may benefit from more open-ended survey questions, as well as from comparing survey results between stakeholders, such as elected officials and advocacy groups, and the public.

Based on this research, ITD provides four categories of recommendations for improving customer service. In decreasing order of preference, these four categories are as follows: Low Cost, High Return; High Cost, High Return; Low Cost, Low Return; and High Cost, Low Return.

Among the Low Cost, High Return options, ITD recommends focusing on strategic rules such as the 80/20 rule – which says to focus on the 20 percent of issues that affect 80 percent of the public – and, specifically, addressing well-documented pothole and pavement marking issues, increasing awareness of the DMV's online services, and holding low-cost public meetings for community planning opportunities.

Among the High Cost, High Return options, ITD recommends making further investments to pavement quality and longevity as well as expanding non-vehicle transit opportunities for bicycle users and pedestrians.

Among the Low Cost, Low Return options, ITD recommends investing in DMV staff courteousness. Overall, respondents reported satisfaction with DMV staff courteousness – 93.1 percent of respondents described the DMV staff as “very courteous” or “somewhat courteous”. However, these results were not uniform and were particularly low in certain counties. Addressing the courteousness of those particular counties likely would be important to residents of these areas. However, raising the scores of those few counties will have only a slight effect upon the

already high public satisfaction ratings with the courteousness of DMV personnel. Therefore, this issue is of relatively low cost but will have relatively low impact on statewide public satisfaction ratings.

This report finally reviews the extent of ITD's efforts to assess customer service and makes recommendations for improving these efforts. ITD currently employs asset management systems in evaluating areas such as pavement conditions, maintenance, and infrastructure investments. In addition to more straightforward feedback mechanisms such as legislative outreach, publicly posted performance metrics from ITD, and customer surveys, ITD should involve its asset management systems more in refining customer service. In addition to expanding the scope of these efforts and connecting them more with elected officials and the general public, ITD should also consider incorporating customer service as an explicit mission of its Strategic Plan, a document indicating ITD's performance and efficiency goals. Additionally, ITD should consider a Customer Relationship Management (CRM) system for gathering, evaluating, and responding to customer complaints and comments in a systematic fashion. The CRM system collects and distributes complaints to appropriate agencies and people. This would allow ITD to be more dynamic in its provision of acceptable customer service.

Luling, Debra. Taking it online: Anyway, anyplace, anytime...Tennessee anytime. The Journal of Government Financial Management; Summer 2001;50, 2; ABI/INFORM Global.pg. 42

This article defines and summarizes the benefits of "e-government": the interaction of people with their government through the internet and the subsequent provision of services.

First, the article covers the decision by the State of Tennessee to create an online portal for driver's license renewals and address changes in late 2000. Then-Tennessee Governor Don Sundquist prioritized the move to digital government both in his Statewide Strategic Plan in 1998 and his State of the State address in early 2000. State information technology workers then contracted with a private vendor to create and release a site, called TennesseeAnytime, through the spring and early summer of 2000. In late August, the contract was awarded to the National Information Consortium (NIC), who delivered the final product – an online driver's license renewal system – just 45 days later. While NIC would handle day-to-day operations for TennesseeAnytime, the state would establish a Portal Advisory Committee (PAC) to monitor and oversee all of its actions.

There is significant demand for e-government services such as online driver's license renewals, voter registration, vehicle plate renewals, and access to official records. E-government has the potential to be cost-effective for governments and time-saving for citizens. To have effective e-government services, governments must ensure that their citizens receive a trustworthy, private, and secure online

interface. TennesseeAnytime has an available online privacy policy and security assurance for concerned citizens.

Following the launch of TennesseeAnytime, Tennessee state government added more online services, such as online child support payments and access to vital records. TennesseeAnytime showed that e-government could work, and e-government has been the norm across the country for many governmental services ever since.

Tatham, Chris. Identifying Customer-Focused Performance Measures. ETC Institute; Arizona Department of Transportation; Federal Highway Administration, 2010, 20p. <https://trid.trb.org/view/1102449>

This study was conducted by the Arizona Department of Transportation (DOT) in the summer of 2009. Arizona DOT sought to gather input from Arizona residents and community leaders, then to use their findings to determine short-term and long-term priorities for the department. To gather data, Arizona DOT completed stakeholder interviews, focus groups, and surveys. Stakeholder interviews involved state and local government officials as well as private sector representatives. The issues discovered in these interviews fed into the focus group materials, which asked local residents and community leaders about the perceptions of transportation services, Arizona DOT's performance, and possible areas of improvement. Following this, Arizona DOT conducted two separate surveys: one with community leaders such as government officials and business stakeholders, and one with a random sample of Arizona residents.

One of the survey findings is that Arizona residents were found to be most satisfied with the Motor Vehicle Division's (MVD) vehicle renewal registration and online services. They were found to be least satisfied with MVD's phone services and felt that this issue was most deserving of attention during the next two years. In sum, 74% of Arizona residents indicated satisfaction with the Arizona MVD, compared to just 5% indicating dissatisfaction.

2.2. Chapter Conclusion

This chapter summarizes various research studies and articles associated with DLD wait time and various methods that have been applied by agencies to reduce the wait time. Overall, long wait time has been a common complaint for DLD services. Kiosks, online processing, expanded working hours are found to be effective to improve efficiencies. Though research has been done to investigate wait time and ways to reduce it, more sophisticated and innovative methodologies are still needed to further explore the safety and economic impact of the safety inspections in Texas. The study team shall develop those methodologies, through surveys and statistical modeling.

Chapter 3. Conclusion

This technical memorandum synthesizes a comprehensive literature review, providing a general introduction to current practices of DLD, DLD wait time, and potential ways to reduce the wait time and improve efficiency.

Following are some notable findings presented in this technical memorandum:

- A thorough review of DLD in Texas and other States was performed;
- Although DLD is managed and operated by different agencies across the U.S., complaints about long wait time has been a common issue;
- The Federal REAL ID Act citizenship and lawful presence documentation requirements have significantly impacted wait and transaction times in Texas and most other states;
- Various factors have been identified to cause long customer wait time;
- Various actions have been taken by agencies to reduce wait time, including optimizing workflow and process, employing self-check in Kiosks, recruiting more employees, and etc.; and
- Certain actions could potentially be adopted by Texas DLD to reduce wait time

References

- Antonides, G., Verhoef, P.C. and van Aalst, M. (2002), "Consumer perception and evaluation of waiting time: a field experiment", *Journal of Consumer Psychology*, Vol. 12 No. 3, pp. 193-202.
- Applus Technologies. "Texas Awards Applus+ a New Appointment Solution Contract". April 17, 2019. Online reference. Official website of Applus Technologies Inc. Available at: <https://www.applustech.com/data/news/texas-awards-applus-a-new-appointment-solution-contract>. Accessed on February 4, 2020.
- Barragán, J. "Driver's license centers have hours-long waits, but will Texas lawmakers fix the problem?" *The Dallas Morning News*. Available at <https://www.dallasnews.com/news/politics/2019/05/14/driver-s-license-centers-have-hours-long-waits-but-will-texas-lawmakers-fix-the-problem/>. Accessed on January 25, 2020.
- Beggin, Riley, Mike Wilkinson, Don, Karen Dunnam, George, Kelly Ripken, Joel, et al. "Michigan's Secretary of State Promised 30-Minute Waits - Lines Are Worse." *Bridge Magazine*, August 14, 2019. <https://www.bridgemi.com/michigan-government/michigans-secretary-state-promised-30-minute-waits-lines-are-worse>. Accessed on January 15, 2020.
- Berry, L.L., Seiders, K. and Grewal, D. (2002), "Understanding service convenience", *Journal of Marketing*, Vol. 66 No. 3, pp. 1-17.
- Burger, J.M. (1987), "Increased performance with increased personal control: a self-presentation interpretation", *Journal of Experimental Social Psychology*, Vol. 23 No. 4, pp. 350-60.
- Brown, E.G., Brain C. Annis, and Bill Davidson. Report to the Joint Legislative Budget Committee of the State of California: Department of Motor Vehicles Monthly Status Update Report. California DMV. January 4, 2019. Online reference. Available at: https://www.dmv.ca.gov/portal/wcm/connect/c23f9fc5-57fc-4348-881b-1ac302cafcaa/JLBC_December_2018.pdf?MOD=AJPERES&CVID=. Accessed on January 31, 2020.
- California DMV. 2020 (a). Online Reference. Official website of California DMV. Available at: <https://www.dmv.ca.gov/portal/dmv/detail/about/dmvinfo>. Accessed on January 30, 2020.
- California DMV. 2020 (b). Online Reference. Statistics for Publication. Available at: <https://www.dmv.ca.gov/portal/wcm/connect/5aa16cd3-39a5-402f->

[9453-0d353706cc9a/official.pdf?MOD=AJPERES](https://www.dmv.ca.gov/portal/dmv/detail/pubs/newsrel/2018/2018_63). Accessed on January 30, 2020.

California DMV. DMV Announces New Efforts to Reduce Wait Times. August 7, 2018. Online Reference. Accessed on January 31, 2020. Available at: https://www.dmv.ca.gov/portal/dmv/detail/pubs/newsrel/2018/2018_63.

Chandler, Tyler. "Time-Saving Self Service Driver's License Kiosk Installed at Mt. Juliet Police Headquarters." Mt. Juliet Police, December 4, 2012. <https://mjpgdnews.org/2012/12/04/timesaving-self-service-drivers-license-kiosk-installed-at-mt-juliet-police-headquarters/>.

DeCosta-Klipa, Nikolas. "3 Things to Know about Those Scary Wait Times at the RMV." Boston.com. The Boston Globe, March 28, 2018. <https://www.boston.com/cars/car-news/2018/03/28/real-id-rmv-wait-times>. Accessed on January 20, 2020.

Deloitte Consulting LLP. Texas Department of Public Safety: Management and Organizational Structure Study. October 28, 2008. Available at: www.dps.texas.gov/director_staff/public_information/Deloitte102808.pdf. Accessed on January 30, 2020

Des Moines Register. "Renew License at Six Metro DOT Kiosks". June 10, 2015. Online reference. Available at: <https://www.desmoinesregister.com/story/news/local/community/2015/06/10/dot-license-kiosks/71010926/>. Accessed on January 20, 2020.

FindBiometrics. "DMV To Benefit From Virtual Lines Thanks To New MorphoTrust Partnership". August 27, 2014. Online reference. Available at: <https://findbiometrics.com/dmv-to-benefit-from-virtual-lines-thanks-to-new-morphotrust-partnership/>. Accessed on January 20, 2020.

FitzPatrick, Hayley. "At the DMV Monday, Shorter Lines and Calmer Tempers." Medium. Transit New York, October 16, 2017. <https://medium.com/transit-new-york/at-the-dmv-monday-short-lines-and-calm-tempers-3c198824384f>.

Florida Highway Safety and Motor Vehicles. Florida Licensing on Wheels (FLOW). Online reference. Available at: <https://www.flhsmv.gov/locations/florida-licensing-wheels-flow/>. Accessed on February 25, 2020.

Florida Highway Safety and Motor Vehicles. 2020 (a). Agency Goals. Online reference. Available at: <https://www.flhsmv.gov/about/departments/overview/agency-goals/>. Accessed on February 25, 2020.

- Florida Highway Safety and Motor Vehicles. 2020 (b). Licensed Driver Report by County, Gender and Age Group as of January 1, 2019. Online reference. Available at: <https://www.flhsmv.gov/pdf/driver-vehiclereports/2019annuallicenseddriverreport.pdf>. Accessed on February 25, 2020.
- Florida Highway Safety and Motor Vehicles. 2020 (c). Locations. Online reference. Available at: <https://www.flhsmv.gov/locations/> Accessed on February 25, 2020.
- FOX 4 Kansas City WDAF-TV | News, Weather, Sports. “Kansas License Bureau Customers Experiencing Extra Long Wait Times”. July 6, 2018. Online reference. Available at: <https://fox4kc.com/2018/07/06/kansas-dmv-customers-experiencing-extra-long-wait-times/>. Accessed on January 17, 2020
- Friedman, Scott. “How Can Texas Reduce Driver License Lines?” NBCDFW. August 6, 2012. <https://www.nbcdfw.com/news/local/how-can-texas-reduce-driver-license-lines/1926415/>.
- Gantla, Snehalatha; Reyna, Monica; McNamee, Liza Nirelli; Wulfhorst, J D; Foltz, Barbara E. Idaho Transportation Department, Division of Motor Vehicles – 2015 Customer Satisfaction Survey. University of Idaho, Moscow; Idaho Transportation Department; Federal Highway Administration, 2015, 186p. <https://trid.trb.org/view/1403011>
- Hui, M.K. and Bateson, J.E.G. (1991), “Perceived control and the effect of crowding and consumer choice on the service experience”, Journal of Consumer Research, Vol. 18 No. 2, pp. 174-84.
- Hui, M.K., Thakor, M.V. and Gill, R. (1998), “The effects of delay type and service stage on consumers’ reaction to waiting”, Journal of Consumer Research, Vol. 24 No. 4, pp. 469-79.
- Indiana Bureau of Motor Vehicles. “BMV Connect.” Online reference. Available at: <https://www.in.gov/bmv/2793.htm>. Accessed January 15, 2020.
- Iowa Department of Transportation. “Kiosks - Motor Vehicle.” Official website of IDOT. Online reference. Available at: <https://iowadot.gov/mvd/kiosks>. Accessed on January 18, 2020.
- Kane, S., Foltz, B. “Idaho Transportation Department 2009 Customer Satisfaction Survey” (2010). Idaho Transportation Department Research Section, Transportation Planning Division. <https://idahodocs.contentdm.oclc.org/digital/collection/p16293coll3/id/241112>.

- Kane, Stephanie L; Foltz, Barbara E. Idaho Transportation Department 2011 Customer Satisfaction Survey. University of Idaho, Moscow; Idaho Transportation Department; Federal Highway Administration, 2011, 166p. <https://trid.trb.org/view/1136579>
- Keathley, V., Martin, A., Walton, J. “Kentucky Transportation Center at the University of Kentucky” (2015). Online Driver’s License Renewal Research Report. https://uknowledge.uky.edu/ktc_researchreports/1497/.
- Klapp, O.E. (1986), *Overload and Boredom: Essays on the Quality of Life in the Information Age*, Greenwood Press, New York, NY.
- Langer, E.J. and Rodin, J. (1976), “The effects of choice and enhanced personal responsibility for the aged: a field experiment in an institutional setting”, *Journal of Personal and Social Psychology*, Vol. 34 No. 2, pp. 191-8.
- Larson, R.C. (1987), “Perspective on queues: social justice and the psychology of queueing”, *Operations Research*, Vol. 35 No. 3, pp. 895-905.
- Legislative Analyst’s Office. The 2019-2020 Budget: Transportation Proposals. Online reference. Available at: https://lao.ca.gov/Publications/Report/3948#Department_of_Motor_Vehicles. Accessed on February 5, 2020.
- Luling, Debra. Taking it online: Anyway, anyplace, anytime...Tennessee anytime. *The Journal of Government Financial Management*; Summer 2001;50, 2; ABI/INFORM Global.pg. 42
- Maister, D.H. (1985), “The psychology of waiting lines”, in Czepiel, J.A., Solomon, M.R. and Surprenant, C.F. (Eds), *The Service Encounter: Managing Employee/Customer Interaction in Service Businesses*, Lexington Books, Lexington, MA, pp. 113-23.
- Martin, Zack. “Kiosks Enabling Driver License Renewal, Replacements.” *SecureIDNews*, November 11, 2014. <https://www.secureidnews.com/news-item/kiosks-enabling-driver-license-renewal-replacements/>.
- McGuire, K. A., Kimes, S. E., Lynn, M., Pullman, M. E., & Lloyd, R. C. “A framework for evaluating the customer wait experience” Cornell University, School of Hospitality Administration (2010).
- Miller, Joshua. “Governor touts reduced wait times at RMV offices”. December 28, 2015. Online reference. *The Boston Globe*. Available at: <https://www.bostonglobe.com/metro/2015/12/28/charlie-baker-crows-about-rmv-improvements/5KuD0wWs7MP0iRoKdNlc5H/story.html>. Accessed on February 16, 2020.
- New York State. Governor Cuomo Highlights Dramatic Reduction in DMV Wait Times. January 29, 2015. Official website of New York State. Available at:

- <https://www.governor.ny.gov/news/governor-cuomo-highlights-dramatic-reduction-dmv-wait-times>. Accessed on February 15, 2020.
- New York State Department of Motor Vehicles. 2020 (a). Online Reference. Available at: <https://dmv.ny.gov/about-dmv/about-dmv>. Accessed on February 25, 2020.
- New York State Department of Motor Vehicles. 2020 (b). NYS Driver Licenses in Force. Online Reference. Available at: <https://dmv.ny.gov/statistic/2018licinforce-web.pdf>. Accessed on February 25, 2020.
- New York State Department of the Budget. 2020 (a). Online reference. Available at: <https://www.budget.ny.gov/pubs/archive/fy20/exec/agencies/appropData/MotorVehiclesDepartmentof.html>. Accessed on February 25, 2020.
- New York State Department of the Budget. 2020 (b). Online reference. Available at: <https://www.budget.ny.gov/pubs/archive/fy20/exec/book/transportation.pdf>. Accessed on February 25, 2020.
- Oregon State Legislature. Task Force on Transportation and Customer Service Efficiency. Report. November 1, 2014. Online reference. Available at: https://www.oregonlegislature.gov/citizen_engagement/Reports/ODOT2014TaskForceCustomerServiceEffncy.pdf. Accessed on January 31, 2020.
- Osuna, E.E. (1985), "The psychological cost of waiting", *Journal of Mathematic Psychology*, Vol. 29 No. 1, pp. 82-105.
- Pender, K. "Ten ways to avoid spending your whole day at the DMV." *San Francisco Chronicle*. July 14, 2018. Available at: <https://www.sfchronicle.com/business/networth/article/Ten-ways-to-avoid-spending-your-whole-day-at-the-13073886.php>. Accessed on January 27, 2020.
- Proctor, Gordon D. Assessing the Idaho Transportation Department's Customer Service Performance. No. FHWA-ID-11-205B. Idaho. Transportation Dept., 2011. <https://trid.trb.org/view/1136371>
- Pruyn, A.Th.H. and A. Smidts. "Customers' Evaluations of Queues: Three Exploratory Studies," (1993) in *E -European Advances in Consumer Research Volume 1*, eds. W. Fred Van Raaij and Gary J. Bamossy, Provo, UT : Association for Consumer Research, Pages: 371-382
- Safran. "Delaware DMV Speeds Customer Service Using MorphoTrust Self-Service Kiosks". September 20, 2012. Online reference. Available at: https://www.safran-group.com/media/20120912_delaware-dmv-speeds-

[customer-service-using-morphotrust-self-service-kiosks](#). Accessed on January 16, 2020

Schwartz, B. (1975), *Queuing and Waiting*, University of Chicago Press, Chicago, IL.

Sherrod, D.R., Hage, J.N., Halpern, P.L. and More, B.S. (1977), “The effects of personal causation and perceived control on responses to an aversive environment: the more control, the better”, *Journal of Experimental Social Psychology*, Vol. 13 No. 1, pp. 14-27.

Staub, E., Tursky, B. and Schwartz, G. (1971), “Self-control and predictability: their effects on reactions to aversive stimulation”, *Environment & Behavior*, Vol. 18 No. 2, pp. 157-62.

Szpiller, J.A. and Epstein, S. (1976), “Availability of an avoidance response as related to automatic arousal”, *Journal of Abnormal Psychology*, Vol. 85 No. 1, pp. 73-82.

Tatham, Chris. *Identifying Customer-Focused Performance Measures*. ETC Institute; Arizona Department of Transportation; Federal Highway Administration, 2010, 20p. <https://trid.trb.org/view/1102449>

Taylor, S. (1994), “Waiting for service: the relationship between delays and evaluation of service quality”, *Journal of Marketing*, Vol. 58 No. 2, pp. 56-69.

Tennessee Comptroller of the Treasure Performance Audit Report. Department of Safety and Homeland Security. September 2019. Online reference. Official website of Tennessee Comptroller of the Treasure. Available at: <https://comptroller.tn.gov/content/dam/cot/sa/advanced-search/2019/pa19058.pdf>. Accessed on February 14, 2020.

Texas Comptroller of Public Accounts. *Fiscal Notes. Texas Driver’s Licenses – A customer Service Challenge*. October 2019. Online reference. Available at: <https://comptroller.texas.gov/economy/fiscal-notes/2019/oct/license.php>. Accessed on February 11, 2020.

Texas Department of Public Safety. Driver License Division. *FAQs about the Driver License Division*. Online reference. Available at: <https://www.dps.texas.gov/DriverLicense/FAQs/dldIndex.htm#FAQs>. Accessed on February 7, 2020.

Texas Department of Public Safety. Driver License Division. *Texas Driver Handbook*. Revised September 2017.

Texas Department of Public Safety. *Legislative Appropriations Request for Fiscal Years 2020 and 2021*. Submitted to the Governor’s Office of Budget, Planning and Policy and the Legislative Budget Board. Online reference.

- August 31, 2018. Available at: <https://www.dps.texas.gov/LBB/lar2020-21.pdf>. Accessed on February 28, 2020.
- Texas Department of Public Safety. 2020. Online reference. Texas State Library and Archives Commission: *An Inventory of Department of Public Safety Records at the Texas State Archives, 1930-1931, 1934-2000, Undated*. Accessed on January 30, 2030. Available at: <https://legacy.lib.utexas.edu/taro/tslac/30100/tsl-30100.html>.
- Texas Legislature. House Bill No. 1. General Appropriation Act. Eighty-Sixth Legislature. May 19, 2019. Online reference. Available at: <https://capitol.texas.gov/tlodocs/86R/billtext/pdf/HB00001F.pdf#navpanes=0>. Accessed on February 28, 2020.
- Texas Legislative Budget Board. ‘Department of Public Safety Driver License Improvement Plan. January 2013’ Online Reference. Official website of Texas Legislative Budget Board. Available at: http://www.lbb.state.tx.us/Documents/Publications/Issue_Briefs/409_DPS_DL_%20Improv.pdf. Accessed on February 6, 2020
- Texas Sunset Advisory Commission. Texas Sunset Advisory Commission Final Report. July 2009. Online reference. Available at: https://www.sunset.texas.gov/public/uploads/files/reports/Department%20of%20Public%20Safety_Private%20Security_Polygraph%20Examiners%20Final%20Report%202009%2081st%20Leg_0.pdf. Accessed on February 10, 2020.
- Texas Sunset Advisory Commission. Texas Sunset Advisory Commission Staff Report with Commission Decisions. 2018-2019 86th Legislature. **September 2018**. Online reference. Available at: https://www.sunset.texas.gov/public/uploads/files/reports/Department%20of%20Public%20Safety%20Staff%20Report%20with%20Commission%20Decisions_9-10-18.pdf. Accessed on February 11, 2020.
- The Florida Senate. 2019. Senate Bill 2500: Appropriations. Online reference. Available at: <https://www.flsenate.gov/Session/Bill/2019/2500/BillText/er/PDF>. Accessed on February 28, 2020.
- The Florida Senate. 2020. Senate Bill 2500: Appropriations. Online reference. Available at: <https://www.flsenate.gov/Session/Bill/2020/2500/BillText/e1/PDF>. Accessed on February 28, 2020.
- Toledo Blade. “Ohio Rolls out Online Waiting for Some BMV Locations”. June 17, 2019. Online reference. Available at: <https://www.toledoblade.com/local/transportation/2019/06/17/ohio-rolls->

[out-online-waiting-for-some-BMV-locations/stories/20190617148](https://www.washingtonpost.com/news/technology/wp/2019/06/17/out-online-waiting-for-some-BMV-locations/stories/20190617148).

Accessed on January 9, 2020

- Transparency Florida. 2020. Operating Budget - State Positions. Online reference. Available at: http://www.transparencyflorida.gov/Positions/Positions_Summary.aspx?FY=20&BE=76000000&LBE=&R=P&SC=F&OB=Y. Accessed on February 25, 2020.
- Ulmer, David H. "NCDOT IT Oversight SB744 Projects." North Carolina Department of Transportation, November 20, 2014. [https://www.ncleg.gov/DocumentSites/committees/JLOCIT/Past Meeting Information/2013-2014/11-20-2014/IT-Oversight-SB744-Overview-Status-Report-11-17-14v3.pdf](https://www.ncleg.gov/DocumentSites/committees/JLOCIT/Past_Meeting_Information/2013-2014/11-20-2014/IT-Oversight-SB744-Overview-Status-Report-11-17-14v3.pdf).
- United States Government Accountability Office. "Driver's License Security: Federal Leadership Needed to Address Remaining Vulnerabilities" (2012). Report 12-893. <https://www.gao.gov/assets/650/648689.pdf>.
- Wallace, C., Martin, A., and Walton, J., 2015. Best practice for the implementation of the REAL ID Act. University of Kentucky, Kentucky Transportation Center.
- Washington State Department of Licensing. "Picture This: Cameras at Every Licensing Service Office Counter". June 11, 2019. Online reference. Available at: <https://licensingexpress.wordpress.com/2019/03/26/picture-this-cameras-at-every-licensing-service-office-counter/>. Accessed on January 13, 2020.
- West Virginia Division of Motor Vehicles. "WV DMV Features New Self-Service Kiosks for License and Registration Renewals." February 28, 2017. Online reference. Available at: <https://transportation.wv.gov/DMV/News/Pages/New-Self-Service-Kiosks.aspx>. Accessed on January 26, 2020.
- Wheat, A., Rall, J., Major State Transportation Legislation. National Conference of State Legislatures. March 2011. Online reference. Available at: <https://www.ncsl.org/documents/transportation/2010majortranleg.pdf>. Accessed on January 27, 2020.
- Williams, Tricia. "Safedrive Medical: Assessing fitness to drive" (2013). 16th Road Safety on Four Continents Conference. <http://vti.diva-portal.org/smash/get/diva2:759530/FULLTEXT01.pdf>.
- Witt, Gerald. "Driver's License ID Process Changed." Knoxville News Sentinel, August 8, 2013. <http://archive.knoxnews.com/news/local/drivers-license-id-process-changed-ep-510564804-355589301.html/>. Accessed on January 24, 2020

WLOX. “Residents Frustrated over out of Service Kiosk”. November 3, 2017. Online reference. Available at: <https://www.wlox.com/story/36753219/residents-frustrated-over-out-of-service-kiosk/>. Accessed on January 10, 2020.

Wu, Jiao Rong, Su Gang Lu, and Ying En Ge. “Identifying Factors Impacting Customers’ Perceived Waiting Time in High Density Passenger Flow Waiting Areas.” *Procedia - Social and Behavioral Sciences* 96 (2013): 1801–11. <https://doi.org/10.1016/j.sbspro.2013.08.205>.