

Texas Department of Transportation Disparity Study 2019



TEXAS DEPARTMENT OF TRANSPORTATION DISPARITY STUDY

2019

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About the Study Team

Colette Holt & Associates (“CHA”) is a national law and consulting firm specializing in disparity studies, affirmative action contracting programs, expert witness services, compliance monitoring and strategic development related to inclusion, diversity and affirmative action. Founded in 1994, it is led by Colette Holt, J.D., a nationally recognized attorney and expert. In addition to Ms. Holt, the firm consists of Steven C. Pitts, Ph. D., who serves as the team's economist and statistician; Ilene Grossman, B.S., CHA Chief Operating Officer; Glenn Sullivan, B.S., CHA Director of Technology; Victoria Farrell, MBA, CHA Assistant Principal Researcher; and Joanne Lubert, J.D., Special Counsel. CHA is certified as a Disadvantaged Business Enterprise, Minority-Owned Business Enterprise and a Woman-Owned Business Enterprise by numerous agencies.

Nervi’ Strategic Solutions, LLC (DBE) was founded in 2009 to strategically align D/S/M/WBE companies to compete in today’s challenging contracting industry in both the private and public environments. President Pam Ervin-Davis has over 25 years of experience in supplier diversity and has worked with partnerships of D/S/M/WBEs in all industries.

Sylvia Cavazos Public Relations/Public Affairs, LLC (DBE) was established in 2002 to reach multi-cultural audiences and under-served communities through focused engagement and communications utilizing localization and grassroots outreach on a national, regional and local level.

Pink Consulting (DBE) provides communications services on public and private projects. The firm focuses on the development and implementation of community outreach initiatives, with emphasis in minority communities. Principal Bobbie Garza-Hernandez has been providing communications services on large-scale public and private projects since 1997.

Reach Out Austin! (DBE) Public Involvement Services helps interested stakeholders understand current concepts of their community issues, and custom designs awareness campaigns to employ traditional and newer creative tools for a better citizen engagement experience. Principal Darlene Watkins brings 15 years of experience as a multi-level community outreach professional. She has consulted on projects in the public, private and not-for-profit sectors.

Lopez PR & Marketing Group (HUB) is a professional public relations and public engagement firm. The firm has been involved with many TxDOT public involvement projects. President Jose Lopez is very familiar with leadership in the El Paso and surrounding areas.

Gabriel Communications (HUB, DBE) provides professional communication primarily in the public sector. The firm works with regional communities, civic leaders, and government municipal entities, and has been instrumental in community engagement in the Rio Grande area.

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I. EXECUTIVE SUMMARY

Colette Holt & Associates (“CHA”) was retained by the Texas Department of Transportation (“TxDOT” or “Department”) to perform a study in conformance with strict constitutional scrutiny and the Disadvantaged Business Enterprise Program¹ and the Historically Underutilized Business Program to determine its utilization of Disadvantaged, Minority- and Women-Owned Business Enterprises (collectively “DBEs” and “HUBs”); the availability of DBEs and HUBs in its market area; any disparities between its utilization and availability of DBE and HUBs; and to evaluate whether the use of race-conscious measures is supported by the results of this analysis. We were also tasked with making recommendations for increasing the inclusion of DBEs and HUBs and small businesses. We analyzed contract data for fiscal years 2012 through 2016.

A. Summary of the Strict Constitutional Standards Applicable to Minority and Women Business Programs

To be effective, enforceable, and legally defensible, a race-and gender-based program for public sector contracts must meet the judicial test of constitutional “strict scrutiny.” Strict scrutiny is the highest level of judicial review. TxDOT must meet these tests to ensure any race- and gender-conscious program is in legal compliance.

Strict scrutiny analysis has two elements:

1. The government must establish its “compelling interest” in remediating race discrimination by current “strong evidence” of the persistence of discrimination. Such evidence may consist of the entity’s “passive participation” in a system of racial exclusion.
2. Any remedies adopted must be “narrowly tailored” to that discrimination; the program must be directed at the types and depth of discrimination identified.

The compelling governmental interest requirement has been met through two types of proof:

1. Statistical evidence of the underutilization of minority or women firms by the agency and/or throughout the agency’s geographic and industry market area compared to their availability in the market area. This is a “disparity analysis.”

1. 49 C.F.R. Part 26.

2. Anecdotal evidence of race- or gender-barriers to the full and fair participation of minority- and women-owned firms in the market area and in seeking contracts with the agency. Anecdotal data can consist of interviews, surveys, public hearings, academic literature, judicial decisions, legislative reports, and other information.

The narrow tailoring prong has been met by satisfying five factors to ensure that the remedy “fits” the evidence:

1. The necessity of relief;
2. The efficacy of race-neutral remedies at overcoming identified discrimination;
3. The flexibility and duration of the relief, including the availability of waiver provisions;
4. The relationship of numerical goals to the relevant market; and
5. The impact of the relief on the rights of third parties.

In *Adarand v. Peña*, the United States Supreme Court extended the analysis of strict scrutiny to race-based federal enactments such as the United States Department of Transportation (“USDOT”) Disadvantaged Business Enterprise (“DBE”) program for federally assisted transportation contracts (which applies to the Texas Department of Transportation’s (“TxDOT” or “Agency”) Federal Highway Administration (“FHWA”)-assisted prime contracts and Federal Aviation Administration (“FAA”)-assisted prime contracts. Just as in the state and local government context, the national legislature must have a compelling governmental interest for the use of race, and the remedies adopted must be narrowly tailored to that evidence.

Most federal courts, including the Fifth Circuit, have subjected preferences for Women-Owned Business Enterprises (“WBEs”) to “intermediate scrutiny”. Gender-based classifications must be supported by an “exceedingly persuasive justification” and be “substantially related to the objective”. However, appellate courts have applied strict scrutiny to the gender-based presumption of social disadvantage in reviewing the constitutionality of the DBE program or held that the results would be the same under strict scrutiny.

Classifications not based upon a suspect class (race, ethnicity, religion, national origin or gender) are subject to the lesser standard of review called “rational basis” scrutiny. Thus, preferences for persons with disabilities or veteran status may be enacted with vastly less evidence than is required for race- or gender-based measures meant to combat historic discrimination.

To comply with *Adarand*, Congress reviewed and revised the DBE program statute² and implementing regulations³ for federal-aid contracts in the transportation industry. The program governs TxDOT’s receipt of federal funds from the Federal

Highway Administration (“FHWA”) and the Federal Aviation Administration (“FAA”).

Agencies that receive FHWA and FAA grants for planning or development and award prime contracts for projects that equal or exceed an accumulative amount of \$250,000.00 in a fiscal year must have a DBE program and must meet related requirements as an expressed condition of receiving these funds. Therefore, TxDOT must establish a DBE program plan in conformance with 49 C.F.R. Part 26.

TxDOT must use a two-step goal-setting process to establish its overall triennial DBE goal for FHWA and FAA funded contracts. TxDOT’s overall triennial goal must be based upon the relative availability of DBEs and reflect the level of DBE participation that would be expected absent the effects of discrimination.⁴

Under Step 1, TxDOT must determine the base figure for the relative availability of DBEs, and one approved method is to use data from a disparity study.⁵ Under Step 2, TxDOT must examine all evidence available in its jurisdiction to determine whether to adjust the base figure. TxDOT must consider the current capacity of DBEs as measured by the volume of work DBEs have performed in recent years.⁶ In addition to the overall goal, TxDOT must set narrowly tailored goals on specific FHWA and FAA funded contracts where warranted. TxDOT is required to set contract goals based upon the availability of DBEs to perform anticipated work scopes—including the work estimated to be performed by the prime contractor—of the individual contract.⁷

The case law on the USDOT DBE program should guide TxDOT’s program for state funded contracts. Part 26 has been upheld by every court, and state programs for Historically Underutilized Businesses (“HUBs”) or Minority- and Women-Owned Business Enterprises (“M/WBEs”) will be judged under this legal framework. Part 26 has been upheld by every court, and state and local programs for Minority- and Women-Owned Business Enterprises (“M/WBEs”) will be judged under this legal framework.⁸

The following are the evidentiary elements courts have looked to in examining the basis for and determining the constitutional validity of race- and gender-conscious

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2. See the Transportation Equity Act for the 21st Century (“TEA-21”), Pub. L. No. 105-178 (b)(1), June 22, 1998, 112 Stat. 107, 113.
 3. 49 C.F.R. Part 26.
 4. 49 C.F.R. § 26.45(b).
 5. 49 C.F.R. § 26.45(c)(3).
 6. 49 C.F.R. § 26.45(d)(1)(i).
 7. 49 C.F.R. § 26.51 (e)(2).
 8. *Midwest Fence Corp. v. US Department of Transportation, Illinois Department of Transportation, Illinois State Toll Highway Authority*, 840 F.3d at 953 (7th Cir. 2016) (“*Midwest Fence II*”).

state and local programs and the steps in performing a disparity study necessary to meet those elements.

- Define TxDOT's Market Areas
- Examine Disparities between TxDOT's Utilization of HUBs and HUB Availability
- Examine the Results of TxDOT's Unremediated Markets
- Analyze Economy-Wide Evidence of Race- and Gender-Based Disparities
- Evaluate Anecdotal Evidence of Race- and Gender-based Barriers

Even if TxDOT has a strong basis in evidence to conclude that race-based measures are needed to remedy identified discrimination, its program must still be narrowly tailored to that evidence. As discussed above, state and local programs that closely mirror USDOT's DBE program have been upheld using that framework. The courts have repeatedly examined the following factors in determining whether race-based remedies are narrowly tailored to achieve their purpose:

- The efficacy of race-neutral remedies at overcoming identified discrimination;
- The relationship of numerical benchmarks for government spending to the availability of minority- and women-owned firms and to subcontracting goal setting procedures;
- The flexibility of the program requirements, including the provision for good faith efforts to meet goals and contract-specific goal setting procedures;
- The congruence between the remedies adopted and the beneficiaries of those remedies;
- Any adverse impact of the relief on third parties; and
- The duration of the program.

B. Study Methodology and Data

The methodology for this study embodies the constitutional principles of *City of Richmond v. Croson*, and best practices for designing race- and gender-conscious and small business contracting programs. The CHA approach has been specifically upheld by the federal courts. It is also the approach developed by Ms. Holt for the National Academy of Sciences that is now the recommended standard for designing legally defensible disparity studies.

We determined the TxDOT's utilization of DBEs and HUBs and the availability of DBEs and HUBs in the Agency's geographic and industry market area. We then

compared utilization to availability to calculate disparity ratios between those two measures for state funded contracts. We further analyzed disparities in the wider economy, where affirmative action is rarely practiced, to evaluate whether barriers continue to impede opportunities for minorities and women when remedial intervention is not imposed. We gathered anecdotal data on DBEs' and HUBs' experiences with obtaining TxDOT contracts and associated subcontracts. We examined race- and gender-based barriers throughout the economy through public meetings, focus groups with business owners and stakeholders, an electronic survey and interviews with agency staff.

Based on the results of these extensive analyses, we make recommendations for the Texas Department of Transportation's DBE and HUB programs.

C. Study Findings

1. The Texas Department of Transportation's Disadvantaged Business Enterprise Program

TxDOT receives financial assistance from the Federal Highway Administration ("FHWA"), the Federal Aviation Administration ("FAA") and the Federal Transit Administration.⁹ As a condition of receipt, the Department must administer a DBE program that complies with 49 C.F.R. Part 26 ("Part 26") for FHWA and FTA funded contracts and 49 C.F.R. Part 23 ("Part 23") for FAA funded contracts. TxDOT's current DBE Program Plan contains all required Part 26 elements.

TxDOT is a certifying member of the Texas Unified Certification Program ("TUCP"). To qualify for DBE certification, an applicant firm must demonstrate that it is a for-profit small business concern and at least 51 percent owned and controlled by socially and economically disadvantaged individuals. The work performed by certified DBEs must meet the North American Industry Classification System ("NAICS") code for the type of services to be performed. Certified firms are listed in the TUCP statewide directory available online.

The Civil Rights Division ("CIV") administers TxDOT's DBE program. The Director serves as TxDOT's DBE Liaison Officer ("DBELO"). The DBELO is responsible for implementing all aspects of the DBE Program.¹⁰ This includes, but is not limited to, identifying contracts and solicitations so that DBE goals are included in procurement documents, as well as monitoring the results of the program. The DBELO works with CIV professional staff to administer and coordinate

9. TxDOT's Public Transportation Division chose not to participate in this study.

10. As required by Part 26, the DBELO has direct, independent access to TxDOT's Executive Director.

TxDOT's DBE Program Plan. Using a tiered approach of contract oversight, program administration, and verification of contractor compliance at Division and District levels, CIV ensures compliance with all provisions of Part 26.

In conformance with Part 26, prompt payment obligations and release of retainage obligations¹¹ are set forth in USDOT-assisted contracts.¹² TxDOT may pursue actions against the prime contractor for failure to execute prompt payment requirements.

Vendors may enroll in the Department's Early Payment Program ("EPP"). Vendors receive expedited payment in exchange for a discount, which is deducted from the gross amount of the invoice based upon the number of days the payment is paid early. TxDOT also has a joint check policy that delineates the requirements for a joint check agreement between a DBE subcontractor and a prime contractor to the DBE's materials supplier.

TxDOT follows the GFE guidance set forth in Appendix A of Part 26 as its guide in evaluating all GFEs. GFEs must be documented before contract award and through the life of the contract. DBEs may count the work they perform with their own forces, as well as work performed by DBE subcontractors and suppliers toward goals. If a goal cannot be met in whole or in part, the prime contractor must submit a *Certification of Good Faith Efforts Form* along with supporting documentation in DMS. Prime contractors must make GFEs to replace a DBE that is terminated or that has otherwise failed to complete its work on a contract with another certified DBE, to the extent required to meet the contract goal.

An important part of the compliance review process is whether the certified firm is performing a commercially useful function ("CUF"). The given firm must be certified in the North American Industry Classification System ("NAICS") code(s) in order for the prime contractor to receive credit towards meeting the applicable goal. TxDOT field personnel conduct CUF reviews and inspect job-sites to verify that the DBE firm is performing and managing the work.¹³

TxDOT District staff are responsible for monitoring goal attainment during the project. If not meeting the goal, the prime contractor will be required to pro-

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11. Retainage means the percent of each contractor payment retained until contract completion. Retainage provides an incentive to the contractor or subcontractor to complete a project and to give the agency protection against problems such as liens, contractual defaults, and delays.
 12. These clauses are both a Part 26 requirement and a contractual requirement.
 13. Commercially useful function is defined in 49 C.F.R. § 26.55 (c) 1 as: a discrete set or group of tasks, the responsibility for performance of which is discharged by the DBE by using its own forces or by actively supervising on-site the execution of the tasks by entity for whose work the DBE is responsible. Without limiting the generality of the foregoing, a DBE is considered not to be performing a commercially useful function if it subcontracts to non-DBEs more than 50 percent of a contract being counted towards the applicable DBE participation goal.

vide a corrective action plan to meet the goal or to document its good faith efforts.

Failure by the prime contractor to carry out DBE program requirements constitutes a material breach of contract. TxDOT reports any false, fraudulent, or dishonest conduct associated with the DBE program to the USDOT Office of Inspector General.

TxDOT employs a variety of outreach and training opportunities. CIV conducts webinars for prime contractors and DBEs which include demonstrations on how to submit monthly project information on progress reports in the DMS and verify progress payments. TxDOT also administers the Alliance Program that provides DBEs with firm-specific training and guidance to help them become competitive within the heavy highway or construction industry. TxDOT provides five training guides available on its website for program administration to assist participants in the DBE program.

2. The Texas Department of Transportation’s Historically Underutilized Business Program

Along with other governmental agencies of the State of Texas (“State”), TxDOT administers the State’s Historically Underutilized Business (“HUB”) Program. The HUB program was instituted in 1991. The HUB Program seeks to promote full and equal procurement and business opportunities for small, minority- and women-owned businesses. TxDOT’s Policy is to provide equal access and opportunities for minority-, woman-, and service-disabled veteran-owned businesses and to implement the HUB Program via race- and gender-neutral means.

Title 34 of the Texas Administrative Code (“TAC”) § 20.281 and Government Code § 2161.181 and §2161.182, requires each State agency to make a good faith effort to utilize HUBs in contracts for construction, services (including professional and consulting services) and commodities purchases (including emergency services). The HUB program sets aspirational goals by procurement category. TxDOT achieves this by contracting directly with HUBs or indirectly through subcontracting opportunities. HUB subcontracting plans are required for contracts over \$100,000.00.

CIV’s HUB Program Section provides direction and consultation to TxDOT’s Divisions and Districts pertaining to the administration of the HUB Program and oversees the following: Managing and maintaining HUB policy and procedures; Assisting and verifying HUB certification; Ensuring subcontractor compliance; Providing TxDOT’s staff with HUB requirements during the procurement and contract phase; Providing HUB requirements during the pre-bid and post award meetings; Participating and facilitating HUB internal and

external communications; Collecting, analyzing and submitting various HUB reports; and Performing and managing all other HUB Program initiatives, as assigned.

To qualify as a HUB, the applicant must submit a HUB application to the Texas Comptroller of Public Accounts. The applicant firm must be a for-profit entity whose principal place of business (defined as the location where the qualifying owner directs, controls, and coordinates daily operations and activities) is in Texas and is an American citizen and Texas resident. The firm must be at least 51 percent owned by an Asian-Pacific American, Black American, Native American, American woman and/or service-disabled veteran, who resides in the State and actively participates in the control, operations and management of the entity's affairs.

If TxDOT certifies a DBE, it also may certify that business as a HUB if the business meets the respective requirements, pursuant to an agreement with the Texas Comptroller of Public Accounts. HUB certification is good for four years, provided that the business continues to meet the eligibility requirements.

TxDOT and other State agencies use the Centralized Master Bidder's List/HUB Directory to solicit bids from certified HUBs. Prime contractors use the Directory to identify HUBs for subcontracting opportunities.

Contractors must make a good faith effort to meet or exceed the contract's HUB goal. The *HUB Subcontracting Plan* ("HSP") must provide prescribed information for each of the listed subcontractors. The HSP is required as a matter of responsiveness. The vendor must report to TxDOT the volume of work performed under the contract, and the portion of the work that was performed with its employees, non-HUB contractors/vendors, and other HUB vendors. During the course of the contract, TxDOT's staff document the contractor's/vendor's GFE compliance in the contract file. TxDOT must audit the contractor's or vendor's compliance with the HSP.

TxDOT's staff monitor and review revisions to either the HSP or the original scope of the contract. They also conduct audits of the HSP Prime Contractor Assessment Report and the HSP Compliance Review Form to ensure HUB program integrity.

3. Experiences with Obtaining Texas Department of Transportation Contracting Opportunities

To explore the experiences of businesses seeking opportunities on State contracts, we solicited input from 507 individuals and stakeholder representatives about their experiences and solicited their suggestions for changes.

Accessing Information about TxDOT's Contract Opportunities: Information about TxDOT projects was difficult for some small firms to access. Building relationships was reported to be key to accessing consulting contracts and certification. Some DBEs suggested that more targeted outreach by TxDOT would help them to develop the necessary relationships.

Obtaining TxDOT Work: Minority- and women-owners generally reported that TxDOT's DBE program was an important vehicle for reducing barriers and leveling the playing field. Several certified firms reported that TxDOT is one of the easier agencies with which to do business. The HUB program's prohibition on counting a certified firm's self-performance towards the goal reduces the profitability and options for HUBs.

Recently established DBEs often complained that it is difficult to break into the networks for TxDOT projects. General contractors agreed that they use firms that they have worked with when possible to reduce risk and ensure a timely and quality job.

Assisting DBEs on TxDOT Projects: Some large firms stated that TxDOT needs to do more to assist them to use new DBEs. Many TxDOT contracts are too large for DBEs and other smaller firms to bid on or even to perform as subcontractors. Many DBEs, especially in consulting services, would like to perform as prime contractors. Contract size, and complexity are major impediments to their taking on the leading role. For small professional services firms, the ability to add staff in response to specific opportunities was one way to increase their ability to serve as prime consultants on more complex projects.

Meeting TxDOT Financial and Prequalification Requirements: Bonding and financial requirements inhibit small firms' ability to bid TxDOT work. TxDOT's prequalification requirements, including that firms submit audited financial statements, were seen as an unnecessary cost that limits competition and small firms' ability to bid for TxDOT work.

Receiving Timely Payments: DBEs reported few payment issues on TxDOT contracts. The recently installed Diversity Management System program has helped to increase transparency by providing information about payments by TxDOT to prime contractors. Some DBE subcontractors reported that while the DMS system has been an improvement, some refinements would ease the burden of compliance. For example, one person suggested that TxDOT use one common number for reporting, because a subcontractor might not have access to the contract or project number.

Meeting DBE and HUB Contract Goals: Most general contractors and prime consultants reported that they were able to meet DBE contract goals. Some general contractors stated that using DBEs increases the cost of TxDOT projects. Many general contractors have difficulty meeting contract goals. One

challenge is the reported lack of capacity of DBEs and the small size of the available pool of firms.

Providing Prime Firms with More Information about DBE Contractors: Some bidders would like assistance from TxDOT in determining whether a particular firm can perform a particular scope of work. Many prime firms reported that TxDOT does not fully understand their risks in using DBEs. They proposed some risk shifting from the contractor to the Department or increase in the price of the job to address DBE issues. Evaluating the performance of DBEs and vetting their skills prior to being awarded a subcontract was sought by some general contractors.

Permitting the prime contractor to finish the work that a DBE is unable to complete was one suggestion to reduce the burden on the primes. Adjusting the contract goal when change orders are needed would help general contractors. Some general contractors reported that TxDOT was reasonable when there is a scope change.

Meeting TxDOT Prime Contractor Paperwork and Process Requirements: The long delay in adding new NAICS codes to a DBE's certification hampers prime contractor's ability to meet goals and reduces opportunities for DBEs. Utilizing subcontractors was said to sometimes increase costs because the prime contractor could perform the work at a lower cost using its own forces. Several prime contractors refuse to use trucking dollars to meet contract goals because the paperwork burdens are too great. This reduces opportunities for DBE truckers.

Another challenge for prime bidders is the perceived lack of consistency between TxDOT's districts when implementing the DBE program. Several large primes complained that TxDOT's outside program managers are often not well versed in the intricacies of the DBE program, thus increasing the prime contractor's burdens in seeking to meet contract goals. Indefinite delivery/indefinite quantity or job order contracts present significant issues for meeting goals.

Many general contractors reported that they do not attempt to submit good faith efforts documentation when they are unable to meet the DBE contract goal at the time of bid submission. Some firms had successfully submitted GFEs when they were unable to meet the contractual goal during project performance.

Some non-DBEs stated that in their opinion, the program discriminates against White males. A few participants believe that the firms owned by women are mostly "front" companies, where the woman owner is not managing and controlling the firm on a day-to-day basis.

Providing More Technical Assistance and Supportive Services: Many DBEs reported that TxDOT needs to provide more technical assistance and supportive services. While the outreach events are well attended and informative, direct support to firms would increase their capabilities. Several prime contractors agreed. The quality of the assistance that TxDOT has provided was questioned by some prime firms. Another general contractor disagreed and believed that TxDOT does an excellent job of assisting DBEs. Some firms stated that it is difficult for small shops to take the time to participate in supportive services programs.

Supporting Mentor-Protégé Relationships: Many DBEs supported a mentor-protégé program to develop their firms' capacities and business networks. A significant number of prime contractors also supported the mentor-protégé concept. Several large firms already provide informal support to DBEs. A few prime firms cautioned that without a formal program, a general contractor could run afoul of the DBE program requirements that a DBE remain independent and perform a commercially useful function. Some incentive or credit from TxDOT for assisting DBEs was one approach to supporting the overall objectives of the DBE program.

Overall, the programs succeed in leveling the playing field for highway work and prime contractors were generally able to comply with diversity requirements. However, there are concerns to address, including accessing timely information about TxDOT opportunities; reducing contract size and complexity; difficulty in subcontractors moving into the role of prime vendors; mitigating the risks in using small and new firms; reducing obstacles to using DBE truckers; ensuring consistency in program interpretation and administration between TxDOT's districts and from project to project; the provision of additional technical assistance; and developing new initiatives to support the development and success of DBEs and HUBs.

4. Utilization, Availability and Disparity Analyses for the Texas Department of Transportation

CHA analyzed contract data for 2012 through 2016 for TxDOT's contracts funded with monies from three sources: the Federal Highway Administration (FHWA), the Federal Aviation Administration (FAA), and state dollars. We received an Original Contract Data File from TxDOT which contained 19,066 contracts, worth \$29,902,929,343, across all funding sources. Because of this large volume of contracts, we created a sample file for our analysis. The sample contained 801 contracts, with an award amount of \$13,267,616,384. The Sample File contained 396 contracts funded with FHWA dollars; 76 contracts funded with FAA dollars; and 329 contracts funded with State dollars. (These contracts represented the contracts with the largest dollar values.)

We then constructed all the fields necessary for our analysis where they were missing in TxDOT’s contract records (e.g., industry type; zip codes; NAICS codes of prime contractors and subcontractors; non-DBE subcontractor information, including payments, race, gender; etc.). Below are the data for the resulting Final Contract Data File for each funding source:

- FHWA funded contracts:
 1. total award amount of \$9,582,519,586
 2. representing 281 contracts to primes;
 3. 2,716 associated subcontracts that received \$3,858,102,875.
- FAA funded contracts:
 1. total award amount of \$162,190,832
 2. representing 44 contracts to primes;
 3. 381 associated subcontracts that received \$41,861,752.
- State funded contracts:
 1. total award amount of \$3,522,095,966
 2. representing 239 contracts to primes;
 3. 1,936 associated subcontracts that received \$1,275,005,341.

The Final Contract Data Files were used to determine the geographic and product markets for the analyses, to estimate the utilization of DBEs on those contracts, and to calculate the DBE availability in TxDOT’s marketplace.

The following tables present the NAICS codes, the label for each NAICS code, and the industry percentage distribution of spending across NAICS codes, by type of contract for each funding source. Chapter IV provides tables disaggregated by dollars paid to prime contractors, as well as dollars paid to subcontractors on contracts with subcontracting opportunities.

a. TxDOT’s Federal Highway Administration Funded Contracts

Table 1-1: Industry Percentage Distribution of Contracts by Dollars

NAICS Code	NAICS Code Description	Pct Total Contract Dollars	Cumulative Pct Total Contract Dollars
237310	Highway, Street, and Bridge Construction	60.64%	60.64%
541330	Engineering Services	15.56%	76.20%
238210	Electrical Contractors and Other Wiring Installation Contractors	2.56%	78.76%

NAICS Code	NAICS Code Description	Pct Total Contract Dollars	Cumulative Pct Total Contract Dollars
488490	Other Support Activities for Road Transportation	2.04%	80.80%
238910	Site Preparation Contractors	1.80%	82.60%
238120	Structural Steel and Precast Concrete Contractors	1.58%	84.18%
238990	All Other Specialty Trade Contractors	1.50%	85.69%
541310	Architectural Services	1.33%	87.02%
484220	Specialized Freight (except Used Goods) Trucking, Local	1.32%	88.33%
541420	Industrial Design Services	1.29%	89.63%
561730	Landscaping Services	1.14%	90.77%
Total			100.0%^a

a. Agency spending across another 156 NAICS codes comprised 9.23% of all spending. The entire list of NAICS codes is contained in Appendix D.

Source: CHA analysis of TxDOT data

To determine the relevant geographic market area for each funding source, we applied the well accepted standard of identifying the firm locations that account for at least 75 percent of contract and subcontract dollar payments in the contract data file.¹⁴ Location was determined by ZIP code and aggregated into counties as the geographic unit. The State of Texas captured 96.7 percent of the unconstrained product market dollars and, therefore, the state constituted the geographic market for FHWA funded contracts.

When the unconstrained product market was limited to the State of Texas, the result was the *constrained product market*. The next step was to determine the dollar value of TxDOT’s utilization of DBEs as measured by payments to prime firms and subcontractors and disaggregated by race and gender. Table 1-1 presents the utilization data by all industry sectors. Chapter IV provides detailed breakdowns of these results.

14. National Academies of Sciences, Engineering, and Medicine 2010, *Guidelines for Conducting a Disparity and Availability Study for the Federal DBE Program*. Washington, DC: The National Academies Press. <https://doi.org/10.17226/14346>. (“National Disparity Study Guidelines”), p. 49.

Table 1-2: Distribution of Contract Dollars by Race and Gender
(share of total dollars)

NAICS Code	Black	Hispanic	Asian	Native American	White Women	DBE	Non-DBE	Total
212321	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	100.0%	100.0%
236210	0.0%	5.9%	7.8%	36.1%	1.2%	51.0%	49.0%	100.0%
237110	0.0%	4.1%	0.0%	0.0%	6.4%	10.5%	89.5%	100.0%
237310	0.6%	1.1%	0.1%	0.0%	1.8%	3.6%	96.4%	100.0%
237990	0.0%	16.7%	0.0%	0.0%	3.0%	19.7%	80.3%	100.0%
238120	0.1%	9.5%	46.3%	9.0%	1.3%	66.2%	33.8%	100.0%
238210	0.0%	3.9%	0.0%	0.0%	5.3%	9.2%	90.8%	100.0%
238220	0.5%	12.9%	0.0%	0.0%	49.3%	62.8%	37.2%	100.0%
238910	1.2%	5.8%	11.5%	2.6%	14.7%	35.7%	64.3%	100.0%
238990	0.0%	0.9%	0.0%	0.0%	6.6%	7.6%	92.4%	100.0%
484220	0.8%	46.9%	0.0%	0.1%	10.1%	57.8%	42.2%	100.0%
488490	0.0%	7.2%	0.0%	0.0%	0.0%	7.2%	92.8%	100.0%
541219	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	100.0%	100.0%
541310	0.0%	0.0%	0.7%	0.0%	19.3%	20.0%	80.0%	100.0%
541330	0.6%	2.6%	0.7%	0.1%	8.3%	12.2%	87.8%	100.0%
541380	3.3%	71.5%	3.8%	0.0%	0.0%	78.5%	21.5%	100.0%
541420	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	100.0%	100.0%
541620	0.0%	5.5%	0.3%	0.0%	13.4%	19.2%	80.8%	100.0%
561730	0.2%	1.0%	0.1%	0.0%	11.4%	12.7%	87.3%	100.0%
Total	0.5%	2.9%	1.2%	0.4%	3.8%	8.9%	91.1%	100.0%

Source: CHA analysis of TxDOT data.

Using the “custom census” approach to estimating availability and the further assignment of race and gender using the Master D/M/WBE Directory and other sources, we determined the aggregated availability of disadvantaged, minority- and women-owned firms (collectively, “DBEs”), weighted by TxDOT’s spending in its geographic and industry markets, to be 28.1 percent. Table 1-3 presents the weighted availability data for all product sectors combined for the racial and gender categories.

Table 1-3: Aggregated Weighted Availability

	Black	Hispanic	Asian	Native American	White Women	DBE	Non-DBE	Total
Total	4.8%	12.6%	1.2%	0.9%	8.6%	28.1%	71.9%	100.0%

Source: CHA analysis of TxDOT data; Hoovers; CHA Master Directory

The following section that includes six tables presents similar data on industry percentage distribution of spending, the geographic market, distribution of contract dollars for race and gender, and aggregated weighted availability for FAA funded contracts.

b. TxDOT’s Federal Aviation Administration Funded Contracts

Table 1-4: Industry Percentage Distribution of Contracts by Dollars

NAICS Code	NAICS Code Description	Pct Total Contract Dollars	Cumulative Pct Total Contract Dollars
237310	Highway, Street, and Bridge Construction	67.91%	67.91%
238210	Electrical Contractors and Other Wiring Installation Contractors	7.5803%	75.49%
236220	Commercial and Institutional Building Construction	5.5781%	81.07%
238990	All Other Specialty Trade Contractors	3.3301%	84.40%
541330	Engineering Services	2.6148%	87.02%
238910	Site Preparation Contractors	2.1558%	89.17%
238110	Poured Concrete Foundation and Structure Contractors	1.2048%	90.38%
238220	Plumbing, Heating, and Air-Conditioning Contractors	1.0930%	91.47%
Total			100.0%^a

a. Agency spending across another 67 NAICS codes comprised 8.53% of all spending. The entire list of NAICS codes is contained in Appendix D.

Source: CHA analysis of TxDOT data

The state of Texas captured 95.7 percent of the unconstrained product market dollars and, therefore, the state constituted the geographic market for FAA funded contracts.

**Table 1-5: Distribution of Contract Dollars by Race and Gender
(share of total dollars)**

NAICS Code	Black	Hispanic	Asian	Native American	White Women	DBE	Non-DBE	Total
236220	0.0%	7.4%	0.0%	0.0%	1.4%	8.8%	91.2%	100.0%
237110	34.7%	0.0%	0.0%	0.0%	0.0%	34.7%	65.3%	100.0%
237120	0.0%	37.5%	0.0%	0.0%	0.0%	37.5%	62.5%	100.0%
237310	0.0%	1.4%	0.6%	0.0%	3.7%	5.6%	94.4%	100.0%
238110	9.4%	0.0%	0.0%	0.0%	19.2%	28.6%	71.4%	100.0%
238120	0.0%	0.0%	0.0%	36.1%	24.4%	60.5%	39.5%	100.0%
238210	17.7%	25.2%	0.0%	0.0%	10.6%	53.6%	46.5%	100.0%
238220	0.0%	11.5%	0.0%	0.0%	52.1%	63.5%	36.5%	100.0%
238310	0.0%	0.0%	0.0%	0.0%	0.7%	0.7%	99.4%	100.0%
238390	0.0%	17.8%	11.1%	0.0%	26.8%	55.7%	44.3%	100.0%
238910	0.0%	0.0%	0.0%	0.0%	0.4%	0.4%	99.6%	100.0%
238990	0.0%	0.1%	0.0%	3.4%	64.0%	67.4%	32.6%	100.0%
423310	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	100.0%	100.0%
423510	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	100.0%	100.0%
484220	0.0%	5.0%	0.0%	26.7%	57.3%	89.0%	11.0%	100.0%
541330	7.5%	0.8%	0.0%	0.0%	30.1%	38.4%	61.6%	100.0%
Total	2.1%	3.9%	0.5%	0.4%	6.7%	13.6%	86.4%	100.0%

Source: CHA analysis of TxDOT data.

Table 1-6: Aggregated Weighted Availability

	Black	Hispanic	Asian	Native American	White Women	DBE	Non-DBE	Total
Total	5.8%	11.7%	1.5%	0.6%	7.7%	27.4%	72.7%	100.0%

Source: CHA analysis of TxDOT data; Hoovers; CHA Master Directory

c. TxDOT’s State Funded Contracts

Table 1-7: Industry Percentage Distribution of Contracts by Dollars

NAICS Code	NAICS Code Description	Pct Total Contract Dollars	Cumulative Pct Total Contract Dollars
237310	Highway, Street, and Bridge Construction	40.0%	40.0%
541330	Engineering Services	20.6%	60.5%
561320	Temporary Help Services	5.9%	66.4%
561730	Landscaping Services	3.2%	69.7%
541512	Computer Systems Design Services	3.2%	72.9%
238210	Electrical Contractors and Other Wiring Installation Contractors	2.2%	75.0%
238120	Structural Steel and Precast Concrete Contractors	2.1%	77.1%
541611	Administrative Management and General Management Consulting Services	2.0%	79.1%
541420	Industrial Design Services	1.9%	81.0%
541620	Environmental Consulting Services	1.7%	82.8%
238910	Site Preparation Contractors	1.4%	84.2%
327320	Ready-Mix Concrete Manufacturing	1.3%	85.5%
511210	Software Publishers	1.1%	86.6%
Total			100.0%^a

a. Agency spending across another 131 NAICS codes comprised 13.4% of all spending. The entire list of NAICS codes is contained in Appendix D.

Source: CHA analysis of TxDOT data

The State of Texas captured 92.2 percent of the unconstrained product market dollars and, therefore, the state constituted the geographic market for State funded contracts.

**Table 1-8: Distribution of Contract Dollars by Race and Gender
(share of total dollars)**

NAICS Code	Black	Hispanic	Asian	Native American	White Women	HUB	Non-HUB	Total
236210	5.3%	0.1%	0.0%	0.0%	0.0%	5.4%	94.6%	100.0%
237110	0.0%	7.2%	0.0%	0.0%	0.6%	7.8%	92.2%	100.0%
237310	0.3%	3.0%	0.3%	0.0%	2.8%	6.4%	93.6%	100.0%
237990	0.0%	6.4%	0.0%	0.0%	5.2%	11.6%	88.4%	100.0%
238110	51.0%	43.6%	0.0%	0.0%	0.6%	95.2%	4.8%	100.0%
238120	0.6%	31.2%	15.9%	0.9%	3.3%	51.9%	48.1%	100.0%
238210	0.0%	1.9%	0.7%	0.0%	15.7%	18.2%	81.8%	100.0%
238910	0.0%	3.5%	5.5%	1.8%	8.9%	19.6%	80.4%	100.0%
238990	0.7%	3.9%	0.0%	0.0%	16.3%	20.9%	79.1%	100.0%
327320	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	100.0%	100.0%
423320	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	100.0%	100.0%
423430	0.0%	0.0%	0.0%	0.0%	100.0%	100.0%	0.0%	100.0%
484220	0.0%	19.0%	0.0%	0.1%	8.6%	27.7%	72.3%	100.0%
511210	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	100.0%	100.0%
541310	0.0%	4.1%	15.3%	0.0%	1.5%	20.9%	79.1%	100.0%
541330	1.8%	10.0%	4.8%	0.3%	3.5%	20.4%	79.6%	100.0%
541370	3.1%	68.3%	6.5%	0.0%	13.7%	91.5%	8.5%	100.0%
541380	26.2%	17.2%	8.2%	0.0%	40.6%	92.2%	7.8%	100.0%
541420	0.1%	2.3%	1.4%	0.0%	0.0%	3.8%	96.2%	100.0%
541512	1.3%	0.0%	2.2%	0.0%	0.5%	3.9%	96.1%	100.0%
541611	0.0%	0.2%	0.0%	0.0%	0.6%	0.9%	99.1%	100.0%
541620	1.9%	8.0%	3.5%	0.0%	12.2%	25.7%	74.3%	100.0%
561320	0.1%	0.1%	6.9%	0.0%	3.3%	10.5%	89.5%	100.0%
561730	0.0%	1.2%	0.0%	0.1%	39.9%	41.2%	58.8%	100.0%
Total	1.0%	5.5%	2.4%	0.1%	5.9%	14.9%	85.2%	100.0%

Source: CHA analysis of TxDOT data.

Table 1-9: Aggregated Weighted Availability

	Black	Hispanic	Asian	Native American	White Women	HUB	Non-HUB	Total
Total	4.5%	9.3%	2.1%	0.5%	8.3%	24.8%	75.2%	100.0%

Source: CHA analysis of TxDOT data; Hoovers; CHA Master Directory

To meet the constitutional test that all groups must have suffered discrimination in the Agency’s markets in order to be eligible for the benefits of the HUB program for State funded contracts, we next calculated disparity ratios comparing the State’s utilization of HUBs as prime contractors and subcontractors measured in dollars paid to the availability of these firms in its market areas. Table 1-10 presents these results.

A “large” or “substantively significant” disparity is commonly defined by courts as utilization that is equal to or less than 80 percent of the availability measure. A substantively significant disparity supports the inference that the result may be caused by the disparate impacts of discrimination.¹⁵

A statistically significant disparity means that an outcome is unlikely to have occurred as the result of random chance alone. The greater the statistical significance, the smaller the probability that it resulted from random chance alone. A more in-depth discussion of statistical significance is provided in Appendix C.

Substantive and Statistical Significance

- ‡ Connotes these values are substantively significant. Courts have ruled the disparity ratio less or equal to 80% represent disparities that are substantively significant. (See Footnote 17 for more information.)
- * Connotes these values are statistically significant at the 0.05 level. (See Appendix C for more information.)
- ** Connotes these values are statistically significant at the 0.01 level. (See Appendix C for more information.)
- *** Connotes these values are statistically significant at the 0.001 level. (See Appendix C for more information.)

15. See U.S. Equal Opportunity Employment Commission regulation, 29 C.F.R. § 1607.4(D) (“A selection rate for any race, sex, or ethnic group which is less than four-fifths (4/5) (or eighty percent) of the rate for the group with the highest rate will generally be regarded by the Federal enforcement agencies as evidence of adverse impact, while a greater than four-fifths rate will generally not be regarded by Federal enforcement agencies as evidence of adverse impact.”).

Table 1-10: Disparity Ratios by Demographic Group

	Black	Hispanic	Asian	Native American	White Women	HUB	Non-HUB	Total
Total	21.8%‡	58.6%‡*	113.0%	18.2%‡	71.0%‡	59.8%‡***	113.3%***	100.0%

Source: CHA analysis of TxDOT data; Hoovers; CHA Master Directory.

*** Indicates statistical significance at the 0.001 level

* Indicates statistical significance at the 0.05 level

‡ Indicates substantive significance

5. Analysis of Economy-Wide Race and Gender Disparities in the State’s Market

To gain additional insight into whether DBEs and HUBs enjoy a level playing field for TxDOT work, we explored the Census Bureau data and literature relevant to how discrimination in the agency’s industry market and throughout the wider economy affects the ability of minorities and women to fairly and fully engage in the Department’s prime contract and subcontract opportunities.

We analyzed the following data and literature:

- Data from the Census Bureau’s American Community Survey (“ACS”) indicate that in most cases, Blacks, Hispanics, Native Americans Others, and White women were underutilized relative to White men. Controlling for other factors relevant to business outcomes, wages and business earnings were lower for these groups compared to White men. Data from the ACS further indicate that non-Whites and White women are much less likely to form businesses compared to similarly situated White men.
- Data from the Census Bureau’s Survey of Business Owners indicate very large disparities between MWBE firms and non-MWBE firms when examining the sales of all firms, the sales of employer firms (firms that employ at least one worker), or the payroll of employer firms.
- The literature on barriers to accessing commercial credit and/or the development of human capital further reports that minorities continue to face constraints on their entrepreneurial success based on race. These constraints negatively impact the ability of firms to form, to grow, and to succeed.

All three types of evidence have been found by the courts to be relevant and probative of whether a government will be a passive participant in overall marketplace discrimination without some type of affirmative intervention. Taken together with anecdotal data, this is the type of proof that addresses whether,

in the absence of contract goals, the TxDOT will be a passive participant in the discriminatory systems found throughout its industry market. These economy-wide analyses are relevant and probative to whether the agency may continue to employ narrowly tailored race- and gender-conscious measures to ensure equal opportunities to access its contracts and associated subcontracts.

6. Qualitative Evidence of Race and Gender Barriers in the Texas Department of Transportation's Market

In addition to quantitative data, the courts look to anecdotal evidence of firms' marketplace experiences to evaluate whether the effects of current or past discrimination continue to impede opportunities for minority- women-owned firms such that race-conscious measures are supportable.

To explore this type of anecdotal evidence, we received input from 507 participants. Many minority and women owners reported that they continue to encounter discriminatory attitudes, stereotypes and negative perceptions of their qualifications, professionalism or capabilities. While sometimes subtle, these biases about minorities' and women's lack of competence infect all aspects of their attempts to obtain contracts and to be treated equally in performing contract work. Minorities and women repeatedly discussed their struggles with negative perceptions and attitudes of their capabilities in the business world.

Summary of issues discussed:

- Several minority owners experienced a stigma in being labeled a "minority" or a "woman" firm.
- The transportation industry is still overwhelmingly White and male, and many minority and women owners believe this hampers their ability to succeed.
- Many women had experienced unfair treatment, sexual harassment or hostile work environments.
- A White man commented that he sees gender bias in the highway business.
- Firms reported that becoming certified as a DBE helped to reduce these barriers.
- Several DBEs rejected the notion that a race- and gender-neutral approach would ameliorate their burdens.

- Longstanding relationships in the highway industry that predate the opening of access to minorities and women continue to hamper DBE opportunities.
- A few White women and one minority man disagreed that race or gender remain barriers to full and fair opportunities in the highway industry; they had not found sexism or racism to be an issue. Some women downplayed the impact of gender discrimination.

We also conducted electronic surveys of Stakeholder groups and firms in TxDOT's market area about their experiences in obtaining work, marketplace conditions and contracting policies. The results mirror those of the interviews. Almost half (35 percent) of minority- or women-owned businesses reported that they still experience barriers to equal contracting opportunities; almost a quarter (21.9 percent) reported having their competency questioned based on their race or gender; and more than a quarter (27.4 percent) reported not having the same access to the information as non-minority-, non-women-owned firms. Almost a sixth (14 percent) also reported experiencing job-related sexual or racial harassment or stereotyping. Comments collected by the surveys also support these findings.

While not definitive proof that TxDOT needs to continue to implement race- and gender-conscious remedies for these impediments, the results of the qualitative data are the types of evidence that, especially when considered in conjunction with the numerous pieces of statistical evidence assembled, the courts have found to be highly probative of whether TxDOT would be a passive participant in a discriminatory market area without affirmative interventions and whether race-conscious remedies are necessary to address that discrimination.

D. Recommendations

The quantitative and qualitative evidence reported in this Study suggest that minorities and women continue to suffer discriminatory barriers to full and fair access to contracts and associated subcontracts in TxDOT's market area. We therefore make the following recommendations.

1. Enhance Race- and Gender-Neutral Measures

Increase Staff Resources for TxDOT's Civil Rights Function: There was general agreement among staff, industry trade group representatives and business owners that TxDOT's civil rights function needs more staff resources. Personnel are stretched thin, resulting in inconsistent interpretations, delays in addressing issues for both DBEs and prime contractors, and increased reliance

on outside consultants who are often reported to be inexperienced in TxDOT policies and processes. The more rural and far flung districts in particular requested more support. Few of the program recommendations will be feasible without more resources.

Increase Contract “Unbundling”: The size and complexity of Department projects is a disincentive to small firms to seek TxDOT contracts. Unbundling projects, providing longer lead times and simplifying requirements would assist smaller businesses to take on some Department work. Maintenance type contracts--which currently are not eligible for contract goal setting-- could be a focus. While it may often be more convenient for staff to bundle services into large contracts, these types of locally performed projects can present opportunities for firms currently too small to move beyond their immediate geographic area to become familiar with TxDOT work. In conjunction with reduced insurance and bonding requirements where possible, unbundled contracts should further support smaller firms’ ability to move from quoting solely as subcontractors to bidding as prime contractors. Unbundling must be conducted, however, within the constraints of the need to ensure efficiency and limit costs to taxpayers.

Expand Technical Assistance Services: While the Department provides extensive supportive services programs, offerings such as webinars or videos on how to do business with the agency, correct invoicing and other day-to-day concerns were requested, especially for firms located outside the major metropolitan areas and in West Texas. Many business owners and representative requested additional training for DBEs on the intricacies of doing business with TxDOT. Topics such as “You’re DBE Certified: Now what?” and “Moving from Subcontractor to Prime Contractor” would be helpful, especially to new market entrants. Several DBEs also recommended training or easy to access information on the functions of the Civil Rights Division and how to seek help, including filing discrimination complaints under Title VI of the Civil rights Act of 1964.

Develop “Unremediated Markets” Data: TxDOT should identify and bid some contracts that have significant opportunities for DBE participation without goals. These “control contracts” can illuminate whether certified firms are used or even solicited in the absence of goals. “Unremediated markets” data are one of the types of evidence courts have held to be probative of whether contract goals are needed to level the playing field for DBEs.

Review DBE Program Policies and Procedures: Although the Department’s DBE program operates well, some revisions based on the feedback of business owners and staff and national best practices would enhance its implementation. In particular, the Department should review the procedure for counting dollars spent with certified truckers. Under the current system, many general

contractors do not use DBE truckers or do not report the participation of those they do use because of the paperwork burdens and other difficulties. Perhaps the Department can appoint an informal group of staff, trade group representatives, prime contractors and DBEs to explore how to address this issue.

In addition, TxDOT should offer regular training, perhaps presented via webinar or videos, to help address the lack of consistency in program interpretation and administration between districts, and between TxDOT and some of its outside construction management firms. While the various handbooks that TxDOT has produced provide comprehensive information, it appears that not all parties are familiar with the policies and procedures. A more direct approach using visual learning tools should be developed.

Enhance Contract Data Collection: TxDOT is large and complex and we suggest the following:

- All divisions track all subcontracting activities. This includes the participation of non-certified firms. Subcontractor information is necessary for the ongoing contractual requirement that subcontractors be paid promptly. The installation of the DMS system is a major improvement, but all districts, divisions and subrecipients must fully participate in order for the system to be used to its full potential as a record keeping and program monitoring tool.
- Conduct ongoing and follow up training on how to use the system for TxDOT personnel, prime contractors and subcontractors.
- Collect the data required under 49 C.F. R. §26.11 to create an overall TxDOT bidders list from the prime contractors and their subcontractors and report the results to the Civil Rights Division.

Provide Additional Training to TxDOT's Recipient Agencies: The Department should conduct regular training for its subrecipients to ensure DBE program compliance and adherence to best practices. In gathering and analyzing contract records and in interviews with business owners and TxDOT staff, it became apparent that many recipients are unclear about the program's requirements and/or are not keeping records that are relevant to conducting a disparity study and to complying with the DBE program's record keeping.

2. Continue to Implement a Narrowly Tailored DBE Program

We recommend TxDOT use the Study to Set the Triennial DBE Goal. 49 C.F.R. §26.45 requires TxDOT to engage in a two-step process to set a triennial goal for DBE participation in its federally funded projects. To determine the Step 1 base figure for the relative availability of DBEs required by § 26.45(c), we suggest the Department use the DBE unweighted availability findings for USDOT-

funded contracts. TxDOT can use past DBE utilization and the statistical disparities in the rates at which DBEs form businesses, provided in Chapter V, for a Step 2 adjustment, if necessary.

Use the Study to Set DBE Contract Goals: The highly detailed unweighted availability estimates in Chapter IV can serve as the starting point for setting narrowly tailored contract goals that reflect the percentage of available DBEs as a percentage of the total pool of available firms. The Department should weigh the estimated scopes of the contract by the availability of DBEs in those scopes, and then adjust the result based on geography and current market conditions (for example, the volume of work currently underway in the market, the entrance of newly certified firms, specialized nature of the project, etc.). Written procedures based detailing the implementation of contract goal setting should be developed and disseminated so that all contracting actors understand the methodology.

We further recommend that contract goals be reviewed when there is a change order greater than some minimum amount (*e.g.*, ten percent). This could result in an increase, a decrease or no change in the contract goal, but it will ensure the constitutionally required flexibility that is the hallmark of a narrowly tailored goal setting and implementation methodology. We also suggest that goals on the individual task orders issued pursuant to on-call or job order contracts be set on the basis of the tasks for the particular order. While this is more administratively burdensome to TxDOT, narrowly tailored goal setting requires some individualized consideration. The Diversity Management System goal setting module should reduce the work of these individual determinations.

Consider "Banking" Race-Neutral Participation: The Department should consider permitting general contractors to "bank" dollars spent, in excess of the contract goal, towards meeting goals on future contracts. A variant would be to permit utilization of DBEs not listed at the time of bid to count towards any shortfall in participation from "condition of award" DBEs. Many general contractors and trade group representatives reported that they might use DBEs more extensively if they were able to receive credit for exceeding the goal or for using DBEs not listed in the original compliance documents. TxDOT could also add a ceiling on how much credit could be banked (*e.g.*, 25 percent of the excess dollars) and or how much credit could be used on a particular contract (*e.g.*, up to 25 percent of the contract goal). This approach was specifically cited by the Fourth Circuit Court of Appeals in upholding NCDOT's M/WBE program for state funded contracts.

Adopt a Pilot Mentor-Protégé Program: TxDOT should consider adopting a pilot Mentor-Protégé Program ("MPP") for DBEs. The DBE program regulations at 49 C.F.R. § 26.35 and the Guidelines of Appendix D to Part 26 should provide

the framework for the program. In addition, the General Counsel's Office at the USDOT has provided some additional guidance, and the USDOT's Office of Small Disadvantaged Business Utilization has adopted a pilot program and provided sample documents.

Consider a Bonding and Financing Program for DBEs: One approach that has proven to be effective for some agencies is to develop an agency-sponsored bonding and financing assistance program for certified firms. This goes beyond the Department's current provision of information about outside bonding resources to providing actual assistance to firms through a program consultant; it is not, however, a bonding guarantee program that places the State's credit at risk or provides direct subsidies to participants. Rather, this concept brings the commitment of a surety company to provide a bond for firms that have successfully completed the program. Other agencies have reported significant increases in DBEs' bonding capacities and ability to take on larger projects using this type of program.

3. Strengthen the HUB Program

TxDOT administers the Historically Underutilized Business ("HUB") program on its state funded contracts pursuant to a State statute that gives the Comptroller the authority to develop the program. The Department is not free to revise the program on its own initiative. However, we suggest that TxDOT work with the Comptroller to enhance the program as follows.

Strengthen the HUB Program by Permitting HUBs to Count Their Self-Performance: Restricting the program to only subcontracting work is highly unusual, and limits opportunities for HUBs to grow into prime vendors. A subcontracting only program also fails to recognize that barriers to prime contracting opportunities are the most difficult for minority and women businesses to overcome. The DBE program has always permitted prime contractors to count self-performance towards meeting contract goals¹⁶, and no court has suggested that this somehow fails strict constitutional scrutiny. This is also "race-neutral" participation, since it would not be the result of contract goals. Counting self-performance would further conform the HUB program counting rules to the DBE program regulations, reducing confusion between the two.

Use the Study to Set HUB Contract Goals: As with DBE contract goals, we recommend TxDOT use the study's unweighted availability estimates as the starting point for contract goal setting.

16. 49 C.F.R. §26.55(a).

4. Develop Performance Measures for Program Success

We suggest the Department develop quantitative performance measures for certified firms and the overall success of the programs to evaluate their effectiveness in reducing the systemic barriers identified by the study. In addition to meeting the triennial goal and the overall HUB goal, possible benchmarks might include: the number of bids or proposals and the dollar amount of the awards, and the goal shortfall where the bidder submitted good faith efforts to meet the contract goal; number and dollar amount of bids or proposals rejected as non-responsive for failure to make good faith efforts to meet the goal; number, type, and dollar amount of DBE and HUB substitutions during contract performance; increased bidding by certified firms; increased prime contract awards to certified firms; and increased “capacity” of certified firms as measured by bonding limits, size of jobs, profitability, etc.

II. LEGAL STANDARDS FOR TEXAS DEPARTMENT OF TRANSPORTATION SMALL BUSINESS PROGRAMS

A. Summary of Constitutional Equal Protection Standards

To be effective, enforceable, and legally defensible, a race-based program for public sector contracts, regardless of funding source, must meet the judicial test of constitutional “strict scrutiny”. Strict scrutiny is the highest level of judicial review. Strict scrutiny analysis is comprised of two prongs:

1. The government must establish its “compelling interest” in remediating race discrimination by current “strong evidence” of the persistence of discrimination. Such evidence may consist of the entity’s “passive participation” in a system of racial exclusion.
2. Any remedies adopted must be “narrowly tailored” to that discrimination; the program must be directed at the types and depth of discrimination identified.¹⁷

The compelling governmental interest prong has been met through two types of proof:

1. Statistical evidence of the underutilization of minority or women firms by the agency and/or throughout the agency’s geographic and industry market area compared to their availability in the market area. These are disparity indices, comparable to the type of “disparate impact” analysis used in employment discrimination cases.
2. Anecdotal evidence of race- or gender-based barriers to the full and fair participation of minority and women firms in the market area and seeking contracts with the agency, comparable to the “disparate treatment” analysis used in employment discrimination cases.¹⁸ Anecdotal data can consist of

17. *City of Richmond v. J.A. Croson Co.*, 488 U.S. 469 (1989).

18. *Id.* at 509.

interviews, surveys, public hearings, academic literature, judicial decisions, legislative reports, and other information.

The narrow tailoring prong has been met by satisfying five factors to ensure that the remedy “fits” the evidence:

1. The necessity of relief;
2. The efficacy of race-neutral remedies at overcoming identified discrimination;
3. The flexibility and duration of the relief, including the availability of waiver provisions;
4. The relationship of numerical goals to the relevant market; and
5. The impact of the relief on the rights of third parties.

In *Adarand v. Peña*,¹⁹ the United States Supreme Court extended the analysis of strict scrutiny to race-based federal enactments such as the United States Department of Transportation (“USDOT”) Disadvantaged Business Enterprise (“DBE”) program for federally assisted transportation contracts (which applies to the Texas Department of Transportation’s (“TxDOT” or “Department”) Federal Highway Administration (“FHWA”)-assisted prime contracts and Federal Aviation Administration (“FAA”)-assisted prime contracts.²⁰ Just as in the state and local government context, the national legislature must have a compelling governmental interest for the use of race, and the remedies adopted must be narrowly tailored to that evidence.²¹

Most federal courts, including the Fifth Circuit,²² have subjected preferences for Women-Owned Business Enterprises (“WBEs”) to “intermediate scrutiny”. Gender-based classifications must be supported by an “exceedingly persuasive justification” and be “substantially related to the objective”.²³ However, appellate courts have applied strict scrutiny to the gender-based presumption of social disadvantage in reviewing the constitutionality of the DBE program²⁴ or held that the results would be the same under strict scrutiny.²⁵

19. *Adarand v. Peña*, 515 U.S. 200 (“*Adarand I*”) (1995).

20. 49 C.F.R. Part 26 and Part 23. Contracts funded by the Federal Transit Administration were not included in this study.

21. *See, for example, Croson*, 488 U.S. at 492-493; *Adarand I*, 515 U.S. 200, 227; *see generally Fisher v. University of Texas*, 133 S. Ct. 2411 (2013).

22. *W.H. Scott Construction Co., Inc., v. City of Jackson, Mississippi*, 199 F.3d 206, 215 n.9 (5th Cir. 1999).

23. *Cf. United States v. Virginia*, 518 U.S. 515, 532 n.6 (1996).

24. *Northern Contracting, Inc. v. Illinois Department of Transportation*, 473 F.3d 715, 720 (7th Cir. 2007) (“*Northern Contracting III*”).

25. *Western States Paving Co., Inc. v. Washington State Department of Transportation*, 2013 W.L.1607239 at *13 fn.6 (9th Cir. 2005).

Classifications not based upon a suspect class (race, ethnicity, religion, national origin or gender) are subject to the lesser standard of review called “rational basis” scrutiny.²⁶ The courts have held there are no equal protection implications under the Fourteenth Amendment of the United States Constitution for groups not subject to systemic discrimination.²⁷ In contrast to strict scrutiny and to intermediate scrutiny, rational basis means the governmental action must be “rationally related” to a “legitimate” government interest.²⁸ Thus, preferences for persons with disabilities or veteran status may be enacted with vastly less evidence than that required for race- or gender-based measures to combat historic discrimination.

Unlike most legal challenges, the defendant bears the initial burden of producing “strong evidence” in support of its race-conscious program.²⁹ As held by the Fifth Circuit, the plaintiff must then proffer evidence to rebut the government’s case, and bears the ultimate burden of production and persuasion that the affirmative action program is unconstitutional.³⁰ “[W]hen the proponent of an affirmative action plan produces sufficient evidence to support an inference of discrimination, the plaintiff must rebut that inference in order to prevail.”³¹

A plaintiff “cannot meet its burden of proof through conjecture and unsupported criticism of [the government’s] evidence.”³² To successfully rebut the government’s evidence, a plaintiff must introduce “credible, particularized evidence” that rebuts the government’s showing of a strong basis in evidence.³³ For example, in the challenge to the Minnesota and Nebraska DBE programs, “plaintiffs presented evidence that the data was susceptible to multiple interpretations, but they failed to present affirmative evidence that no remedial action was necessary because minority-owned small businesses enjoy non-discriminatory access to and participation in federally assisted highway contracts. Thus, they failed to meet their ultimate burden to prove that the DBE program is unconstitutional on this ground.”³⁴ When the statistical information is sufficient to support the inference of discrimi-

26. See, generally, *Coral Construction Co v. King County*, 941 F. 2d 910 (9th Cir. 1991); *Equal. Found. v. City of Cincinnati*, 128 F. 3d 289 (6th Cir. 1997).

27. *United States v. Carolene Products Co.*, 304 U.S. 144 (1938).

28. *Heller v. Doe*, 509 U.S. 312, 320 (1993).

29. *Aiken v. City of Memphis*, 37 F.3d 1155, 1162 (6th Cir. 1994).

30. *Scott*, 199 F.3d at 219; *Adarand Constructors, Inc. v. Slater*, 228 F.3d 1147, 1166 (10th Cir. 2000), cert. granted then dismissed as improvidently granted, 532 U.S. 941 (2001) (“*Adarand VII*”).

31. *Engineering Contractors Association of South Florida, Inc. v. Metropolitan Dade County*, 122 F.3d 895, 916 (11th Cir. 1997) (“*Engineering Contractors II*”).

32. *Concrete Works of Colorado, Inc. v. City and County of Denver*, 321 F.3d 950, 989, cert. denied, 540 U.S. 1027 (2003) (10th Cir. 2003) (“*Concrete Works IV*”).

33. *H.B. Rowe v. North Carolina Department of Transportation*, 615 F.3d 233, 241-242 (4th Cir. 2010); *Midwest Fence*, 84 F. Supp. 3d 705, 2015 W.L. 1396376*7, affirmed, 840 F.3d 932, 2016 WL 6543514 (7th Cir. 2016).

nation, the plaintiff must prove that the statistics are flawed.³⁵ A plaintiff cannot rest upon general criticisms of studies or other related evidence; it must meet its burden that the government's proof is inadequate to meet strict scrutiny, rendering the legislation or government program illegal.³⁶

To meet strict scrutiny, studies have been conducted to gather the statistical and anecdotal evidence necessary to support the use of race- and gender-conscious measures to combat discrimination. These are commonly referred to as "disparity studies" because they analyze any disparities between the opportunities and experiences of minority- and women-owned firms and their actual utilization compared to White male-owned businesses. Quality studies also examine the elements of the agency's program to determine whether it is sufficiently narrowly tailored. The following is a detailed discussion of the legal parameters and the requirements for conducting studies to support defensible programs.

B. Elements of Strict Scrutiny

In its decision in *City of Richmond v. J.A. Croson Co.*, the United States Supreme Court established the constitutional contours of permissible race-based public contracting programs. Reversing long established Equal Protection jurisprudence, the Court, for the first time, extended the highest level of judicial examination from measures designed to limit the rights and opportunities of minorities to legislation that inures to the benefit of these victims of historic discrimination. Strict scrutiny requires that a government entity prove both its "compelling governmental interest" in remediating identified discrimination based upon "strong evidence" and that the measures adopted to remedy that discrimination are "narrowly tailored" to that evidence. However benign the government's motive, race is always so suspect a classification that its use must pass the highest constitutional test of "strict scrutiny".

The Court struck down the City of Richmond's Minority Business Enterprise Plan ("Plan") because it failed to satisfy the strict scrutiny analysis applied to "race-based" government programs. The City's "set-aside" Plan required prime contractors awarded City construction contracts to subcontract at least 30 percent of the project to Minority-Owned Business Enterprises ("MBEs"). A business located anywhere in the nation was eligible to participate so long as it was at least 51 percent

34. *Sherbrooke Turf, Inc. v. Minnesota Department of Transportation*, 345 F.3d 964, 970 (8th Cir. 2003), *cert. denied*, 541 U.S. 1041 (2004).

35. *Coral Construction Co.*, 941 F. 2d at 921; *Engineering Contractors II*, 122 F.3d at 916

36. *Adarand VII*, 228 F.3d at 1166; *Engineering Contractors II*, 122 F.3d at 916; *Concrete Works of Colorado, Inc. v. City and County of Denver*, 36 F.3d 1513, 1522-1523 (10th Cir. 1994) ("*Concrete Works II*"); *Webster v. Fulton County, Georgia*, 51 F.Supp.2d 1354, 1364 (N.D. Ga. 1999), *aff'd per curiam*, 218 F. 3d 1267 (11th Cir. 2000); *see also Wygant v. Jackson Board of Education*, 476 U.S. 267, 277-278 (1986).

owned and controlled by minority citizens or lawfully-admitted permanent residents.

The Plan was adopted following a public hearing during which no direct evidence was presented that the City had discriminated on the basis of race in contracts or that its prime contractors had discriminated against minority subcontractors. The only evidence before the City Council was: (a) Richmond's population was 50 percent Black, yet less than one percent of its prime construction contracts had been awarded to minority businesses; (b) local contractors' associations were virtually all White; (c) the City Attorney's opinion that the Plan was constitutional; and (d) generalized statements describing widespread racial discrimination in the local, Virginia, and national construction industries.

In affirming the court of appeals' determination that the Plan was unconstitutional, Justice Sandra Day O'Connor's plurality opinion rejected the extreme positions that local governments either have *carte blanche* to enact race-based legislation or must prove their own active participation in discrimination:

[A] state or local subdivision...has the authority to eradicate the effects of private discrimination within its own legislative jurisdiction... [Richmond] can use its spending powers to remedy private discrimination, if it identifies that discrimination with the particularity required by the Fourteenth Amendment...[I]f the City could show that it had essentially become a "passive participant" in a system of racial exclusion ...[it] could take affirmative steps to dismantle such a system."³⁷

Strict scrutiny of race-based remedies is required to determine whether racial classifications are in fact motivated by notions of racial inferiority or blatant racial politics. This highest level of judicial review "smokes out" illegitimate uses of race by ensuring that the legislative body is pursuing an important enough goal to warrant use of a highly suspect tool.³⁸ It also ensures that the means chosen "fit" this compelling goal so closely that there is little or no likelihood that the motive for the classification was illegitimate racial prejudice or stereotype. The Court made clear that strict scrutiny is designed to expose racial stigma; racial classifications are said to create racial hostility if they are based on notions of racial inferiority.

Richmond's evidence was found to be lacking in every respect. The City could not rely upon the disparity between its utilization of MBE prime contractors and Richmond's minority population because not all minority persons would be qualified to perform construction projects; general population representation is irrelevant. No

37. 488 U.S. at 491-92.

38. See also *Grutter v. Bollinger*, 539 U.S. 306, 327 (2003) ("Not every decision influenced by race is equally objectionable, and strict scrutiny is designed to provide a framework for carefully examining the importance and the sincerity of the reasons advanced by the governmental decisionmaker for the use of race in that particular context.").

data were presented about the availability of MBEs in either the relevant market area or their utilization as subcontractors on City projects.

According to Justice O'Connor, the extremely low MBE membership in local contractors' associations could be explained by "societal" discrimination or perhaps Blacks' lack of interest in participating as business owners in the construction industry. To be relevant, the City would have to demonstrate statistical disparities between eligible MBEs and actual membership in trade or professional groups. Further, Richmond presented no evidence concerning enforcement of its own anti-discrimination ordinance. Finally, the City could not rely upon Congress' determination that there has been nationwide discrimination in the construction industry. Congress recognized that the scope of the problem varies from market to market, and, in any event, it was exercising its powers under Section Five of the Fourteenth Amendment. Local governments are further constrained by the Amendment's Equal Protection Clause.

In the case at hand, the City has not ascertained how many minority enterprises are present in the local construction market nor the level of their participation in City construction projects. The City points to no evidence that qualified minority contractors have been passed over for City contracts or subcontracts, either as a group or in any individual case. Under such circumstances, it is simply impossible to say that the City has demonstrated "a strong basis in evidence for its conclusion that remedial action was necessary."³⁹

This analysis was applied only to Blacks. The Court emphasized that there was "absolutely no evidence" of discrimination against other minorities. "The random inclusion of racial groups that, as a practical matter, may have never suffered from discrimination in the construction industry in Richmond, suggests that perhaps the City's purpose was not in fact to remedy past discrimination."⁴⁰

Having found that Richmond had not presented evidence in support of its compelling interest in remediating discrimination—the first prong of strict scrutiny—the Court made two observations about the narrowness of the remedy—the second prong of strict scrutiny. First, Richmond had not considered race-neutral means to increase MBE participation. Second, the 30 percent quota had no basis in evidence, and was applied regardless of whether the individual MBE had suffered discrimination.⁴¹ The Court noted that the City "does not even know how many MBEs in the relevant market are qualified to undertake prime or subcontracting work in public construction projects."⁴²

39. *Croson*, 488 U.S. at 510.

40. *Id.*

41. *See Grutter*, 529 U.S. at 336-337 (quotas are not permitted; race must be used in a flexible, non-mechanical way).

42. *Croson*, 488 U.S. at 502.

Apparently recognizing that her opinion might be misconstrued to eliminate all race-conscious contracting efforts, Justice O'Connor closed with these admonitions:

Nothing we say today precludes a state or local entity from taking action to rectify the effects of identified discrimination within its jurisdiction. If the City of Richmond had evidence before it that non-minority contractors were systematically excluding minority businesses from subcontracting opportunities, it could take action to end the discriminatory exclusion. Where there is a significant statistical disparity between the number of qualified minority contractors willing and able to perform a particular service and the number of such contractors actually engaged by the locality or the locality's prime contractors, an inference of discriminatory exclusion could arise. Under such circumstances, the City could act to dismantle the closed business system by taking appropriate measures against those who discriminate based on race or other illegitimate criteria. In the extreme case, some form of narrowly tailored racial preference might be necessary to break down patterns of deliberate exclusion... Moreover, evidence of a pattern of individual discriminatory acts can, if supported by appropriate statistical proof, lend support to a local government's determination that broader remedial relief is justified.⁴³

While much has been written about *Croson*, it is worth stressing what evidence was and was not before the Court. First, Richmond presented *no* evidence regarding the availability of MBEs to perform as prime contractors or subcontractors and *no* evidence of the utilization of minority-owned subcontractors on City contracts.⁴⁴ Nor did Richmond attempt to link the remedy it imposed to any evidence specific to the program; it used the general population of the City rather than any measure of business availability.

Some commentators have taken this dearth of any particularized proof and argued that only the most particularized proof can suffice in all cases. They leap from the Court's rejection of Richmond's reliance on only the percentage of Blacks in the City's population to a requirement that only firms that bid or have the "capacity" or "willingness" to bid on a particular contract at a particular time can be considered in determining whether discrimination against Black businesses infects the local economy.⁴⁵

43. *Id.* at 509 (citations omitted).

44. *Id.* at 502.

45. *See, for example, Northern Contracting III*, 473 F.3d at 723.

This argument has been rejected explicitly by some courts. In denying the plaintiff's summary judgment motion to enjoin the City of New York's M/WBE construction ordinance, the court stated:

[I]t is important to remember what the *Croson* plurality opinion did and did not decide. The Richmond program, which the *Croson* Court struck down, was insufficient because it was based on a comparison of the minority population in its entirety in Richmond, Virginia (50%) with the number of contracts awarded to minority businesses (67%). There were no statistics presented regarding the number of minority-owned contractors in the Richmond area, *Croson*, 488 U.S. at 499, and the Supreme Court was concerned with the gross generality of the statistics used in justifying the Richmond program. There is no indication that the statistical analysis performed by [the consultant] in the present case, which does contain statistics regarding minority contractors in New York City, is not sufficient as a matter of law under *Croson*.⁴⁶

Further, Richmond made no attempt to narrowly tailor a goal for the procurement at issue that reflected the reality of the project. Arbitrary quotas, and the unyielding application of those quotas, did not support the stated objective of ensuring equal access to City contracting opportunities. The *Croson* Court said nothing about the constitutionality of flexible goals based upon the availability of MBEs to perform the scopes of the contract in the government's local market area. In contrast, the USDOT DBE program avoids these pitfalls. 49 C.F.R. Part 26 "provides for a flexible system of contracting goals that contrasts sharply with the rigid quotas invalidated in *Croson*."

While strict scrutiny is designed to require clear articulation of the evidentiary basis for race-based decision-making and careful adoption of remedies to address discrimination, it is not, as Justice O'Connor stressed, an impossible test that no proof can meet. Strict scrutiny need not be "fatal in fact".

46. *North Shore Concrete and Associates, Inc. v. City of New York*, 1998 U.S. Dist. Lexis 6785, *28-29 (E.D. N.Y. 1998); see also *Harrison & Burrowes Bridge Constructors, Inc. v. Cuomo*, 981 F.2d 50, 61-62 (2nd Cir. 1992) ("Croson made only broad pronouncements concerning the findings necessary to support a state's affirmative action plan"); cf. *Concrete Works II*, 36 F.3d at 1528 (City may rely on "data reflecting the number of MBEs and WBEs in the marketplace to defeat the challenger's summary judgment motion").

C. Strict Scrutiny as Applied to the Texas Department of Transportation's DBE Program

1. Elements of the DBE Program for USDOT-Assisted Contracts

In *Adarand v. Peña*,⁴⁷ the Supreme Court again overruled long settled law and extended the analysis of strict scrutiny under the Equal Protection Clause of the Fourteenth Amendment to federal enactments. To comply with *Adarand*, Congress reviewed and revised the DBE program statute⁴⁸ and implementing regulations⁴⁹ for federal-aid contracts in the transportation industry. The program governs TxDOT's receipt of federal funds from the Federal Highway Administration ("FHWA") and the Federal Aviation Administration ("FAA").

To date, every court that has considered the issue has found the regulations to be constitutional on their face.⁵⁰ These cases provide important guidance to TxDOT about how to narrowly tailor its DBE program, as well as its initiatives for its state funded contracts.

All courts have held that Congress had strong evidence of widespread racial discrimination in the construction industry. The Ninth Circuit held that "[i]n light of the substantial body of statistical and anecdotal material considered at the time of TEA-21's enactment, Congress had a strong basis in evidence for concluding that, in at least some parts of the country, discrimination within the transportation contracting industry hinders minorities' ability to compete for federally funded contracts." Relevant evidence before Congress included:

- Disparities between the earnings of minority-owned firms and similarly situated non-minority-owned firms;
- Disparities in commercial loan denial rates between Black business owners compared to similarly situated non-minority business owners;

47. *Adarand Constructors, Inc. v. Peña*, 515 U.S. 200 (1995) ("*Adarand III*").

48. See Transportation Equity Act for the 21st Century ("*TEA-21*"), Pub. L. No. 105-178 (b)(1), June 22, 1998, 112 Stat. 107, 113.

49. 49 C.F.R. Part 26.

50. See, for example, *Midwest Fence Corporation v. Illinois DOT*, 840 F.3d 932 (7th Cir. 2016) ("*Midwest Fence II*"); *Northern Contracting, Inc. v. Illinois*, 473 F.3d 715 (7th Cir. 2007) ("*Northern Contracting III*"); *Associated General Contractors of America, San Diego Chapter, Inc., v. California Department of Transportation*, 713 F.3d 1187, 1198 (9th Cir. 2013); *Western States Paving Co., Inc. v. Washington Department of Transportation*, 407 F.3d 983, 994 (9th Cir. 2005), cert. denied, 546 U.S. 1170 (2006); *Adarand VII*, 228 F.3d at 1147; *M.K. Weeden Construction v. State of Montana*, 2013 WL 4774517 (D. Mont.) (September 4, 2013).

- The large and rapid decline in minorities' participation in the construction industry when affirmative action programs were struck down or abandoned; and
- Various types of overt and institutional discrimination by prime contractors, trade unions, business networks, suppliers, and sureties against minority contractors.⁵¹

Next, the regulations were facially narrowly tailored. Unlike the prior program, the new Part 26 provides that:

- The overall goal must be based upon demonstrable⁵² evidence of the number of DBEs ready, willing, and able to participate on the recipient's federally assisted contracts.
- The goal may be adjusted to reflect the availability of DBEs "but for" the effects of the DBE program and of discrimination.
- The recipient must meet the maximum feasible portion of the goal through race-neutral measures as well as estimate that portion of the goal it predicts will be met through such measures.
- The use of quotas and set-asides is limited to only those situations where there is no other remedy.
- The goals are to be adjusted during the year to remain narrowly tailored.
- Absent bad faith administration of the program, a recipient cannot be penalized for not meeting its goal.
- Exemptions or waivers from program requirements are available.
- The presumption of social disadvantage for racial and ethnic minorities and women is rebuttable, "wealthy minority owners and wealthy minority firms are excluded, and certification is available to persons who are not presumptively disadvantaged but can demonstrate actual social disadvantage."⁵³

These elements have led the courts to conclude that the program is narrowly tailored on its face. First, the regulations place strong emphasis on the use of race-neutral means that assist all small firms to achieve minority and women participation. TxDOT must also estimate the portion of the goal it predicts will be met through race-neutral and race-conscious measures (contract goals).⁵⁴

51. The DBE program regulation in effect prior to March of 1999 was set forth in 49 C.F.R. Part 23.

52. *Western States*, 407 F.3d at 992-93.

53. *Sherbrooke*, 345 F.3d. at 973.

54. 49 CFR § 26.45(f)(3).

This requirement has been central to the holdings that the DBE regulations meet narrow tailoring.⁵⁵ Further, a recipient may terminate race-conscious contract goals if it meets its annual overall goal through race-neutral means for two consecutive years. Finally, the authorizing legislation is subject to Congressional reauthorization that will ensure periodic public debate.

In 2015, Congress reauthorized the DBE program and again concluded that the evidence before it “provided a strong basis” to continue the program.⁵⁶

2. Narrowly Tailoring TxDOT’s DBE Program

Agencies that receive FHWA and FAA grants for planning or development and award prime contracts for projects that equal or exceed an accumulative amount of \$250,000.00 in a fiscal year must have a DBE program and must meet related requirements as an expressed condition of receiving these funds. Therefore, TxDOT must establish a DBE program plan in conformance with 49 C.F.R. Part 26.

TxDOT must use a two-step goal-setting process to establish its overall triennial DBE goal for FHWA and FAA funded contracts. TxDOT’s overall triennial goal must be based upon the relative availability of DBEs and reflect the level of DBE participation that would be expected absent the effects of discrimination.⁵⁷

Under Step 1, TxDOT must determine the base figure for the relative availability of DBEs, and one approved method is to use data from a disparity study.⁵⁸ Under Step 2, TxDOT must examine all evidence available in its jurisdiction to determine whether to adjust the base figure. TxDOT must consider the current capacity of DBEs as measured by the volume of work DBEs have performed in recent years.⁵⁹

In addition to the overall goal, TxDOT must set narrowly tailored goals on specific FHWA and FAA funded contracts where warranted. TxDOT is required to set contract goals based upon the availability of DBEs to perform anticipated work scopes—including the work estimated to be performed by the prime contractor—of the individual contract.⁶⁰

55. See, e.g., *Sherbrooke*, 345 F.3d. at 973.

56. Fixing America’s Surface Transportation Act (Fast Act), Pub. L. No. 114-94, Section 1101 (b), 129 Stat. 1323-1325 (23 U.S.C. 101 *et. seq.*) (2015).

57. 49 C.F.R. § 26.45(b).

58. 49 C.F.R. § 26.45(c)(3).

59. 49 C.F.R. § 26.45(d)(1)(i).

60. 49 C.F.R. § 26.51 (e)(2).

Programs based upon studies similar to the “custom census” methodology employed for this Report have been deemed a rich and relevant source of data and have been upheld repeatedly. This includes the availability analysis and the examination of disparities in the business formation rates and business earnings of minorities and women compared to similarly situated non-minority males. The Illinois Department of Transportation’s (IDOT’s) DBE program was upheld based on this approach combined with other economy-wide and anecdotal evidence. The USDOT’s institutional guidance for Part 26 refers approvingly to this case. IDOT’s plan was based upon sufficient proof of discrimination such that race-neutral measures alone would be inadequate to assure that DBEs operate on a “level playing field” for government contracts.

The stark disparity in DBE participation rates on goals and non-goals contracts, when combined with the statistical and anecdotal evidence of discrimination in the relevant marketplaces, indicates that IDOT’s 2005 DBE goal represents a “plausible lower-bound estimate” of DBE participation in the absence of discrimination... Plaintiff presented no persuasive evidence contravening the conclusions of IDOT’s studies, or explaining the disparate usage of DBEs on goals and non-goals contracts... IDOT’s proffered evidence of discrimination against DBEs was not limited to alleged discrimination by prime contractors in the award of subcontracts. IDOT also presented evidence that discrimination in the bonding, insurance, and financing markets erected barriers to DBE formation and prosperity. Such discrimination inhibits the ability of DBEs to bid on prime contracts, thus allowing the discrimination to indirectly seep into the award of prime contracts, which are otherwise awarded on a race- and gender-neutral basis. This indirect discrimination is sufficient to establish a compelling governmental interest in a DBE program... Having established the existence of such discrimination, a governmental entity has a compelling interest in assuring that public dollars, drawn from the tax contributions of all citizens, do not serve to finance the evil of private prejudice.⁶¹

In upholding the Minnesota Department of Transportation’s DBE program using the same approach, the Eighth Circuit opined that while plaintiff attacked the study’s data and methods, it

failed to establish that better data was [sic] available or that Mn/DOT was otherwise unreasonable in undertaking this

61. *Northern Contracting, Inc. v. Illinois Department of Transportation*, 2005 U.S. Dist. LEXIS 19868 (Sept. 8, 2005), at *82 (internal citations omitted); see *Croson*, 488 U.S. at 492 (“*Northern Contracting II*”).

thorough analysis and in relying on its results. The precipitous drop in DBE participation in 1999, when no race-conscious methods were employed, supports Mn/DOT's conclusion that a substantial portion of its 2001 overall goal could not be met with race-neutral measures, and there is no evidence that Mn/DOT failed to adjust its use of race-conscious and race-neutral methods as the year progressed, as the DOT regulations require.⁶²

More recently, the Seventh Circuit affirmed the district court and upheld the Illinois Tollway's DBE program for non-federal-aid contracts based upon a Colette Holt & Associates disparity study utilizing this methodology. Plaintiff's main objection to the defendant's evidence was that it failed to account for "capacity" when measuring DBE availability and underutilization. As is well established, "Midwest would have to come forward with "credible, particularized evidence" of its own, such as a neutral explanation for the disparity between DBE utilization and availability showing that the government's data is flawed, demonstrating that the observed disparities are statistically insignificant or presenting contrasting statistical data. [citation omitted]. Plaintiff "fail[ed] to provide any independent statistical analysis or make this showing here."⁶³ Midwest offered only mere conjecture about how the defendants' studies' supposed failure to account for capacity may or may not have impacted other evidence demonstrating actual bias.

As recently as 2017, another district court found the DBE program and its implementing regulations to be constitutional.⁶⁴ This criminal case originated from alleged fraud on the program. The court rejected defendant's challenge to USDOT's authority to promulgate the federal regulations and determined that the regulatory legislative history and executive rulemaking were made under the broad grant of rights authorized by Congressional statutes.

D. Establishing a "Strong Basis in Evidence" for the Texas Department of Transportation's Historically Underutilized Business Program

The case law on the USDOT DBE program should guide TxDOT's program for state funded contracts. As discussed, Part 26 has been upheld by every court, and state programs for Historically Underutilized Businesses ("HUBs") or Minority- and

62. *Sherbrooke*, 3345 F.3d at 973.

63. *See Midwest Fence Corp. v. U.S. Department of Transportation*, 84 F. Supp. 3d 705 (N.D. Ill. 2015).

64. *United States v. Taylor*, 232 F. Supp. 3d 741 (W.D. Penn. 2017).

Women-Owned Business Enterprises (“M/WBEs”) will be judged under this legal framework.⁶⁵ We note that programs for veterans, persons with disabilities or truly race- and gender-neutral small business efforts are not subject to strict scrutiny, and no evidence comparable to that in a disparity study is needed to enact such initiatives.

While Congress evaluated the evidence of discrimination against M/WBEs in the federal marketplace, a state agency must conduct its own fact-finding. It is well established that disparities between an agency’s utilization of HUBs and their availability in the relevant marketplace provide a sufficient basis for the consideration of race- or gender-conscious remedies. Proof of the disparate impacts of economic factors on HUBs and the disparate treatment of such firms by actors critical to their success will meet strict scrutiny. Discrimination must be shown using statistics and econometric models to examine the effects of systems or markets on different groups, as well as by evidence of personal experiences with discriminatory conduct, policies or systems.⁶⁶ Specific evidence of discrimination or its absence may be direct or circumstantial and should include economic factors and opportunities in the private sector affecting the success of HUBs.⁶⁷

Croson’s admonition that “mere societal” discrimination is insufficient to meet strict scrutiny is met where the government presents evidence of discrimination in the industry targeted by the program. “If such evidence is presented, it is immaterial for constitutional purposes whether the industry discrimination springs from widespread discriminatory attitudes shared by society or is the product of policies, practices, and attitudes unique to the industry... The genesis of the identified discrimination is irrelevant.”⁶⁸ There is no requirement to “show the existence of specific discriminatory policies and that those policies were more than a reflection of societal discrimination.”⁶⁹

TxDOT need not prove that it is itself guilty of discrimination in order to meet its burden. In upholding Denver’s M/WBE construction program, the court stated that Denver can show its compelling interest by “evidence of private discrimination in the local construction industry coupled with evidence that it has become a passive participant in that discrimination...[by] linking its spending practices to the private discrimination.”⁷⁰ Denver further linked its award of public dollars to discriminatory conduct through the testimony of M/WBEs that identified general

65. *Midwest Fence II*, 840 F.3d. at 953.

66. *Adarand VII*, 228 F.3d at 1166 (“statistical and anecdotal evidence are appropriate”).

67. *Id.*

68. 488 U.S. at 472.

69. *Concrete Works IV*, 321 F.3d at 976.

70. *Id.* at 977.

contractors who used them on City projects with M/WBE goals but refused to use them on private projects without goals.

The following are the evidentiary elements courts have looked to in examining the basis for and determining the constitutional validity of race- and gender-conscious state programs and the steps in performing a disparity study necessary to meet those elements.

1. Define TxDOT's Market Areas

The first step is to determine the market areas for state funded contracts in which TxDOT operates. *Croson* states that a state or local government may remedy discrimination only within its own contracting market area. The City of Richmond was faulted for including minority contractors from across the country in its program, based on national data considered by Congress.⁷¹ TxDOT must therefore empirically establish the geographic and product dimensions of its contracting and procurement market area to ensure that the program meets strict scrutiny. This is a fact-driven inquiry; it may or may not be the case that the market area extends beyond the governmental entity's jurisdictional boundaries.⁷²

A commonly accepted definition of the geographical market area for disparity studies is the locations that account for 75 percent of the agency's contract and subcontract dollar amounts.⁷³ Similarly, the prevailing approach is to analyze those detailed industries that make up at least 75 percent of the prime contract and associated subcontract payments for the study period.⁷⁴ This produces the utilization results within the geographic market area.

2. Examine Disparities between TxDOT's Utilization of HUBs and HUB Availability

Next, the study must estimate the availability of minorities and women to participate in TxDOT's contracts as prime contractors and associated subcontractors compared to its utilization of such firms. The primary inquiry is whether there are statistically significant disparities between the availability of HUBs and their utilization.

71. *Croson*, 488 U.S. at 508.

72. *Concrete Works II*, 36 F.3d at 1520 (to confine data to strict geographic boundaries would ignore "economic reality").

73. National Academies of Sciences, Engineering, and Medicine 2010, *Guidelines for Conducting a Disparity and Availability Study for the Federal DBE Program*. Washington, DC: The National Academies Press. <https://doi.org/10.17226/14346>. ("National Disparity Study Guidelines"), p. 49.

74. *Id.* at pp. 50-51.

Where there is a significant statistical disparity between the number of qualified minority contractors willing and able to perform a particular service and the number of such contractors actually engaged by the locality or the locality's prime contractors, an inference of discriminatory exclusion could arise... In the extreme case, some form of narrowly tailored racial preference might be necessary to break down patterns of deliberate exclusion.⁷⁵

This is known as the “disparity ratio” or “disparity index”. A disparity ratio measures the participation of a group in the government’s contracting opportunities by dividing that group’s utilization by the availability of that group and multiplying that result by 100 percent. Courts have looked to disparity indices in determining whether strict scrutiny is satisfied.⁷⁶ An index of less than 100 percent indicates that a given group is being utilized less than would be expected based on its availability, and courts have adopted the Equal Employment Opportunity Commission’s “80 percent” rule that a ratio less than 80 percent presents a *prima facie* case of discrimination.⁷⁷ Where possible, statistical techniques are applied to examine whether any disparities are significant. In addition to creating the disparity ratio, correct measures of availability are necessary to determine whether discriminatory barriers depress the formation of firms by minorities and women, and the success of such firms in doing business in both the private and public sectors, known as an “economy-wide” analysis.⁷⁸

While there have been few cases in this area in the Fifth Circuit, we note that the failure to engage in this type of statistical analysis led to the demise of the City of Jackson’s program many years ago.⁷⁹ The City had adopted an MBE program and set a 15 percent overall goal for City contracts. It had commissioned and later rejected a disparity study, and no other evidentiary efforts were made to support the continued application of the program. After holding that the plaintiff had standing to pursue his case since his low bid providing one percent DBE participation had been rejected, the Fifth Circuit upheld the

75. *Croson*, 488 U.S. at 509; *see also Webster*, 51 F.Supp.2d at 1363, 1375.

76. *Scott*, 199 F.3d at 218; *see also Concrete Works II*, 36 F.3d at 1526-1527; *O'Donnell Construction Co., Inc. v. State of Columbia*, 963 F.2d 420, 426 (D.C. Cir. 1992); *Cone Corp. v. Hillsborough County*, 908 F.2d 908, 916 (11th Cir. 1990), cert. denied, 498 U.S. 983 (1990).

77. 29 C.F.R. § 1607.4(D) (“A selection rate for any race, sex, or ethnic group which is less than four-fifths (4/5) (or eighty percent) of the rate for the group with the highest rate will generally be regarded by the Federal enforcement agencies as evidence of adverse impact, while a greater than four-fifths rate will generally not be regarded by Federal enforcement agencies as evidence of adverse impact.”); *See Engineering Contractors II*, 122 F.3d at 914.

78. *Northern Contracting, Inc. v. Illinois Department of Transportation*, 2005 U.S. Dist. LEXIS 19868, at *70 (Sept. 8, 2005) (IDOT’s custom census approach was supportable because “discrimination in the credit and bonding markets may artificially reduce the number of M/WBEs”).

79. *W.H. Scott Construction Co., Inc. v. City of Jackson, Mississippi*, 199 F.3d 206 (5th Cir. 1999).

district court's ruling that Jackson's failure to rely upon a study was fatal to its argument that it had a strong basis in evidence.

To determine disparity ratios once utilization has been established, the next step is to calculate the availability of minority- and women-owned firms in the government's market area. Based on the product and geographic utilization data, the study should calculate weighted HUB availability estimates of "ready, willing and able" firms in TxDOT's market. This is generally the "Custom Census" methodology recommended in the National Study Guidelines and repeatedly approved by the courts. This methodology includes both certified firms and non-certified firms owned by minorities or women.

The Custom Census calls for the following steps:

1. Develop directories of HUBs and M/WBEs.
2. Define a subset of business data to establish the availability of all firms.
3. Merge the directory with the contract data file created during the utilization analysis.
4. Assign race, gender and 6-digit North American Industry Classification System codes.⁸⁰

This analysis results in an overall availability estimate of the number of ready, willing and able HUBs that is a narrowly tailored, dollar-weighted average of all the underlying industry availability numbers, with larger weights applied to industries with relatively more spending and lower weights applied to industries with relatively less spending. The availability figures should be also subdivided by race, ethnicity, and gender.

This approach has several benefits. As held by the federal court of appeals in finding the Illinois Department of Transportation's program to be constitutional, the "remedial nature of [DBE programs] militates in favor of a method of DBE availability calculation that casts a broader net" than merely using bidders lists or other agency or government directories.⁸¹ A broad methodology is also recommended by USDOT for its DBE program, which has been facially upheld by every court.⁸²

Other methodologies relying only on vendor or bidder lists risk overstating or understating availability as a proportion of TxDOT's actual markets because they reflect only the results of the agency's own activities, not an accurate portrayal of marketplace behavior. Other methods of whittling down availability by using assumptions based on surveys with limited response rates or guesses

80. See *National Disparity Study Guidelines*, Chapter III, pp. 33-34.

81. *Northern Contracting III*, 473 F.3d at 723.

82. See "Tips for Goal Setting in the Disadvantaged Business Enterprise (DBE) Program", https://www.transportation.gov/sites/dot.gov/files/docs/Tips_for_Goal-Setting_in_DBE_Program_20141106.pdf.

about firms' capacities easily lead to findings that women and minority businesses no longer face discrimination (examples include the Oregon Department of Transportation's study and the Washington State Department of Transportation's 2012 study) or are unavailable, even when the firm is actually working on agency contracts (for example, the study for the City of Portland, Oregon).

Many plaintiffs challenging DBE-and HUB-type programs have argued that studies must somehow control for the "capacity" of minority- and women-owned firms to perform specific agency contracts. The definition of "capacity" has varied based upon the plaintiff's particular point of view, but it has generally meant bonding limits, firm size, firm revenues, and prior experience on agency projects (no argument has been made outside of the construction industry).

This argument has been rejected by the courts when directly addressed by the plaintiff and the agency. As recognized by the courts and the National Model Disparity Study Guidelines, size and experience are not race- and gender-neutral variables. Discriminatory barriers depress the formation of firms by minorities and women as well as the success of such firms in doing business in both the private and public sectors. It is with these types of "capacity" variables where barriers to full and fair opportunities to compete will be manifested. Based upon expert testimony, judges understand that factors such as size and experience are not race- and gender-neutral variables: "M/WBE construction firms are generally smaller and less experienced *because* of discrimination."⁸³

Capacity limitations on availability would import the current effects of past discrimination into the model, because if HUBs are newer or smaller because of discrimination, then controlling for those variables will mask the phenomenon of discrimination that is being studied. In short, identifiable indicators of capacity are themselves impacted and reflect discrimination. To rebut this inference, a plaintiff must proffer its own study showing that the disparities disappear when such variables are held constant and that controlling for firm specialization explained the disparities. Conjecture and unsupported criticism of the government are not enough. The plaintiff must rebut the government's evidence and introduce "credible, particularized evidence" of its own.⁸⁴ Additionally, *Croson* does not "require disparity studies that measure whether construction firms are able to perform a *particular contract*."⁸⁵

83. *Concrete Works IV*, 321 F.3d at 983 (emphasis in the original).

84. *See Midwest Fence II*, 840 F.3d 942 (7th Cir. 2016) (upholding the Illinois Tollway's program for state funded contracts modelled after Part 26 and based on Colette Holt & Associate's expert witness testimony).

85. 488 U.S. at 508 (emphasis in the original)

Capacity variables should be examined at the economy-wide level of business formation and earnings, discussed below, not at the first stage of the analysis, to reduce the downward bias that discrimination imposes on HUBs' availability and the upward bias enjoyed by non- HUBs.

TxDOT need not prove that statistical inferences of discrimination are "correct". In upholding Denver's M/WBE program, the Tenth Circuit noted that strong evidence supporting Denver's determination that remedial action was necessary need not have been based upon "irrefutable or definitive" proof of discrimination. Statistical evidence creating inferences of discriminatory motivations was sufficient and, therefore, evidence of market area discrimination was properly used to meet strict scrutiny. To rebut this type of evidence, the plaintiff must prove by a preponderance of the evidence that such proof does not support those inferences.⁸⁶

Nor must TxDOT demonstrate that the "ordinances will *change* discriminatory practices and policies" in the local market area; such a test would be "illogical" because firms could defeat the remedial efforts simply by refusing to cease discriminating.⁸⁷

Next, TxDOT need not prove that private firms directly engaged in any discrimination in which the governmental entity passively participates do so intentionally, with the purpose of disadvantaging minorities and women.

Denver's only burden was to introduce evidence which raised the inference of discriminatory exclusion in the local construction industry and link its spending to that discrimination.... Denver was under no burden to identify any specific practice or policy that resulted in discrimination. Neither was Denver required to demonstrate that the purpose of any such practice or policy was to disadvantage women or minorities. To impose such a burden on a municipality would be tantamount to requiring proof of discrimination and would eviscerate any reliance the municipality could place on statistical studies and anecdotal evidence.⁸⁸

Similarly, statistical evidence by its nature cannot identify the individuals responsible for the discrimination.⁸⁹

86. *Concrete Works IV*, 321 F.3d at 971.

87. *Id.* at 973 (emphasis in the original).

88. *Id.* at 971.

89. *Id.* at 973.

3. Examine the Results of TxDOT's Unremediated Markets

The results of agency contracts solicited without M/WBE or HUB contract goals, to the extent such data are available, are an excellent indicator of whether discrimination continues to impact opportunities in public contracting. Evidence of race and gender discrimination in relevant “unremediated”⁹⁰ markets provides an important measure of what level of actual HUB participation can be expected in the absence of TxDOT mandated affirmative efforts to contract with HUBs.⁹¹ As the Eleventh Circuit has acknowledged, “the program at issue may itself be masking discrimination that might otherwise be occurring in the relevant market.”⁹² If M/WBE utilization is below availability in unremediated markets, an inference of discrimination may be supportable.

The courts have held that the virtual disappearance of M/WBE participation after programs have been enjoined or abandoned strongly indicates substantial barriers to minority contractors, “raising the specter of racial discrimination.”⁹³ Unremediated markets analysis indicates whether the government has been and continues to be a “passive participant” in such discrimination, in the absence of affirmative action remedies.⁹⁴ The court in the challenge to the City of Chicago’s M/WBE program for construction contracts held that the “dramatic decline in the use of M/WBEs when an affirmative action program is terminated, and the paucity of use of such firms when no affirmative action program was ever initiated”, was proof of the City’s compelling interest in employing race- and gender-conscious measures.⁹⁵ Evidence of unremediated markets “sharpens the picture of local market conditions for MBEs and WBEs.”⁹⁶

Therefore, if HUBs are “overutilized” because of the entity’s program, that does not end the study’s inquiry. Where the government has been implementing affirmative action remedies, HUB utilization reflects those efforts; it does not signal the end of discrimination. Any HUB “overutilization” on projects with goals goes only to the weight of the evidence because it reflects the

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90. “Unremediated market” means “markets that do not have race- or gender-conscious subcontracting goals in place to remedy discrimination.” See *Northern Contracting II*, at *36.
 91. See, e.g., *Western States*, 407 F.3d at 992 (Congress properly considered evidence of the “significant drop in racial minorities’ participation in the construction industry” after state and local governments removed affirmative action provisions).
 92. *Engineering Contractors II*, 122 F.3d at 912.
 93. *Adarand VII*, 228 F.3d at 1174.
 94. See also *Contractors Association of Eastern Pennsylvania v. City of Philadelphia*, 91 F.3d 586, 599-601 (3rd Cir. 1996) (“*Philadelphia III*”).
 95. *Builders Association of Greater Chicago v. City of Chicago*, 298 F. Supp.2d 725, 737 (N.D. Ill. 2003); (holding that City of Chicago’s M/WBE program for local construction contracts met compelling interest using this framework); see also *Concrete Works IV*, 321 F.3d at 987-988.
 96. *Concrete Works II*, 36 F.3d at 1529.

effects of a remedial program. For example, Denver presented evidence that goals and non-goals projects were similar in purpose and scope and that the same pool of contractors worked on both types. “Particularly persuasive” was evidence that M/WBE participation declined significantly when the program was amended in 1989; the utilization of M/WBEs on City projects had been affected by the affirmative action programs that have been in place in one form or another since 1977.

4. Analyze Economy-Wide Evidence of Race- and Gender-Based Disparities

The courts have repeatedly held that analysis of disparities in the rates at which M/WBEs in the government’s markets form businesses compared to similar non-M/WBEs, their earnings from such businesses, and their access to capital markets are highly relevant to the determination whether the market functions properly for all firms regardless of the race or gender of their ownership. As explained by the Tenth Circuit, this type of evidence

demonstrates the existence of two kinds of discriminatory barriers to minority subcontracting enterprises, both of which show a strong link between racial disparities in the federal government's disbursements of public funds for construction contracts and the channeling of those funds due to private discrimination. The first discriminatory barriers are to the formation of qualified minority subcontracting enterprises due to private discrimination, precluding from the outset competition for public construction contracts by minority enterprises. The second discriminatory barriers are to fair competition between minority and non-minority subcontracting enterprises, again due to private discrimination, precluding existing minority firms from effectively competing for public construction contracts. The government also presents further evidence in the form of local disparity studies of minority subcontracting and studies of local subcontracting markets after the removal of affirmative action programs.... The government's evidence is particularly striking in the area of the race-based denial of access to capital, without which the formation of minority subcontracting enterprises is stymied.⁹⁷

These analyses also contributed to the successful defense of Chicago’s construction program.

97. *Adarand VII*, 228 F.3d at 1147, 1168-69.

Business discrimination studies prove relevant and probative since they evince a strong link between the disbursement of public funds and the channeling of those funds due to private discrimination. “Evidence that private discrimination results in barriers to business formation is relevant because it demonstrates that M/WBEs are precluded *at the outset* from competing for public construction contracts. Evidence of barriers to fair competition is also relevant because it again demonstrates that *existing* M/WBEs are precluded from competing for public contracts.”⁹⁸ Despite the contentions of plaintiffs that possibly dozens of factors might influence the ability of any individual to succeed in business, the courts have rejected such impossible tests and held that business formation studies are not flawed because they cannot control for subjective descriptions such as “quality of education,” “culture” and “religion”.

In unanimously upholding the USDOT DBE program, the courts agree that disparities between the earnings of minority-owned firms and similarly situated non-minority-owned firms and the disparities in commercial loan denial rates between Black business owners compared to similarly situated non-minority business owners are strong evidence of the continuing effects of discrimination. The Eighth Circuit Court of Appeals took a “hard look” at the evidence Congress considered, and concluded that the legislature had

spent decades compiling evidence of race discrimination in government highway contracting, of barriers to the formation of minority-owned construction businesses, and of barriers to entry. In rebuttal, [the plaintiffs] presented evidence that the data were susceptible to multiple interpretations, but they failed to present affirmative evidence that no remedial action was necessary because minority-owned small businesses enjoy non-discriminatory access to and participation in highway contracts. Thus, they failed to meet their ultimate burden to prove that the DBE program is unconstitutional on this ground.⁹⁹

5. Evaluate Anecdotal Evidence of Race- and Gender-Based Barriers

A disparity study should also explore anecdotal evidence of experiences with discrimination in contracting opportunities inasmuch as it proves relevant to the query whether observed statistical disparities are due to discrimination and not to some other non-discriminatory cause or causes. As observed by the

98. *Id.*

99. *Sherbrooke*, 345 F.3d. at 970; *see also Adarand VII*, 228 F.3d at 1175 (Plaintiff has not met its burden “of introducing credible, particularized evidence to rebut the government’s initial showing of the existence of a compelling interest in remedying the nationwide effects of past and present discrimination in the federal construction procurement subcontracting market.”).

Supreme Court, anecdotal evidence can be persuasive because it “brought the cold [statistics] convincingly to life”.¹⁰⁰ Testimony about discrimination practiced by prime contractors, bonding companies, suppliers, and lenders has been found relevant regarding barriers both to minority firms’ business formation and to their success on governmental projects.¹⁰¹ While anecdotal evidence is insufficient standing alone, “[p]ersonal accounts of actual discrimination or the effects of discriminatory practices may, however, vividly complement empirical evidence. Moreover, anecdotal evidence of a [government’s] institutional practices that exacerbate discriminatory market conditions are [sic] often particularly probative.”¹⁰² “[W]e do not set out a categorical rule that every case must rise or fall entirely on the sufficiency of the numbers. To the contrary, anecdotal evidence might make the pivotal difference in some cases; indeed, in an exceptional case, we do not rule out the possibility that evidence not reinforced by statistical evidence, as such, will be enough.”¹⁰³

There is no requirement that anecdotal testimony be “verified” or corroborated, as befits the role of evidence in legislative decision-making as opposed to judicial proceedings. “Plaintiff offers no rationale as to why a fact finder could not rely on the state’s ‘unverified’ anecdotal data. Indeed, a fact finder could very well conclude that anecdotal evidence need not—indeed cannot—be verified because it ‘is nothing more than a witness’ narrative of an incident told from the witness’ perspective and including the witness’ perception.”¹⁰⁴ Likewise, the Tenth Circuit held that “Denver was not required to present corroborating evidence and [plaintiff] was free to present its own witnesses to either refute the incidents described by Denver’s witnesses or to relate their own perceptions on discrimination in the Denver construction industry.”¹⁰⁵

E. Narrowly Tailoring a Historically Underutilized Business Enterprise Program for the Texas Department of Transportation

Even if TxDOT has a strong basis in evidence to conclude that race-based measures are needed to remedy identified discrimination, its program must still be narrowly tailored to that evidence. As discussed above, state programs that closely mirror

100. *International Brotherhood of Teamsters v. United States*, 431 U.S. 324, 399 (1977).

101. *Adarand VII*, 228 F.3d at 1168-1172.

102. *Concrete Works II*, 36 F.3d at 1520,1530.

103. *Engineering Contractors II*, 122 F.3d at 926.

104. *Id.* at 249.

105. *Concrete Works IV*, 321 F.3d at 989.

USDOT's DBE program have been upheld using that framework.¹⁰⁶ The courts have repeatedly examined the following factors in determining whether race-based remedies are narrowly tailored to achieve their purpose:

1. The efficacy of race-neutral remedies at overcoming identified discrimination;
2. The relationship of numerical benchmarks for government spending to the availability of minority- and women-owned firms and to subcontracting goal setting procedures;
3. The flexibility of the program requirements, including the provision for good faith efforts to meet goals and contract-specific goal setting procedures;
4. The congruence between the remedies adopted and the beneficiaries of those remedies;
5. Any adverse impact of the relief on third parties; and
6. The duration of the program.¹⁰⁷

1. Consider Race- and Gender-Neutral Remedies

Race- and gender-neutral approaches are a necessary component of a legally defensible and enforceable HUB program.¹⁰⁸ Failure to seriously consider such remedies has been fatal to several such programs.¹⁰⁹ Difficulty in accessing procurement opportunities, restrictive bid specifications, excessive experience requirements, and overly burdensome insurance and/or bonding requirements, for example, might be addressed by TxDOT without resorting to the use of race or gender in its decision-making. Effective remedies include unbundling of contracts into smaller contracts, paying promptly, technical assistance, and developing programs to address issues of financing, bonding, and insurance important to all small and emerging businesses.¹¹⁰ Further, governments have a duty to ferret out and punish discrimination against minorities and women by their contractors, staff, lenders, bonding companies or others.¹¹¹

106. See, e.g., *Midwest Fence II*, 840 F.3d at 953 (upholding the Illinois Tollway's program for state funded contracts modelled after Part 26 and based on Colette Holt & Associates testimony).

107. *United States v. Paradise*, 480 U.S. 149, 171 (1987); see also *Sherbrooke*, 345 F.3d at 971-972.

108. *Croson*, 488 U.S. at 507 (Richmond considered no alternatives to race-based quota); *Associated General Contractors of Ohio v. Drabik*, 214 F.3d 730, 738 (6th Cir. 2000) ("*Drabik II*"); *Philadelphia III*, 91 F.3d at 609 (City's failure to consider race-neutral alternatives was particularly telling); *Webster*, 51 F.Supp.2d at 1380 (for over 20 years County never seriously considered race-neutral remedies); cf. *Aiken*, 37 F.3d at 1164 (failure to consider race-neutral method of promotions suggested a political rather than a remedial purpose).

109. See, e.g., *Florida A.G.C. Council, Inc. v. State of Florida*, Case No.: 4:03-CV-59-SPM at 10 (N. Dist. Fla. 2004) ("There is absolutely no evidence in the record to suggest that the Defendants contemplated race-neutral means to accomplish the objectives" of the statute.); *Engineering Contractors II*, 122 F.3d at 928.

110. See 49 CFR § 26.51.

The requirement that the agency must meet the maximum feasible portion of the goal through race-neutral measures, as well as estimate that portion of the goal it predicts will be met through such measures, has been central to the holdings that the DBE program regulations meet narrow tailoring.¹¹²

However, strict scrutiny does not require that every race-neutral approach be implemented and proven ineffective before race-conscious remedies may be utilized.¹¹³ While an entity must give good faith consideration to race-neutral alternatives, “strict scrutiny does not require exhaustion of every possible such alternative ... however irrational, costly, unreasonable, and unlikely to succeed such alternative might be... [S]ome degree of practicality is subsumed in the exhaustion requirement.”¹¹⁴

2. Set Targeted HUB Contract Goals

Numerical goals or benchmarks for HUB participation must be substantially related to their availability in the relevant market.¹¹⁵ For example, the USDOT DBE program regulations require that the overall goal be based upon demonstrable evidence of the number of DBEs “ready, willing, and able” to participate on the recipient’s federally assisted contracts.¹¹⁶ “Though the underlying estimates may be inexact, the exercise requires the States to focus on establishing realistic goals for DBE participation in the relevant contracting markets. This stands in stark contrast to the program struck down in *Croson*.”¹¹⁷

The HUB statute sets overall, blanket goals for HUB participation by broad industry category.

Goal setting is not an absolute science. In holding the DBE regulations to be narrowly tailored, the Eighth Circuit noted that “[t]hough the underlying estimates may be inexact, the exercise requires the States to focus on establishing realistic goals for DBE participation in the relevant contracting markets.”¹¹⁸ However, sheer speculation cannot form the basis for an enforceable measure.¹¹⁹

111. *Croson*, 488 U.S. at 503 n.3; *Webster*, 51 F.Supp.2d at 1380.

112. *See, e.g., Sherbrooke*, 345 F.3d. at 973.

113. *Grutter*, 529 U.S. at 339.

114. *Coral Construction*, 941 F.2d at 923.

115. *Webster*, 51 F.Supp.2d at 1379, 1381 (statistically insignificant disparities are insufficient to support an unexplained goal of 35 percent M/WBE participation in County contracts); *see also Associated Utility Contractors of Maryland, Inc. v. Mayor and City Council of Baltimore, et al.*, 83 F.Supp.2d 613, 621 (D. Md. 2000) (“*Baltimore I*”).

116. 49 C.F.R. § 26.45 (b).

117. *Id.*

118. *Sherbrooke*, 345 F.3d. at 972.

119. *BAGC v. Chicago*, 298 F.Supp.2d at 740 (City’s MBE and WBE goals were “formulistic” percentages not related to the availability of firms).

It is settled case law that goals for a particular solicitation should reflect the specifics of the contract, rather than reiterate annual aggregate targets. Goals must be contract-specific. “Standard” goals, such as for “construction” or “professional services,” are not defensible. Contract goals must be based upon the availability of HUBs to perform the anticipated scopes of the contract, location, progress towards meeting annual goals, and other factors. Not only is this legally mandated,¹²⁰ but this approach also reduces the need to conduct good faith efforts reviews, as well as the temptation to create “front” companies and sham participation to meet unreasonable contract goals. While this is more labor intensive than defaulting to the annual, overall goals or “standard” goals, there is no option to avoid meeting narrow tailoring because to do so would be more burdensome.

3. Ensure Flexibility of Goals and Requirements

It is imperative that remedies not operate as fixed quotas.¹²¹ A HUB program must provide for contract awards to firms that fail to meet the contract goals but make adequate good faith efforts to do so.¹²² Further, firms that meet the goals cannot be favored over those that made good faith efforts. In *Croson*, the Court refers approvingly to the contract-by-contract waivers used in the USDOT’s DBE program.¹²³ This feature has proven critical to the holding that the DBE program meets the narrow tailoring requirement.¹²⁴

4. Review Program Eligibility for Over-Inclusiveness and Under-Inclusiveness

The over- or under-inclusiveness of persons included in TxDOT’s HUB program is an additional consideration and addresses whether the remedies truly target the evil identified. The “fit” between the problem and the remedy manifests in three ways: which groups to include; how to define those groups; and which persons will be eligible to be included within those groups.

The groups included must be based upon the evidence.¹²⁵ The “random inclusion” of ethnic or racial groups that may never have experienced discrimina-

120. See *Sherbrooke*, 345 F.3d at 972; *Coral Construction*, 941 F.2d at 924.

121. See 49 C.F.R. 26.43 (quotas are not permitted and setaside contracts may be used only in limited and extreme circumstances “when no other method could be reasonably expected to redress egregious instances of discrimination”).

122. See, e.g., *BAGC v. Chicago*, 298 F. Supp.2d at 740 (“Waivers are rarely or never granted...The City program is a rigid numerical quota...formulistic percentages cannot survive strict scrutiny.”).

123. 488 U.S. at 508; see also *Adarand VII*, 228 F.3d at 1181.

124. See, e.g., *Sherbrooke*, 345 F.3d. at 972; *Webster*, 51 F. Supp. 2d at 1354, 1380 .

125. *Contractors Association of Eastern Pennsylvania v. City of Philadelphia*, 6 F.3d 990, 1007-1008 (3rd Cir. 1993) (“*Philadelphia II*”) (strict scrutiny requires data for each minority group; data was insufficient to include Hispanics, Asians or Pacific Islanders or Native Americans).

tion in the entity’s market area may indicate impermissible “racial politics”.¹²⁶ In striking down Cook County, Illinois’ construction program, the Seventh Circuit remarked that a “state or local government that has discriminated just against blacks may not by way of remedy discriminate in favor of blacks and Asian-Americans and women.”¹²⁷ At least one court has held that some quantum of evidence of discrimination for each group is sufficient; *Croson* does not require that each group included in the ordinance suffer equally from discrimination.¹²⁸ Therefore, remedies should be limited to those firms owned by the relevant minority groups as established by the evidence that have suffered actual harm in the market area.¹²⁹

Next, the firm’s owner(s) must be disadvantaged. The DBE program’s rebuttable presumptions of social and economic disadvantage, including the requirement that the disadvantaged owner’s personal net worth not exceed its regulatory threshold and that the small business concern must meet the Small Business Administration’s size definitions for its industry, have been central to the courts’ holdings that it is narrowly tailored.¹³⁰ “[W]ealthy minority owners and wealthy minority-owned firms are excluded, and certification is available to persons who are not presumptively [socially] disadvantaged but can demonstrate actual social and economic disadvantage. Thus, race is made relevant in the program, but it is not a determinative factor.”¹³¹ Further, anyone may challenge the disadvantaged status of any firm.¹³²

5. Evaluate the Burdens on Third Parties

Failure to make “neutral” changes to contracting and procurement policies and procedures that disadvantage HUBs and other small businesses may result in a finding that the program unduly burdens non-HUBs.¹³³ However, “innocent” parties can be made to share some of the burden of the remedy for eradicating racial discrimination.¹³⁴ The burden of compliance need not be

126. *Webster*, 51 F.Supp.2d at 1380–1381.

127. *Builders Association of Greater Chicago v. County of Cook*, 256 F.3d 642, 646 (7th Cir. 2001).

128. *Concrete Works IV*, 321 F.3d at 971 (Denver introduced evidence of bias against each group; that is sufficient).

129. *H. B. Rowe Co. v. Tippett*, 615 F.3d 233, 254 (4th Cir. 2010) (“[T]he statute contemplates participation goals only for those groups shown to have suffered discrimination. As such, North Carolina’s statute differs from measures that have failed narrow tailoring for over-inclusiveness.”).

130. *Sherbrooke*, 345 F.3d at 973; see also *Grutter*, 539 U.S. at 341; *Adarand VII*, 228 F.3d at 1183-1184 (personal net worth limit is element of narrow tailoring); cf. *Associated General Contractors v. City of New Haven*, 791 F.Supp. 941, 948 (D. Conn. 1992), vacated on other grounds, 41 F.3d 62 (2nd Cir. 1992) (definition of “disadvantage” was vague and unrelated to goal).

131. *Sherbrooke*, 345 F.3d. at 973.

132. 49 C.F.R. §26.87.

133. See *Engineering Contractors Assoc. of South Florida, Inc. v. Metropolitan Dade County*, 943 F. Supp. 1546, 1581-1582 (S.D. Fla. 1996) (“*Engineering Contractors I*”) (County chose not to change its procurement system).

placed solely upon those firms directly responsible for the discrimination. The proper focus is whether the burden on third parties is “too intrusive” or “unacceptable”.

Burdens must be proven and cannot constitute mere speculation by a plaintiff.¹³⁵ “Implementation of the race-conscious contracting goals for which TEA-21 provides will inevitably result in bids submitted by non-DBE firms being rejected in favor of higher bids from DBEs. Although contract goals place a burden on non-DBE firms, this fact alone does not invalidate TEA-21. If it did, all affirmative action programs would be unconstitutional because of the burden upon non-minorities.”¹³⁶

Narrow tailoring permits certified firms acting as prime contractors to count work they self-perform towards meeting contract goals provided that the study finds discriminatory barriers to prime contract opportunities. There is no requirement that a program be limited only to the subcontracting portions of contracts. The DBE program regulations provide this remedy for discrimination against DBEs seeking prime work,¹³⁷ and the regulations do not limit the application of the program to only subcontracts.¹³⁸ The trial court in upholding the Illinois DOT’s DBE program explicitly recognized that barriers to subcontracting opportunities affect the ability of DBEs also to compete for prime work on a fair basis.

This requirement that goals be applied to the value of the entire contract, not merely the subcontracted portion(s), is not altered by the fact that prime contracts are, by law, awarded to the lowest bidder. While it is true that prime contracts are awarded in a race- and gender-neutral manner, the Regulations nevertheless mandate application of goals based on the value of the entire contract. Strong policy reasons support this approach. Although laws mandating award of prime contracts to the lowest bidder remove concerns regarding direct discrimination at the level of prime contracts, the indirect effects of discrimination may linger. The ability of DBEs to

134. *Concrete Works IV*, 321 F.3d at 973; *Wygant*, 476 U.S. at 280-281; *Adarand VII*, 228 F.3 at 1183 (“While there appears to be no serious burden on prime contractors, who are obviously compensated for any additional burden occasioned by the employment of DBE subcontractors, at the margin, some non-DBE subcontractors such as *Adarand* will be deprived of business opportunities”); *cf. Northern Contracting II*, at *5 (“Plaintiff has presented little evidence that is [sic] has suffered anything more than minimal revenue losses due to the program.”).

135. *Rowe*, 615 F.3d at 254 (prime bidder had no need for additional employees to perform program compliance and need not subcontract work it can self-perform).

136. *Western States*, 407 F.3d at 995.

137. 49 C.F.R. § 26.53(g) (“In determining whether a DBE bidder/offeror for a prime contract has met the contractor goal, count the work the DBE has committed to perform with its own forces as well as the work that it has committed to be performed by DBE subcontractors and suppliers.”).

138. 49 C.F.R. § 26.45(a)(1).

compete successfully for prime contracts may be indirectly affected by discrimination in the subcontracting market, or in the bonding and financing markets. Such discrimination is particularly burdensome in the construction industry, a highly competitive industry with tight profit margins, considerable hazards, and strict bonding and insurance requirements¹³⁹

6. Examine the Duration and Review of the Program

Race-based programs must have durational limits. A race-based remedy must “not last longer than the discriminatory effects it is designed to eliminate.”¹⁴⁰ The unlimited duration and lack of review were factors in the court’s holding that the City of Chicago’s M/WBE construction program was no longer narrowly tailored; Chicago’s program was based on 14-year-old information, which while it supported the program adopted in 1990, no longer was sufficient standing alone to justify the City’s efforts in 2004.¹⁴¹ How old is too old is not definitively answered¹⁴² but governments would be wise to analyze data at least once every five or six years.

In contrast, the USDOT DBE program’s periodic view by Congress has been repeatedly held to provide durational limits.¹⁴³ Similarly, “two facts [were] particularly compelling in establishing that [North Carolina’s M/WBE program] was narrowly tailored: the statute’s provisions (1) setting a specific expiration date and (2) requiring a new disparity study every five years.”¹⁴⁴

139. *Northern Contracting II*, 2005 U.S. Dist. LEXIS 19868 at 74.

140. *Adarand III*, 515 U.S. at 238.

141. *BAGC v. Chicago*, 298 F.Supp.2d at 739.

142. *See, e.g., Associated General Contractors of Ohio, Inc. v. Drabik*, 50 F.Supp.2d 741, 747, 750 (S.D. Ohio 1999) (“*Drabik I*”) (“A program of race-based benefits cannot be supported by evidence of discrimination which is now over twenty years old.... The state conceded that it had no additional evidence of discrimination against minority contractors, and admitted that during the nearly two decades the Act has been in effect, it has made no effort to determine whether there is a continuing need for a race-based remedy.”); *Brunet v. City of Columbus*, 1 F.3d 390, 409 (6th Cir. 1993) (fourteen-year-old evidence of discrimination “too remote to support a compelling governmental interest.”).

143. *See Western States*, 407 F. 3d at 995.

144. *Rowe*, 615 F.3d at 253.

III. THE TEXAS DEPARTMENT OF TRANSPORTATION'S BUSINESS DIVERSITY PROGRAMS

The Texas Department of Transportation (“TxDOT”) administers civil rights contracting programs to ensure competitive and fair contracting in its marketplace. TxDOT implements a Disadvantaged Business Enterprise (“DBE”) program for its federally assisted contracts funded by the United States Department of Transportation (“USDOT”) and a Historically Underutilized Business (“HUB”) program for state funded procurements.¹⁴⁵ This Chapter focuses on the contours of each program.

A. The Texas Department of Transportation's Disadvantaged Business Enterprise Program

TxDOT receives financial assistance from the Federal Highway Administration (“FHWA”), the Federal Aviation Administration (“FAA”) and the Federal Transit Administration.¹⁴⁶ As a condition of receipt, the Department must administer a DBE program that complies with 49 C.F.R. Part 26 (“Part 26”).

TxDOT's current DBE Program Plan contains all required Part 26 elements. TxDOT ensures non-discrimination in the award and administration of USDOT-assisted contracts. TxDOT is responsible for administering its DBE Program in good faith and is legally accountable for expenditures of USDOT financial assistance in accordance with Part 26 and other federal mandates. TxDOT's DBE Program Policy ensures that DBEs, as defined by Part 26, have an equal opportunity to receive and participate in these contracts. Implementation of the DBE program is accorded the same priority as compliance with all other legal obligations binding TxDOT in its financial agreements with USDOT. TxDOT disseminates its *DBE Program Policy* on its website and throughout the agency and distributes copies to DBE and non-DBE contractors that perform work for TxDOT on USDOT-assisted contracts.

TxDOT is a certifying member of the Texas Unified Certification Program (“TUCP”). The TUCP includes six certifying entities that have executed a memorandum of agreement to perform DBE certifications for the State of Texas. The TUCP certify-

145. TxDOT's Civil Rights Division also administers several additional programs, including those related to equal opportunity, affirmative action, accessibility, and non-discrimination.

146. TxDOT's Public Transportation Division chose not to participate in this study.

ing entities or partners are TxDOT, City of Houston, City of Austin, Corpus Christi Regional Transportation Authority, North Central Texas Regional Certification Agency, and the South Central Texas Regional Certification Agency. These entities conduct “one stop shopping” for the USDOT DBE Program and for the Airport Concession Disadvantaged Business Enterprise (“ACDBE”) Program. Applications are distributed among the members by geographical location and by industry.

To qualify for DBE certification, an applicant firm must demonstrate that it is a for-profit small business concern and at least 51 percent owned and controlled by socially and economically disadvantaged individuals. Certification decisions are based upon the eligibility standards and procedures set forth in Part 26. The work performed by certified DBEs must meet the North American Industry Classification System (“NAICS”) code for the type of services to be performed. Certified firms are listed in the TUCP statewide directory available online.

As a recipient of FHWA and FAA funds in excess of \$250,000.00, TxDOT sets triennial DBE goals using the Part 26 two-step goal-setting process.¹⁴⁷ Before establishing a goal, TxDOT consults with minority organizations and industry associations concerning opportunities for DBEs and the effectiveness of TxDOT’s efforts to establish a level playing field for DBEs. TxDOT’s overall DBE goal submissions include a summary of information and comments received during the public participation process and TxDOT’s response to these comments.

The Civil Rights Division (“CIV”) administers TxDOT’s DBE program. The Director serves as TxDOT’s DBE Liaison Officer (“DBELO”). The DBELO is responsible for implementing all aspects of the DBE Program.¹⁴⁸ This includes, but is not limited to, identifying contracts and solicitations so that DBE goals are included in procurement documents as well as monitoring the results of the program.

The DBELO works with CIV professional staff to administer and coordinate TxDOT’s DBE Program Plan. Using a tiered approach of contract oversight, program administration, and verification of contractor compliance at Division and District levels, CIV ensures compliance with all provisions of Part 26. TxDOT’s 25 District offices serve as the initial and primary contact for prime contractors and subcontractors associated with all phases of TxDOT’s DBE Program, from project initiation to project close-out.

In conformance with Part 26, prompt payment obligations and release of retainage obligations¹⁴⁹ are set forth in USDOT-assisted contracts.¹⁵⁰ TxDOT *Special Provision 009-009* requires prime contractors to pay all subcontractors, material suppliers, and truckers within 10 days of the date when the prime contractor

147. For Federal fiscal years 2017 to 2019, TxDOT’s FHWA overall DBE goal is 12.6 percent of which 6.8 percent is race-conscious (projects with goals) and 5.8 percent is race-neutral (projects with no goals). For Federal fiscal years 2019 to 2021, TxDOT’s FAA goal is 12.0 percent of which 6.4 percent is race-conscious and 5.6 percent is race-neutral.

148. As required by Part 26, the DBELO has direct, independent access to TxDOT’s Executive Director.

receives a payment from TxDOT. Prime contractors must also pay any retainage on subcontractor's work within 10 days after satisfactory completion. Satisfactory completion means that the subcontractor has fulfilled the contract requirements, including submittal of all information required by the contract, and that TxDOT has inspected and approved the subcontractor's work. TxDOT may pursue actions against the prime contractor for failure to execute prompt payment requirements. Consequences include withholding all or a portion of an estimate; suspending work; withholding project acceptance; and placing prime contractors in default for break of contract, or other actions deemed appropriate.

Vendors may enroll in the Department's Early Payment Program ("EPP"). Vendors receive expedited payment in exchange for a discount, which is deducted from the gross amount of the invoice based upon the number of days the payment is paid early. All invoices are sent electronically to one dedicated team of specialists, regardless of region or division. Approved invoices are then expedited to accounts payable, and the payment process is accelerated.¹⁵¹

TxDOT also has a joint check policy that delineates the requirements for a joint check agreement between a DBE subcontractor and a prime contractor to the DBE's materials supplier. All joint check arrangements must be pre-approved by TxDOT before the transaction takes place.¹⁵²

Prior to letting a contract, a DBE contract goal will be established by TxDOT, including a possible "zero" goal. Once a bid is advertised with a DBE contract goal, prime contractors must submit a DBE Utilization Plan ("UP") through TxDOT's Diversity Management System ("DMS").¹⁵³ UPs must be submitted by contractors as a matter of responsiveness no later than 5 calendar days following official notification that the contractor is the apparent low bidder.¹⁵⁴

The prime contractor is responsible for entering information on all subcontractors and suppliers for which DBE goal credit is sought (including second and third tier

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149. Retainage means the percent of each contractor payment retained until contract completion. Retainage provides an incentive to the contractor or subcontractor to complete a project and to give the agency protection against problems such as liens, contractual defaults, and delays.
 150. These clauses are both a Part 26 requirement and a contractual requirement.
 151. Vendors can elect to receive daily, weekly or monthly detailed remittance statements with details on all invoices paid early.
 152. Joint checks for payment of materials or supplies are acceptable when the following conditions are met: (i) the prime contractor issuing the check acts solely as a guarantor; (ii) the DBE subcontractor must release the check to the supplier; (iii) the DBE subcontractor negotiates the quantity, price, and delivery of the materials; (iv) the DBE subcontractor is responsible for both furnishing and installing the materials or supplies; (v) the prime contractor cannot require the subcontractor to use a specific supplier or the prime contractor's negotiated price; and (vi) the arrangement is short-term with the purpose being to establish or increase the line of credit between the DBE subcontractor and the supplier.
 153. The DMS is a web-based software program used to collect, verify and manage payment information for prime contractors and subcontractors working on federally assisted projects.
 154. A DBE prime contractor is not required to submit a UP. DBE primes must report subcontract activity for all subcontractors including DBEs and non-DBEs in DMS after contract execution.

subcontractors). The prime contractor must also provide a detailed description of the work each subcontractor will be performing and select the NAICS code applicable to that type of work. Once this information is entered, the subcontractor will receive a DMS-generated email requesting that it confirm the commitment in DMS. A prime contractor must meet the DBE contract goal or document its adequate good faith efforts (“GFEs”) to do so. GFEs are efforts bidders are reasonably expected to make to produce a level of participation sufficient to meet the contract goal. TxDOT follows the GFE guidance set forth in Appendix A of Part 26 as its guide in evaluating all GFEs. GFEs must be documented before contract award and through the life of the contract.

DBEs serving as primes must meet contract goals and document their GFEs if their self-performance falls short of contract goals, after the UP submission process. DBEs may count the work they perform with their own forces as well as work performed by DBE subcontractors and suppliers towards goals.

If a goal cannot be met in whole or in part, the prime contractor must submit a *Certification of Good Faith Efforts Form* along with supporting documentation in DMS. If TxDOT determines that the apparent successful bidder has failed to make GFEs, it must, before the award, provide the bidder with administrative reconsideration.¹⁵⁵ TxDOT must allow the contractor to provide written documentation and arguments concerning whether it met the goal or made adequate GFEs to do so. In the event of an unfavorable decision, TxDOT will issue a written disposition explaining the basis for finding that the firm did not meet the goal or document adequate GFEs. This disposition is administratively final and is not appealable to the USDOT.

Prime contractors must make GFEs to replace a DBE that is terminated or that has otherwise failed to complete its work on a contract with another certified DBE, to the extent required to meet the contract goal. The prime contractor must obtain prior written administrative approval of the substitute DBE and provide copies of new or amended subcontracts or document GFEs to obtain a DBE replacement contractor.

An important part of the compliance review process is whether the certified firm is performing a commercially useful function (“CUF”). A firm performs a CUF when it is responsible for a discrete task or sequence of tasks using its own forces or by proactively supervising on-site execution of tasks. The given firm must be certified in the North American Industry Classification System (“NAICS”) code(s) in order for the prime contractor to receive credit towards meeting the applicable goal. To ascertain whether a firm is performing a CUF, the prime contractor should ask potential DBE firms:

155. In conformance with Part 26, the reconsideration official will not have played any role in the original determination that the bidder/offeror did not document adequate GFEs.

- How long has your company been in business?
- Will the DBE manage and supervise the work with its own managers and superintendents?
- Will the DBE perform work with its own forces?
- Will the DBE be responsible with respect to materials and supplies used on the contract, negotiating price, determining quantity and quality, installing (where applicable) and paying for the material itself?
- What work, if any, does the DBE intend to subcontract and is that amount consistent with industry practice?

TxDOT field personnel conduct CUF reviews and inspect jobsites to verify that the DBE firm is performing and managing the work.¹⁵⁶ They review project-related documents, including executed subcontracts, certified payrolls, invoices, purchase orders, and delivery tickets and equipment title of ownership or lease agreements. The reviewer also interviews DBE personnel. Each CUF review requires completion of a *DBE Program CUF Questionnaire*. CUF reviews must be conducted on all DBE work, with or without goals. They must be completed by the Area Office within 60 days of the DBE's start date of a project.

If a DBE is presumed not to be performing a CUF, TxDOT will offer the firm the opportunity to provide rebuttal information. The DBE is given ten days from the date it receives the letter to respond to the District. District staff will review the rebuttal response and subsequently notify the DBE and the prime contractor in writing of the disposition. If the presumption prevails, none of the work performed by the DBE will count as participation. Denial of goal credit may occur before or after a CUF determination has been made by TxDOT. If the denial of goal credit results in a goal shortfall, the prime contractor will be required to obtain a substitute DBE to meet the contract goal or provide an adequate GFE when applicable. CUF determinations are not appealable to the USDOT.

TxDOT District staff are responsible for monitoring goal attainment during the project. If a prime contractor is not meeting the project's DBE goal, TxDOT will generate a *Not Meeting the Goal Letter* in DMS notifying the prime contractor to review its goal attainment progress. The prime contractor will be required to provide a corrective action plan to meet the goal or to document its good faith efforts to do so.

156. Commercially useful function is defined in 49 C.F.R. § 26.55 (c) 1 as: a discrete set or group of tasks, the responsibility for performance of which is discharged by the DBE by using its own forces or by actively supervising on-site the execution of the tasks by entity for whose work the DBE is responsible. Without limiting the generality of the foregoing, a DBE is considered not to be performing a commercially useful function if it subcontracts to non-DBEs more than 50 percent of a contract being counted towards the applicable DBE participation goal.

Failure by the prime contractor to carry out DBE program requirements constitutes a material breach of contract. It may result in termination of the contract or other remedies, as TxDOT deems appropriate. Remedies may include: withholding all or a percentage of monthly partial payments; liquidated damages; contract termination; referral of any unlawful actions to the appropriate enforcement agencies; and other actions as appropriate.

TxDOT reports any false, fraudulent, or dishonest conduct associated with the DBE program to the USDOT Office of Inspector General. The TxDOT Watch reporting system allows individuals to report fraud, waste, and abuse anonymously. This reporting system is part of the Department's Compliance Division (CMP) and intended for the reporting of fraud, waste, abuse and/or serious violations of Department policy. This Anonymous Reporting System is offered through an independent third party. All reports will be held to the highest possible level of confidentiality. Citizens and TxDOT employees may also report suspected fraudulent activity directly to the TxDOT Compliance Division via email, phone, or mail.

TxDOT employs a variety of outreach and training opportunities. CIV conducts webinars for prime contractors and DBEs which include demonstrations on how to submit monthly project information on progress reports in the DMS and verify progress payments.

TxDOT also administers the *Alliance Program* that provides DBEs with firm-specific training and guidance to help them become competitive within the heavy highway or construction industry. The Program provides networking opportunities, project-management assistance between subcontractors and primes, and access to training in the areas of business development, business management, and construction management. These services include classroom instruction, technical assistance, vendor events, and industry partnering at the local, state and federal levels.

TxDOT provides five training guides available on its website for program administration to assist participants in the DBE program.

- The *DBE Contractors' Guide* provides guidance about processes and procedures to be used by the DBE contractor to successfully complete all phases of DBE compliance from project initiation to project close-out.
- The *Prime Contractors' DBE Guide* provides guidance on DBE program requirements and addresses the prime contractors' responsibilities and best practices relative to these requirements.
- The *Local Government DBE Compliance and Monitoring Guide* contains guidance on the federal and state requirements of the DBE Program and aids these entities in managing and monitoring all phases of DBE compliance.

- The *District DBE Compliance and Monitoring Guide* and *Civil Rights DBE Compliance and Monitoring Guide* offer program guidance and outline the duties for District and CIV personnel directly involved in the day-to-day implementation of the program.

B. The Texas Department of Transportation’s Historically Underutilized Business Program

Along with other governmental agencies of the State of Texas (“State”), TxDOT administers the State’s Historically Underutilized Business (“HUB”) Program. The HUB program was instituted in 1991. The HUB Program seeks to promote full and equal procurement and business opportunities for small, minority- and women-owned businesses. TxDOT’s Policy is to provide equal access and opportunities for minority-, woman-, and service-disabled veteran-owned businesses and to implement the HUB Program via race- and gender-neutral means.

Title 34 of the Texas Administrative Code (“TAC”) § 20.281 and Government Code § 2161.181 and §2161.182, requires each State agency to make a good faith effort to utilize HUBs in contracts for construction, services (including professional and consulting services) and commodities purchases (including emergency services). The HUB program sets aspirational goals by procurement category. TxDOT achieves this by contracting directly with HUBs or indirectly through subcontracting opportunities. HUB subcontracting plans are required for contracts over \$100,000.00.

The HUB program goals originate from the State’s 2009 State Disparity Study.¹⁵⁷ The statewide goals are:

- 11.2 percent for heavy construction other than building construction.
- 21.1 percent building construction.
- 32.9 percent for special trade construction.
- 23.7 percent for professional services.
- 26.0 percent for all other services.
- 21.1 percent for commodities.¹⁵⁸

CIV’s HUB Program Section provides direction and consultation to TxDOT’s Divisions and Districts pertaining to the administration of the HUB Program. The Section oversees the following activities:

157. The 2009 Study did not provide an analysis specific to TxDOT.

158. §20.284.

- Managing and maintaining HUB policy and procedures;
- Assisting and verifying HUB certification;
- Ensuring subcontractor compliance;
- Providing TxDOT's staff with HUB requirements during the procurement and contract phase;
- Providing HUB requirements during the pre-bid and post award meetings;
- Participating and facilitating HUB internal and external communications;
- Collecting, analyzing and submitting various HUB reports; and
- Performing and managing all other HUB Program initiatives, as assigned.

To qualify as a HUB, the applicant must submit a HUB application to the Texas Comptroller of Public Accounts. The submission must also include general information about the business and supporting documentation to substantiate the firm's business structure and HUB eligibility. The applicant firm must be a for-profit entity whose principal place of business (defined as the location where the qualifying owner directs, controls, and coordinates daily operations and activities) is in Texas. The firm must be at least 51 percent owned by an Asian-Pacific American, Black American, Native American, American woman and/or service-disabled veteran, who resides in the State and actively participates in the control, operations and management of the entity's affairs. The qualifying owner must be an American citizen and Texas resident who has a proportionate interest and demonstrates active participation in control, operations, and management of the firm's affairs. In accordance with Texas Administrative Code § 23.61, in order to maximize the number of certified HUBs, State agencies pursue certification agreements with local governments and non-profit organizations in the State which certify businesses under substantially the same definition as a HUB. If TxDOT certifies a DBE, it also may certify that DBE as a HUB, if the business meets the respective requirements, pursuant to an agreement with the Texas Comptroller of Public Accounts.

HUB certification is good for four years, provided that the business continues to meet the eligibility requirements. Vendors can contact TxDOT's HUB Coordinator to introduce their business. TxDOT and other State agencies use the *Centralized Master Bidder's List/HUB Directory* to solicit bids from certified HUBs.¹⁵⁹ Prime contractors use the Directory to identify HUBs for subcontracting opportunities.

159. The Centralized Master Bidder's List ("CMBL") is used for HUB and non-HUB vendors. Vendors interested in providing services or goods to the State can register for the CMBL to receive bidding opportunities for contracts exceeding \$5,000.00.

State agencies seeking to enter into a contract with a value of \$100,000.00 or more must, before solicitation, determine whether there will be subcontracting opportunities for HUBs. Firms responding to the solicitation must submit a *HUB Subcontracting Plan* (“HSP”). Contractors must make a good faith effort to meet or exceed the contract’s HUB goal. The HSP must provide prescribed information for each of the listed subcontractors. The HSP is required as a matter of responsiveness.

TxDOT personnel conduct reviews using the *HUB Subcontracting Review Form* that evaluates whether the submission is compliant or non-compliant by the following methods:

1. Utilizing only Texas Certified HUBs (100 percent HUB Subs).
2. HUB and non-HUB Utilization (meet or exceed the HUB Goal).
3. HUB and non-HUB Utilization (does not meet or exceed) – needs additional documentation of good faith efforts.
4. Self-performing (no sub provider usage – 0 percent).

TxDOT’s staff ensure that prime contractors notify participating subcontractors within ten days of contract award. All required forms must be submitted to TxDOT in accordance with TxDOT specifications.

The vendor must report to TxDOT the volume of work performed under the contract, and the portion of the work that was performed with its employees, non-HUB contractors/vendors, and other HUB vendors. During the course of the contract, TxDOT’s staff document the contractor’s/vendor’s GFE compliance in the contract file. TxDOT must audit the contractor’s or vendor’s compliance with the HSP. Where necessary, TxDOT affords the contractor/vendor the opportunity to submit documentation to explain why failure to fulfill the HSP should not be attributed to a lack of good faith by the contractor/vendor.

TxDOT’s staff monitor and review revisions to either the HSP or the original scope of the contract. They also conduct audits of the *HSP Prime Contractor Assessment Report* and the *HSP Compliance Review Form* to ensure HUB program integrity.

TxDOT’s staff also ensure completion of the Semi-Annual and Annual HUB reports, due March 15th and September 15th of each year. TxDOT uses these reports to track its expenditures and as a benchmarking tool to meet or exceed its HUB utilization.¹⁶⁰

160. Information contained in the reports can be used by vendors and the general public to determine where State agencies purchase products or services.

C. Experiences with the Texas Department of Transportation's Business Diversity Programs

To explore the impacts of race- and gender-neutral contracting policies and procedures and the implementation of TxDOT's DBE and HUB programs, we interviewed 507 individuals about their experiences and solicited their suggestions for changes. The following are summaries of the topics discussed. Quotations are indented and have been edited for readability. They are representative of the views expressed during the group interviews.

1. Accessing Information about TxDOT's Contract Opportunities

Information about TxDOT projects was difficult for some small firms to access.

The opportunities aren't there a lot of times just because the information's not out there. I get some bids but it's probably a week before the job lets and I don't have time to put all that together. It's a rush deal. It kind of ties my hands on business and I want to make sure that I cover all my bases in a timely manner that I can have just as much opportunity to look over the bid as they do.

The notifications that we receive for anything with TxDOT or HUB is normally late.

TxDOT works on a wide variety of different things and some departments that are geared towards maintenance or road building, or that kind of thing, don't really deal with advertising agencies. It was tough to learn the ropes of that.

There was one on the street a few weeks ago that we looked at, but we didn't have enough time to prepare a response to it.... And for the size it was it required six months or more to prepare for it. That's where the work of internally knowing when it's about to hit the street, before it hits the street. Because if you don't have that intel it's difficult to be positioned well.

How do you make this more transparent?

Building relationships was reported to be key to accessing consulting contracts.

It's all based on relationships.

[Another barrier is] the world is divided into two people. You either worked for TxDOT or you did not.... Some of the larger

companies who can go out and afford to pay somebody 150, 160, \$170,000 a year to do nothing but march around the State and introduce them to TxDOT folks..... How do you prove you're sort of being pushed aside because you don't have a former district engineer that works for your company?

Our barrier [is] just cracking into developing those relationships with the prime engineering firms because a lot of ours have been- they have their staff lined up years in advance or even that we don't have a chance to make those relationships to really make an impact on trying to get a project today. You have to kind of do that way out in advance to get projects that are down the road.

Some DBEs suggested that more targeted outreach by TxDOT would help them to develop the necessary relationships.

It was more advantageous to be able to market to the local Districts and have kind of a region that we market to. We may not have the resource to go statewide with a marketing approach.

[TxDOT] tell[s] us, well, you need to be at events. You need to be at the table. So that's why for us minority businesses, from El Paso, trying to make it all the way to Austin is very costly and still I try to do it once a month or every other month to try to meet with agencies and to be in front of them and reminding them of our capabilities. But then they give preference to the companies that are always there.

2. Obtaining TxDOT Work

Minority- and women-owners generally reported that TxDOT's DBE program was an important vehicle for reducing barriers and leveling the playing field.

The DBE aspect for our company has been a huge advantage for us and it's one of the most appealing parts for me to come into this industry, for me to purchase this company.... Having that DBE qualification has really made all the difference in the world for us. There's a lot of contractors in the area that do a lot of their own traffic control, that have the ability to perform that work, but because of these goals and these contracts, it's given us the opportunity to take on a lot of that work.

You would have a better chance if you get on that DBE list because they have to go out and look for you.

Several certified firms reported that TxDOT is one of the easier agencies with which to do business.

I am a certified DBE in five different states, and [State] being my home State. So, I have a lot of different experiences with different entities. All of these years, I can say that TxDOT is at the top of the list as far as easiness to work with and the Texas DOT side, knowing what they're doing, and just don't have a lot of issues, and still don't until recently.

As far as experience with TxDOT, I have found them to be very respectful and good to work with.

TxDOT is at the top of the list as far as easiness to work with and the TxDOT side, knowing what they're doing, and just don't have a lot of issues.

The HUB program's prohibition on counting a certified firm's self-performance towards the goal reduces the profitability and options for HUBs.

To be able to self-perform the HUB requirement would be another benefit.

If we would be able to self-fulfill as a HUB, that would really be advantageous to us. It really puts us at a disadvantage, if we have to, as a small firm, you'll not be able to self-fulfill, because we get opportunities to do team arrangements with other firms, and if we agree to team with a firm, they all get the advantage of utilizing our HUB status to fulfill their goal, but we don't get to use theirs.

I wanted to ditto on that self-performance and self-fulfilled capability for to be counted for the HUB status. I think that would really be advantages that it would help the small businesses to be the lead, to learn to be the lead and build stronger teams.

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I think that would really be advantageous that it would help the small businesses to be the lead, to learn to be the lead and build stronger teams.

Recently established DBEs often complained that it is difficult to break into the networks for TxDOT projects.

I can't tell you how to run your business, but if you show up 15 years with the same five firms, at some point, somebody ought to be able to say, "Can we add somebody different this year?" Or, "Hey, can you mentor this person on to your team and help them grow?"

Because we're so isolated [in the El Paso region] from the rest of the State that it's usually the same contractors that work here. And so, with time the relationships get built between the DBEs and the contractors and the subcontractors. So, it's almost like a permanent team that does the work. And so, they fell like, "Well I've already got my guys so we I don't need to do all of that because I'm already set up." And so, for somebody to come in and try to break in I can see how it's difficult.

General contractors agreed that they use firms that they have worked with when possible to reduce risk and ensure a timely and quality job.

My project managers, they do use their own vendors. They have the relationships that they've built. And they know that when they use those people, they're going to go above and beyond and take care of them no matter what they have to do in order to make sure that they get the job done and get it done right, get it done on schedule, and under budget, which is great. That's what we want. To walk away from something like that and to try something new out on a list from somebody that we don't know, there's certain risks that you have to take in order to do that. And a lot of times, we're running so lean and we're trying to do it as fast as possible in the best quality of service.... We don't want to take that risk. I would be more inclined to use this guy if I know I had some kind of protection on the backside. Because if a guy calls me, or sends me a quote on bid day, and says, "Here's our scope," and we call him and try to vet him out on the phone. "Well, I'm a TxDOT certified DBE." "How much TxDOT work have you done?" "Well, none." I'm like, "Well, I'm not gonna be your first guy."

Some large firms stated that TxDOT needs to do more to assist them to use new DBEs.

If there was a program that TxDOT could use linking their money to help smaller contractors, it doesn't have to be just DBE, but smaller contractors to get the ability, to get the experience, so they can work, so we don't have to use the same contractors over and over again, to expand that pool. Some of us get the political complaints that you always use the same

ones. I do business with people I know who are not going to screw me and not going to make sure that there's no risk. Your problem is how do you expand the pool? [There should be] some kind of program that segues into the getting more work with TxDOT on a subcontractor or larger level through the smaller maintenance and agency projects.

Many TxDOT contracts are too large for DBEs and other smaller firms to bid on or even to perform as subcontractors.

We worked for TxDOT as a prime, until they bundled all of their maintenance work because we're under their maintenance side. Actually, that's how I bought a half a million dollars for the equipment to do the work for them. And then, in the last three or four years, maybe longer, they bundled everything up, and when they bundled everything up, we stopped working. I did one job, because they bundled it, gave it to a prime, a bigger firm that could bond it and then the smaller contractors, they did away with us, but we had to go through a prime....What they really need to do is unbundle that work the way it used to be, so they hire us primes and then you have the fight. They don't help you get your money. You have to fight that prime to get your money and then finally, he got paid, he did pay us, because we know TxDOT pays. We had to fight. We finally got a check that bounced.

They're not really focusing on putting smaller sized projects that will allow us to bid as a general contractor.

Make the contracts smaller.

They need to kind of break the projects down in to smaller increments to give us the opportunities.

Projects tend to be larger every time. They tend to grow in size. So, their more oriented toward the larger companies rather than the smaller companies.

If they had like a group of districts, like two or three districts that had an I[ndefinite] D[elivery/Indefinite Quantity] opportunity or maybe one district, I think that would be a benefit.

Many DBEs, especially in consulting services, would like to perform as prime contractors. Contract size, and complexity are major impediments to their taking on the leading role.

For industries like us who are in engineering, we're looking to expand and grow. And as we graduate, having an opportunity to win prime or to be, to increase those opportunities to compete and win as a prime consultant is very important to your longevity and to be able to make it past that graduation when you finally outgrow the program.

I don't want to be in the program forever. I want to graduate the program. That's the reason why we're trying so hard to get prime consulting projects.

The problem we have with TxDOT is we are still viewed as that sort of cool, small niche firm, right? We have a hard time getting people to recognize that we've grown, and that we're not the cute little woman-owned firm that we were even five years ago. We've grown in numbers, we've grown in expertise, we've grown geographically. We do work for TxDOT all over the State. But the best luck we've had with TxDOT is being subcontractors to other large firms. We've won a couple of prime contracts, but it's been a real struggle.... They do, either consciously or subconsciously, distinguish between small firms and big firms.

In order for us to grow and to get a real value, we have to become a prime.

[TxDOT would] rather work with a big firm, a glamour firm, a legacy firm like [name]. In other words, the project manager for TxDOT wants to work for [name] as opposed to [the small firm] [inaudible 00:32:38] for that particular project.

For small professional services firms, the ability to add staff in response to specific opportunities was one way to increase their ability to serve as prime consultants on more complex projects.

Let me put the name of the resumes of the people I'm going to use, even though they are not yet my employees and they're going to check them. They're going to verify that when you get the contract signed.

We deal with some of these larger projects that we haven't hired people for if people change. Every time there's a change, you have to get that person pre-approved and that is quite time consuming and can delay the work trying to get those approvals. I understand they want to make sure the people are qualified. But, hopefully, after you've been able to do a project

or two, they can rely on the qualifications of the lead people within the company doing the subcontracted work to find qualified people to do the work

Bonding and financial requirements inhibit small firms' ability to bid TxDOT work.

The biggest problem for us or for minority firms, period, is having that bonding capacity that sometimes TxDOT requires.

You cannot move forward because you cannot get bonded.

TxDOT's prequalification requirements, including that firms submit audited financial statements, were seen as an unnecessary cost that limits competition and small firms' ability to bid for TxDOT work.

If I've got bonding for a million dollars, what's the big issue of me spending an additional \$15,000 that go to a CPA for him to certify my financials when I got a bonding company, that's already went through that process, and is saying "Okay, we're willing to bond you for a million dollars." I don't see the purpose of having to do this, spending an additional \$15-20,000 to go to get certified financials when you already got bonding.

3. Payments

DBEs reported few payment issues on TxDOT contracts. The recently installed Diversity Management System program has helped to increase transparency by providing information about payments by TxDOT to prime contractors.

The Diversity Management program is really good because it tells you the day that the general is paid. And he's got 10 days to pay you. So, you have to confirm that you were paid in a timely manner. If they don't, they get penalized. They didn't used to have it.... So, [payment] started working a little bit better but it's still struggling when you don't get paid on time. Because you live from week to week.

TxDOT itself is good, because they helped me get paid from a construction company, because my staffing and recruiting agency specializes in the construction industry, and I have a problem with getting paid. So, I had to put a mechanic lien out. And then I contacted TxDOT, because it was a TxDOT project, and what they did was make sure that the company- it was a big company- they made sure that company paid me. And they

paid me in full, because before they can get the money that TxDOT pays them, TxDOT made sure that they paid me first.

The DMS system has been very good for us because the prime doesn't get paid until we go in and say that we've been paid.

DMS has really made a big difference, not that there aren't other kinks to work out with DMS.

Some DBE subcontractors reported that while the DMS system has been an improvement, some refinements would ease the burden of compliance. For example, one person suggested that TxDOT use one common number for reporting, because a subcontractor might not have access to the contract or project number.

The DMS system... makes a lot of things easier and I certainly appreciate the fact that now they are trying to ensure that subs are paid on a timely basis, and a lot of states are going to that. However, with that said, there is no consistency as to how a DMS system portrays the contracts information. I will get an email from the DMS system saying I need to go in and confirm payment. I may have a control number. I may have a contract ID... I'm wasting a lot of time trying to dig to figure out what job this is.... it would be helpful if TxDOT could provide as much information and be consistent each time with what, who the contractor is, and the county, the project number, the CSJ. It doesn't hurt to provide all of that, and it will make it much easier for us.

4. Meeting DBE and HUB Contract Goals

Most general contractors and prime consultants reported that they were able to meet DBE contract goals.

Ninety percent of the time we're- it's a relatively simple process. We're able to meet the goals, and the contractors do good work for us. Occasionally, you'll sign somebody up that kind of fails, or is unable to do the job, and at that point, you help them. You try to nurse them and give them support. Whatever it takes to get them through the job.

Our experience too is we don't have too much of a problem getting to the goal up front.

We have a lot of these smaller [engineering] firms that we are taking them under our wings.... I think that also helps us in

having capacity. When we have a lot of work, we need good partners who can help us.... We want to support this program because it's a partnership.

I don't even think we've had a handful of jobs that we haven't met the goal. We don't really have an issue.

We don't have any problems finding DBE subs.

There are several success stories. I remember when the firms, you know, needed a little help up front, or some extra consideration, and they've done really good work, and we use them today. They're one of our first choices when the bids come in, and they're comparable.

The DBE goals have not been overly burdensome the last few years. I think they've done a good job of choosing the projects that lend itself to DBE participation.

We don't do the good faith effort, we're usually able to [meet the goal].

I can't remember a time we didn't make it, except for maybe one time.... I have always had a good working relationship with them. Anytime I have ever needed any kind of help, they have been there to help. My experience has primarily been positive.

We've had new firms come to us and do presentations and we have utilized them, to try them out on contracts, to see how they perform and if they can produce work and do everything that they say. And that's led to successful partnerships.

Say your DBE is a new one you're trying out, and their quality of work is not up to par, well, that's not a reason to be able to dismiss them. You have to accept their work, work with them, and try to get it fixed as best you can, because you don't have an alternative.... It's not a major issue. It's on rare occasions that this happens. I mean, most of the DBEs we use are pretty solid.

We've heard stories of many of the smaller firms getting on too many teams. They get selected on some of these statewide contracts and then they just can't perform the workload. And they try to but it's difficult to perform that workload. So, I think the balancing of the smaller firms to not take on too much at this point in time.

Some general contractors stated that using DBEs increases the cost of TxDOT projects.

It's whatever it takes, and it doesn't matter what the cost is. You make the goal, or you don't get the work.

We'll get a quote price with okay if you use me as a DBE you gotta pay this amount. If you don't use me as a DBE, you can use this amount. Well, sorry you're a DBE, you can't give me two prices.

We've been successful in obtaining the majority of our DBE goals. They're usually 6-8 percent, which is most times very achievable. We have had to utilize the good faith effort on occasion. It's a lot of paperwork, it's a difficult process, but the issue we have (and specifically to El Paso) again, it's related to cost. The volume of work that's going on in El Paso right now is just extraordinary. So, getting a commitment from a DBE, when they're so spread out, you're putting yourself at a huge risk

Many general contractors have difficulty meeting contract goals. One challenge is the reported lack of capacity of DBEs and the small size of the available pool of firms.

[DBEs are] not interested in coming and working on my small project when they can have a much larger subcontract, if they can get a much larger job with [name] that hooks them up for a couple of years. That pool, they're still on the list, but the list isn't adjusted for capacity at any given time. I don't know how you would do that. That's been a real big issue in the metroplex for the DBEs.

Even if the contract is big, we struggle getting [DBEs].

[The] pool is too small. And we're all fighting over the same qualified DBEs.... I don't think anybody has a problem using DBEs. The problem they do have is using firms that are not capable to do the work.

The smaller firms seem to be having a little bit more turnover because they're not able to provide the salaries and benefits, or maybe they just choose not to than maybe the larger firms. So, we've had a couple smaller firms that have not performed well because they keep changing project managers on us, because they lose personnel. And then they're just not meeting deadlines for us.

TxDOT has tailored those goals to the project and the population for the most part. Recently we had some jobs that were up around 5 percent, and if you're not willing to go down the trucking route, that was hard to get.

[Availability] in south Texas is very limited.

TxDOT has tailored those goals to the project and the population for the most part. Recently we had some jobs that were up around 5 percent, and if you're not willing to go down the trucking route, that was hard to get.

The goals continue to go up, and sometimes I think we feel like, where are you looking to get the level of availability, because it's not there. Especially with other projects coming on board.

There's the trucking, and then the other DBE subcontractors, and it's two different sets of problems. It's been our history anyway. We have a pretty good pool of DBE subcontractors that we count on, that are knowledgeable, and they do good work. The problem is, when you get up where the goal's a little higher, we can't do that if we use everybody that's available. It's not like we can bring somebody in, there's no place to live here [in West Texas], and hotels are \$350/night. It just doesn't make sense for a sub who's working successfully somewhere else to come here and struggle.... It's hard for anybody to come out here and be successful, just because it's so expensive to operate here.

The mega projects that we've had have done a great service to the DBE community. They've given a lot of opportunity. At the very same time, it's been devastating to the DBE community because there's been a lot of people who have come in and gotten out of their lane, out of their comfort zone.... As the opportunity grows, you've got to throttle back on DBEs because if you grow too fast, you'll implode.

We're concerned that we're going to lose all our favorite DBEs because they're going to be graduated out of the program.

Some bidders would like assistance from TxDOT in determining whether a particular firm can perform a particular scope of work.

Is there a way, also, in the TUCP or wherever to have more data in there about each company? Like, okay, have you ever had a TxDOT contract? What was the last year you worked for TxDOT? Because there's 4,000-some-odd DBEs in there, and

probably 1,000 of them statewide that actually do the work, and out of those 1,000 there's probably 400 that are construction-related and not professional.

Many prime firms reported that TxDOT does not fully understand their risks in using DBEs. They proposed some risk shifting from the contractor to the Department or increase in the price of the job to address DBE issues.

I understand that's my risk that I accepted when I turned in my bid. But there ought to be some way to make this go easier because now when that guy is late, I'm gonna be graded upon it.

They've never cared a wit about price [when a general contractor must substitute a non-performing DBE].

TxDOT's going to have to implement some kind of risk sharing policy. Right now, if TxDOT says here's your group of DBEs and you use one of those DBEs and they've supposedly been vetted and they had no business doing that work and they go out or they walk off the job, TxDOT goes, "I'm sorry. That's your problem." We're left to bear all that risk. I would be more willing to look at a guy who might be a little bit more marginal if we had the backing of TxDOT, but if he didn't work out, I was going to get some consideration.

I can't progress with the work because this DBE can't perform; I need some help on the schedule; I need additional days or what have you. That's not considered at all. Not only do you have to find another contractor to do the work, you need to find another DBE contractor, so you have to do a good faith effort now. All that takes a significant amount of time. One way TxDOT can help mitigate risk is by giving time considerations.

Evaluating the performance of DBEs and vetting their skills prior to being awarded a subcontract was sought by some general contractors.

If we're going to be graded, and we're gonna be held to use that pool of people that we're given, we need to be able to grade them.

Maybe as part of this comprehensive DBE program, maybe TxDOT does the evaluation of the DBE versus the contractor.

Permitting the prime contractor to finish the work that a DBE is unable to complete was one suggestion to reduce the burden on the primes.

I support the DBE program. There's good ones out there. The problem is they're very limited.... If we could fix one thing, it would be if a DBE is not performing, that the general contractor could go finish his work so we could get the work done on time.

Usually where some of the trouble comes in is as the job goes along TxDOT chooses, or maybe we even initiate sometimes changes in the work, or the way the job goes where some of the stuff gets eliminated, and it happens to be the DBE items, and a lot of times I don't find out that- that's the case until it's really too late to replace with somebody.

Adjusting the contract goal when change orders are needed would help general contractors.

I don't think that they have gone from DBE to DBE to ask, "what is your capacity?" Because there's some that's completely comfortable with doing a million to two million, there's some that will reach a five million level, but until they are able to address it with the individual DBEs and say, "what is your capacity?" I think that would be a driving force in what a realistic goal to the general contractor would be.

We're normally able to come up with a DBE for those DBE goals, whether it be subcontractor or a trucking DBE. We try to steer clear of [trucking] as far as reporting purposes, they're not as easy to keep up with and truckers out west are kind of hit and miss.... That's normally when we fall short, [when TxDOT issues a change order].

Like if they reduce the DBE's work, if it's a guard rail item, and they reduce it, they still want you to meet the goal and you're like, "Well, you cut our work back, not us."

You should be able to use your [race-neutral DBE attainment] DBE to go over to that if you have a short fall.

Some general contractors reported that TxDOT was reasonable when there is a scope change.

The biggest culprit in endangering a specific subcontractor for not meeting a goal, would be a reduction in scope. through the course of the project. Which, typically, gets resolved fairly reasonably, with the local offices.

We have had a couple of contracts where we didn't meet the goal because there was a change or a under run of work, and that was never a problem.

The long delay in adding new NAICS codes to a DBE's certification hampers prime contractor's ability to meet goals and reduces opportunities for DBEs.

One of the things that I'm grateful to TxDOT for doing, is working a little bit more collaboratively with their T[exas] U[nified] C[ertification Program] partners to be able to help with the recertification of DBEs by adding NAICS codes to their profile. My one concern is that I don't see those partners being very proactive and aggressive and doing that. It takes a minimum of 30 to 90 days to enter a NAICS code to a DBE's profile, so we've got DBEs out there that are increasing their capacity, their capability in work that was beyond what they were originally certified to do, and that made a hard time out of those NAICS codes to their profile, and now that we've rolled out DMS and it's mandated that we add that six digit NAICS code whenever we add a DBE, we cannot add that DBE if they don't have that corresponding NAICS code.

Utilizing subcontractors was said to sometimes increase costs because the prime contractor could perform the work at a lower cost using its own forces.

It's costing [TxDOT] more money because the DBEs know the market's tight, they can put more money in the bid, and every bid is more, is going up, because of the lack of availability of DBEs.

Several prime contractors refuse to use trucking dollars to meet contract goals because the paperwork burdens are too great.

If it was easier to use truckers to make the DBE goal, that would increase the participation.... Or the trucking business does not match the model that TxDOT forces on us to report. They don't do hourly payroll. They don't own all their own trucks. We refuse to use a trucker.... What we do instead of using truckers, we do have a pretty good pool of DBE's. If we don't meet our goal, we just tell them to revise their quote, however many dollars we need; and they just get a raise basically. So, nobody wins in that case, TxDOT's paying more money, the DBE wins 'cause they get a raise. That's not the best way to do it, but we'll just call and say, hey, you need to add \$2,000 to your quote or whatever so that we don't have to use a trucker. That's the reality of what we're doing.

We have not signed up a trucker in five years.

We could throw in a whole bunch of dollars, and these goals of trucking firms, if [reporting] was just as simple as the others.

We just don't use truckers.

Trucking is probably one of the most difficult tracking element for a DBE.... [The DBE has] got 20 trucks, but they need to be on three jobs, and we need 50 for our project. So, then you get into the non-DBE brokered trucker and that's where the paperwork just turns into a mess.

This reduces opportunities for DBE truckers.

I've heard a bunch of excuses from these big general contractors that we don't want to get our DBE numbers through trucking, I guess because there's so much involved when it comes to trucking.

Another challenge for prime bidders is the perceived lack of consistency between TxDOT's districts when implementing the DBE program.

There is always a difference between the districts. There can even be a difference between the actual offices.

My beef with TxDOT is nothing is consistent.

[The DBE program is] interpreted several different ways... The Fort Worth district is very different than the Dallas district... Sometimes you can do joint checks, sometimes you can't. Sometimes they interpret you can only count DBE trucks, sometimes they say you can do the DBE one-on-one loop.

Each TxDOT area office has their own system.

I'm going through that exact situation in more than one district right now. It is very frustrating to hear the different interpretations and then you feel like you're in an adversarial role with TxDOT.... Their communication just really needs to get better.... Training, yes, that is a very big issue because there are a lot of new faces.... We all have the prime contractor guide, but I don't know how many people read it. Now I carry it with me all over the place because it's kind of like I have to prove it.

I'm going to talk about two districts, Houston and Dallas.... They operate different.... In Dallas, I got no help. Houston, I get help.

We have a lot of problems with material on hand being dealt with differently from one district.

When you're working in a rural office, you may not be held to the same standard that you are in an urban office.

Several large primes complained that TxDOT's outside program managers are often not well versed in the intricacies of the DBE program, thus increasing the prime contractor's burdens in seeking to meet contract goals.

I'm just dealing with a consultant who's looking at this checklist of things that I can and can't do. And I feel that we're in an adversarial relationship versus we're working on a TxDOT project together. Trying to meet the goals, and often exceeding the goals.

TxDOT is under staffed. Across the board.... A lot of times we get consultants who come in to look at the project and help them administer it.... Sometimes, the stuff they are requesting, are off the charts. Why are you even asking for that? That is not something that is even required. I will have to get a ruling from the area office saying, "look what they are asking for". It is not necessary.... It's not just the Districts. When you throw the consultants in there with it, then it becomes a whole different ball game.

I don't know if a better vetting of the consultants that they're bringing on should be done on their end.... I've seen consultants brought on maybe from a completely different state that don't understand the program.... Hire or consult with knowledgeable people who know what they are doing. If I know more than the consultant, that's a problem.

Indefinite delivery/indefinite quantity or job order contracts present significant issues for meeting goals.

What has started happening in the last, probably, six months is trying to enforce meeting the goal on each specific work authorization, which is difficult to do because the types of projects can vary quite a bit and your sub consultant that's helping you out that's a HUB DBE sub ... maybe the type of work that they give us on that specific work authorization doesn't fit their experience, so we can't use them. But we would still have a commitment ... to meeting the goal overall by the end of the contract.... If the project is a year long, we would have one inspector out there for 9 months out of the year. We would

have to pull that inspector off [and] put a new one on from a HUB DBE firm to finish out that other three months just to get the required percentage in there, which while it meets the goal for that work authorization, it's really detrimental to the project because now you've lost your continuity of staff, where as, the other way we would do it is assign just a project to one of our subs that would meet that requirement. They'd get all of the contract percentage on one work authorization and then we could move on with the others.

It used to be where as long as we met it on the overall contract, then it was okay. But now they seem to be holding us to every work authorization, regardless of the scope. And they're not being very flexible on that. And it just makes no sense whatsoever from that perspective. And it seems to be a blanket order, no matter what discipline, etc., it is. So, that's one of the big issues that we've taken to ACEC to coordinate with up the ladder at TxDOT to try to get changed back to the way they had it, because it's just causing a lot of issues.

I had one contract where I was literally trying to make up scope for another one of my subs that possibly was extending their limits of capabilities, because I was trying to meet a goal.... And it's frustrating districts too, at least the one I'm working with on my contract, that now they're making them do it on every work authorization, regardless of scope.

Majority of the time, we try to involve somebody to meet part of the goal but dividing that type of work between two or three different sub consultants doesn't even make sense from an engineering standpoint. You end up doing something that you can't even do your quality control on it. You take the whole liability as a prime consultant.... If you got to meet your goal and you got to give them something, you're trying to find something for them that's not doing any good to them either because you're not giving them work where they can gain experience from it.... It's holding their hand because you don't want to be that company that didn't meet the goal, because you know the repercussions.

So, are you going to keep throwing money at them and keep trying your best to find ways or work for them? Yes. Because you don't want to not meet the goal, but again, the agency does not take everything into consideration.

Everybody's like, "Okay, meet the goal." Whatever I got to do. Unfortunately throw money at them. Have them make copies.

Now it doesn't matter if on that first one, instead of 24, you have met 50 percent, you're still required to meet 24 on every work order.

If there is some type of flexibility there, that would help.

Many general contractors reported that they do not attempt to submit good faith efforts documentation when they are unable to meet the DBE contract goal at the time of bid submission.

It's not worth [submitting GFE paperwork]. It's 10 times the work. If you can't meet the goal you just don't do it.

Regardless of what you do, it's not going to be accepted.

Some firms had successfully submitted GFEs when they were unable to meet the contractual goal during project performance.

As long as we put that effort into trying to make it work, then they're usually pretty understanding about it.

We always take care of our paperwork, do our due diligence. We try hard not to suspend or fire a DBE, or any subcontractor. It has happened, the process does work if you dot your i's and cross all your t's; it is just more paperwork and more due diligence required, but it's not a bad process.

If we don't meet it, then we have to do the documentation thing. Here's the reason why we didn't meet it. And we've never had any problems with TxDOT saying, "No, you have to go back and find a DBE." We've never had any of that. So, I think that they certainly understand but there's limitations to the program as it is. And then as long as we put that effort into trying to make it work, then they're usually pretty understanding about it.

Some non-DBEs stated that in their opinion, the program discriminates against White males.

Minorities were picked on for ages. But we've now gotten to where we are the minority. We're the minority to Hispanics, and we're the minority to the chain of command of how you get into these contracts.... I was [a local agency's professional service provider] in 1982, and 83 and they said, "You gonna have to get a 20 percent participation of a subcontractor who is

a minority, or don't come back." No minority [professionals] we found, they got some, one of them worked for me. He became very successful because he got an overload of work because of minority, he is now playing golf everyday where he made a couple million dollars and retired.

It's a huge problem when you start selecting people that are already categorized and that's what we have in the HUB program. You've categorized companies that have been around for 30 or 40 years as not qualifying because they're White people. That's just the problem.

Many times, the type of work that a DBE would do is something that I would self-perform, so it's taking work away from me.

A few participants believe that the firms owned by women are mostly "front" companies, where the woman owner is not managing and controlling the firm on a day-to-day basis.

But most of the HUB firms around here are really women engineers, that's the majority of it, and that's fine. But I can't compete with my business because I don't work for a woman owned engineering company.... There are a handful of HUB firms that are good, the rest of them, they give the work to contract, but they do the work themselves. So, they're just writing a check. It's done all the time.... The diversity program as it was set up originally is wonderful.... This program was set up for is to change those things, but nobody's doing that. What they're doing is they're playing games. They're signing over to their wife, they're playing the numbers. And that's the diversity system in the State of Texas.

5. Technical Assistance and Supportive Services

Many DBEs reported that TxDOT needs to provide more technical assistance and supportive services. While the outreach events are well attended and informative, direct support to firms would increase their capabilities.

We got into the [Alliance] program, but then it seems to have fallen through the cracks.

I don't really know that they do a good job of helping the subcontractors knowing how to correctly put together an invoice and making sure that they have all that they need and have all the documents that they need in those invoices. I haven't seen anything that TxDOT's provided that to the

subcontractors and sub-consultants, but I think that would be beneficial.... there's probably some general information that they could provide us to understand what sort of information, what sort of records that they're gonna want to be provided for those invoices.

Several prime contractors agreed.

Could there be some kind of service that could help them get prepared better?

Absolutely [have TxDOT provide training on E-Verify].

There's just a small group anyway that you'll even get a quote from [because of E-Verify].

A true supportive services firm that would go through evaluate and assess what a DBE is able to do [would be helpful].... If there was some kind of pre-qual[ification] assessment, through a knowledgeable consultant who knows what they're talking about to really look at the firm and look what type of work they're doing, and are they capable to handle?... And really make it a small business program not just a DBE program, but a small business program to help assess and give them reality checks. Because there are sometimes you don't need to be bidding on that job.... Explore does a DBE really know what they're bidding on? Do they really understand the work? It's amazing how many of them who bid on this work do not understand the work.... if you're committed to wanting to do this work then these are the steps you're going to need to go through to get yourself able to do the work.

The quality of the assistance that TxDOT has provided was questioned by some prime firms.

Hiring a consultant to come teach a class on how to deal with TxDOT, manage change order and they've never done TxDOT work, is kind of a waste of both people's time and energy. And we've worked it through the years with the Department in trying to help in that area, and that's one of those things where you keep running into the wall and it ain't working.... They need to be retired TxDOT people, somebody that has actually been around it, retired contractors, whatever.... They need to look at a better approach at bringing less experienced subcontractors in, because frankly they're not ready. And when they're not ready, and they love chasing the really big job, being a sub on a

real big job. 'I'm going to land me a big subcontract and I am going to retire after this job's over with.' And they are broke when it's over.

If you bring someone in to talk about insurance, they probably ought to be from the insurance industry.

When the program first got rolled out for the construction contractors, their emphasis was on matchmaking DBEs with primes. So, they spent considerable effort, the consultant did, on figuring out what our subcontracting needs were as a prime contractor, and then bringing us DBEs that they thought would meet those needs based on their capability. In subsequent years, the current consultant, who has the Alliance program contract for this region, is focused on identifying DBEs and what needs they may have. So, they're doing needs assessment of DBEs and they're not really focused on the matchmaking of the DBE with the prime.

I don't think DBEs know that when it comes to bidding and letting, there's a lot of information out there that's helpful to them to get oriented to how to do business with TxDOT. And I think that's probably another topic that supportive services can also handle a little bit more in depth.

TxDOT can help those newly minted DBEs interested in working for TxDOT to educate them on the federal requirements that are on TxDOT contracts,

Another general contractor disagreed and believed that TxDOT does an excellent job of assisting DBEs.

TxDOT, in my opinion, does and has done a remarkable job in providing assistance to DBEs, that has increased tremendously from when I started years ago. But now they do everything as intensive as showing a contractor how to bid, all projects that are being bid are being sent to the contractors. They give them assistance with advertising, setting up webpages, financial assistance, bonding assistance. So, I think TxDOT has done their part in trying to lift up, especially those that are just beginning.

Some firms stated that it is difficult for small shops to take the time to participate in supportive services programs.

Trying to get these folks to come to an educational seminar of some sort is tough. I know personally that there's not a very large percentage of participation, when either TxDOT and/or

AGC have put out the call and tried to assist them.... They don't have the time to go to a seminar or to a day-long session.... In West Texas, just the distances that everybody travels will prohibit any training sessions.

6. Mentor-Protégé Relationships

Many DBEs supported a mentor-protégé program to develop their firms' capacities and business networks.

A mentor protégé program within TxDOT would be useful. Just help us answer questions. This is what TxDOT's looking for. This has been our experience.

[The] mentor-protégé model could really benefit us. Again, it would just be finding that right a company that's not going to try to come into your territory, you're not trying to go into theirs. It's just kind of there to help guide and grow in your respective service areas.

A significant number of prime contractors also supported the mentor-protégé concept.

The mentor protege programs help because the firms can get a better understanding and a true reality check.

We would definitely be interested in a formal program.

Get them to come in here and then I'll work with them and help them set up offices and whatever, so they start, hopefully, coming in and developing and office here so I don't have to bring in people. Let's start developing people here [in El Paso].

Several large firms already provide informal support to DBEs.

We have a lot of these smaller [engineering] firms that we are taking them under our wings.... I think that also helps us in having capacity. When we have a lot of work, we need good partners who can help us.... We want to support this program because it's a partnership.

Most of us probably have proteges in one way or another and it's in our best interest ... the incentive is to have a good performing DBE that doesn't need an advance on their [payroll] every month. And that you could depend on to get the work done.

I'm involved in a lot of mentor protégé. I do that with a lot of my subs, in order to train them to be better contractors, 'cause most of them are all good, as you said earlier, tradesmen or contractors, but they lack the business experience, or working directly with the owners or engineers, and building projects. We're an electrical contractor as well, and I've gone as far as bringing the employees into our group and working almost as our employees, with our team, to train them. And then also, same with ownership. Teach them how to read a financial statement, you know, how to get insurance. You know, do things that's economical. More viable.

Everybody around this table does some type of mentor-protégé. It's just not formal.

We just set up for our own people and all our subs just training classes [for design-build projects]. This is what you need to watch out for on this job. You come in, our foremen internally and externally make all of our subs go through those. We record them so a sub comes in six months later, set down, you gotta take this class, you know, so you get up to speed on how quality is handled, how environmental protection, all these other things are done on the project, because it is more onerous.

We worked with [a DBE] to get bonding. So, we've helped them get established and our office between three individuals spent over twenty hours to process one of their payments.

[Our firm] basically had a guy live in their office to help them with paperwork.

We actually helped put some DBE truckers into business. And without the mentor protégé or anything like that, we just basically helped them with the [DBE certification] paperwork so they could get that.

We just put resources into the actual firms to help them and we weren't eroding the CUF at the same time.

A few prime firms cautioned that without a formal program, a general contractor could run afoul of the DBE program requirements that a DBE remain independent and perform a commercially useful function.

How do I keep hands off of my DBE subcontractor, and at the same time be a mentor to them? 'Cause I'm not allowed to help financially, not allowed to help with equipment needs, or

employee needs, it's a hands-off approach. I guess I can talk to them about financial strategies, bidding strategies, I guess that is what you'd do in a mentor-protégé program. But it's kind of a catch 22, because as a contractor ... I've gotta be real careful with what I say.

We, as a contractor, cannot touch the DBE subcontractor. We can't help them in any kind of fashion. These folks sometimes they may need the help because they are small business. A lot of them are mom and pop operations, or a family operation. They want to grow, they want to excel but multiple factors keep them from truly excelling, because we as the GC, cannot assist them.

There's some good DBEs out there that I wouldn't have a problem trying to help them grow their business. But the way I understand it, we're so limited on what we can and can't do with them.... I can't even loan the guy one of my loaders to go help him when he's broke down.

Some incentive or credit from TxDOT for assisting DBEs was one approach to supporting the overall objectives of the DBE program.

I think they're good. I think it's a good way to teach people, get into relationships with. And I think there should be a form of credit given for those that do participate in them and their goals, because it works for me.

[A] mentorship protégé reimbursement ... people will take advantage of it.

D. Conclusion

TxDOT implements a program that complies with the DBE program regulations and the State's HUB statute. Overall, the programs succeed in leveling the playing field for highway work and prime contractors were generally able to comply with diversity requirements. However, as discussed in the business owner and stakeholder interviews, there are concerns to address, including accessing timely information about TxDOT opportunities; reducing contract size and complexity; difficulty in subcontractors moving into the role of prime vendors; mitigating the risks in using small and new firms; reducing obstacles to using DBE truckers; ensuring consistency in program interpretation and administration between TxDOT's districts and from project to project; the provision of additional technical assistance; and developing new initiatives to support the development and success of DBEs and HUBs.

IV. UTILIZATION AND AVAILABILITY ANALYSES FOR THE TEXAS DEPARTMENT OF TRANSPORTATION

A. Contract Data Sources

We analyzed contract data for the years 2012 through 2016 for the Texas Department of Transportation (“TxDOT”)’s contracts funded with monies from three sources: the Federal Highway Administration (“FHWA”), the Federal Aviation Administration (“FAA”), and the State of Texas. We received an Original Contract Data File from the Department that contained 19,066 contracts, worth \$29,902,929,343 across all funding sources.

Because of this large volume of contracts, we created a sample file for our analysis using the contracts with the largest dollar values. The sample contained 801 contracts, with an award amount of \$13,267,616,384. We then gathered the data necessary to construct all the needed fields for our analysis where they were missing in TxDOT’s contract records (*e.g.*, industry type; zip codes; NAICS codes of prime contractors and subcontractors; non-DBE subcontractor information, including payments, race, gender; etc.). Below are the data for the resulting Final Contract Data Files for each funding source:

- FHWA funded contracts:
 1. 396 contracts; total award amount of \$9,582,519,586, representing 281 contracts to prime contractors.
 2. 2,716 associated subcontracts, totaling \$3,858,102,875.
- FAA funded contracts:
 1. 76 contracts; total award amount of \$162,190,832, representing 44 contracts to prime contractors.
 2. 381 associated subcontracts, totaling \$41,861,752.
- State funded contracts:
 1. 329 contracts; total award amount of \$3,522,095,966, representing 239 contracts to prime contractors;

2. 1,936 associated subcontracts, totaling \$1,275,005,341.

The Final Contract Data Files were used to determine the geographic and product markets for the analyses, to estimate the utilization of DBEs on those contracts, and to calculate the DBE availability in TxDOT's marketplace.

B. Summary of Findings

As described fully below, for each of the three funding sources, we generated a Final Contract Data File; a Final Utilization Data File; and Final Availability Data File. The first two files were used to determine TxDOT's utilization of DBEs in its geographic and product markets. The third file yielded the set of firms which could have been available to be utilized by the Department. These analyses yielded the following results:

- FHWA funded contracts:
 1. The utilization of DBEs was 8.9 percent
 2. DBE unweighted availability was 13.9 percent; and the
 3. DBE weighted availability was 28.1 percent.
- FAA funded contracts:
 1. The utilization of DBEs was 13.6 percent;
 2. DBE unweighted availability was 14.0 percent; and the
 3. DBE weighted availability was 27.4 percent.
- State funded contracts:
 1. The utilization of HUBs was 14.9 percent;
 2. DBE unweighted availability was 14.9 percent; and the
 3. HUB weighted availability was 24.8 percent.

The following sections present tables containing the data used to derive these results. To assist the Department with meeting its obligations for goal submission under 49 C.F.R. Part 26, which requires separate analyses to FHWA and FTA, we present our findings disaggregated by funding source.

C. The Texas Department of Transportation's Federal Highway Administration Funded Contracts

1. TxDOT's Product and Geographic Markets for FHWA Funded Contracts

A defensible disparity study must determine empirically which industries comprise the agency's product or industry market. This is also a requirement under the DBE program regulations Official Guidance.¹⁶¹ The accepted approach is to analyze those detailed industries, as defined by 6-digit North American Industry Classification System ("NAICS") codes¹⁶² that make up at least 75 percent of the prime contract and subcontract payments for the study period.¹⁶³ However, for this study, we went further, and applied a "90/90/90" rule, whereby we analyzed NAICS codes that cover over 90 percent of the total contract dollars, disaggregated by funding source; over 90 percent of the prime contract dollars; and over 90 percent of the subcontract dollars. We took this approach to assure a comprehensive analysis of TxDOT's activities.

a. TxDOT's Unconstrained Product Market for FHWA Funded Contracts

Tables 4.1 through 4.3 present the NAICS codes used to define the product market for TxDOT's FHWA contracts. These contracts were disaggregated by level of contract (*i.e.*, was the firm receiving the contract as a prime vendor or a subcontractor), the label for each NAICS code, and the industry percentage distribution of the number of contracts and spending across NAICS codes. The following tables present the Department's *unconstrained* product market, which was later constrained by the geographic market area, discussed below.

161. https://www.transportation.gov/sites/dot.gov/files/docs/Tips_for_Goal-Setting_in_DBE_Program_20141106.pdf; see also 49 C.F.R § 26.45.

162. www.census.gov/eos/www/naics.

163. National Academies of Sciences, Engineering, and Medicine 2010, *Guidelines for Conducting a Disparity and Availability Study for the Federal DBE Program*. Washington, DC: The National Academies Press. <https://doi.org/10.17226/14346>, pp. 50-51. ("*National Disparity Study Guidelines*").

**Table 4-1: Industry Percentage Distribution of Contracts by Dollars Paid
for FHWA Funded Contracts**

NAICS Code	NAICS Code Description	Pct. Total Contract Dollars	Cumulative Pct. Total Contract Dollars
237310	Highway, Street, and Bridge Construction	60.64%	60.64%
541330	Engineering Services	15.56%	76.20%
238210	Electrical Contractors and Other Wiring Installation Contractors	2.56%	78.76%
488490	Other Support Activities for Road Transportation	2.04%	80.80%
238910	Site Preparation Contractors	1.80%	82.60%
238120	Structural Steel and Precast Concrete Contractors	1.58%	84.18%
238990	All Other Specialty Trade Contractors	1.50%	85.69%
541310	Architectural Services	1.33%	87.02%
484220	Specialized Freight (except Used Goods) Trucking, Local	1.32%	88.33%
541420	Industrial Design Services	1.29%	89.63%
561730	Landscaping Services	1.14%	90.77%
Total			100.0%^a

a. Agency spending across another 156 NAICS codes comprised 9.23 percent of all spending. The entire list of NAICS codes is contained in Appendix D.

Source: CHA analysis of TxDOT data.

**Table 4-2: Industry Percentage Distribution of Contracts by Dollars Paid
for FHWA Funded Contracts, Prime Contracts**

NAICS Code	NAICS Code Description	Pct. Total Contract Dollars	Cumulative Pct. Total Contract Dollars
237310	Highway, Street, and Bridge Construction	87.37%	87.37%
541330	Engineering Services	3.39%	90.76%
488490	Other Support Activities for Road Transportation	3.17%	93.93%
238990	All Other Specialty Trade Contractors	1.72%	95.65%

NAICS Code	NAICS Code Description	Pct. Total Contract Dollars	Cumulative Pct. Total Contract Dollars
561730	Landscaping Services	1.44%	97.09%
237110	Water and Sewer Line and Related Structures Construction	1.17%	98.26%
Total			100.0%^a

a. Agency spending across another 7 NAICS codes comprised 1.74 percent of all spending. The entire list of NAICS codes is contained in Appendix D.

Source: CHA analysis of TxDOT data

Table 4-3: Industry Percentage Distribution of Contracts by Dollars Paid for FHWA Funded Contracts, Subcontracts

NAICS Code	NAICS Code Description	Pct. Total Contract Dollars	Cumulative Pct. Total Contract Dollars
541330	Engineering Services	33.62%	33.62%
237310	Highway, Street, and Bridge Construction	20.98%	54.59%
238210	Electrical Contractors and Other Wiring Installation Contractors	6.36%	60.95%
238910	Site Preparation Contractors	4.48%	65.44%
238120	Structural Steel and Precast Concrete Contractors	3.92%	69.36%
541310	Architectural Services	3.31%	72.67%
484220	Specialized Freight (except Used Goods) Trucking, Local	3.27%	75.93%
541420	Industrial Design Services	3.21%	79.14%
238220	Plumbing, Heating, and Air-Conditioning Contractors	1.53%	80.67%
238990	All Other Specialty Trade Contractors	1.18%	81.85%
236210	Industrial Building Construction	1.17%	83.03%
237990	Other Heavy and Civil Engineering Construction	1.15%	84.18%
212321	Construction Sand and Gravel Mining	1.04%	85.22%
541219	Other Accounting Services	1.03%	86.25%

NAICS Code	NAICS Code Description	Pct. Total Contract Dollars	Cumulative Pct. Total Contract Dollars
541380	Testing Laboratories	1.00%	87.24%
541620	Environmental Consulting Services	0.99%	88.24%
Total			100.0%^a

a. Agency spending across another 148 NAICS codes comprised 11.74 percent of all spending. The entire list of NAICS codes is contained in Appendix D.

Source: CHA analysis of TxDOT data

b. TxDOT’s Geographic Market for FHWA Funded Contracts

The courts and the DBE program regulations¹⁶⁴ require that the analysis be limited to TxDOT’s geographic market area.¹⁶⁵ While it may turn out that the State of Texas comprises TxDOT’s geographic market area, this element of the analysis must be empirically established.¹⁶⁶

To determine the relevant geographic market area, we applied the standard of identifying the firm locations that account for at least 75 percent of contract and subcontract dollar payments in the contract data file.¹⁶⁷ Location was determined by ZIP code and aggregated into counties as the geographic unit.

Spending in the State of Texas accounted for 96.7 percent of all contract dollars paid in TxDOT’s unconstrained product market for FHWA funded contracts.¹⁶⁸ Therefore, the State of Texas constituted the geographic market area from which we drew our availability data for FHWA funded contracts.

2. TxDOT’s Utilization of DBEs on FHWA Funded Contracts

Having determined TxDOT’s product and geographic market areas for FHWA funded contracts, the next essential step was to determine the dollar value of

164. https://www.transportation.gov/sites/dot.gov/files/docs/Tips_for_Goal-Setting_in_DBE_Program_20141106.pdf; see also 49 C.F.R §26.45.

165. *City of Richmond v. J.A. Croson Co.*, 488 U.S. 469, 508 (1989) (Richmond was specifically faulted for including minority contractors from across the country in its program based on the national evidence that supported the USDOT DBE program).

166. *Concrete Works of Colorado, Inc. v. City and County of Denver*, 36 F.3d 1513, 1520 (10th Cir. 1994) (to confine data to strict geographic boundaries would ignore “economic reality”).

167. *National Disparity Study Guidelines*, p. 49.

168. The entire list of states is contained in Appendix D.

TxDOT’s utilization of DBEs as measured by payments to prime firms and sub-contractors and disaggregated by race and gender. The Department and its subrecipients did not collect data for most non-DBE subcontractors, as well as other records critical for the study. As a result, we had to obtain missing data from prime vendors, a lengthy process, as well as reconstruct other missing contract records, including researching the race and gender ownership of sub-contractors and assigning NAICS codes to those firms.

The following Tables present data on the total contract dollars paid by TxDOT for each NAICS code in the product market constrained by geography and the share that those contract dollars comprise of all industries. It is important to note that the contract dollar shares are equivalent to the weight of spending in each NAICS code. These weights were used to transform data from unweighted availability to weighted availability and is discussed below.

Tables 4.4 through 4.6 present TxDOT’s utilization by contract dollars paid for FHWA funded contracts.

Table 4-4: NAICS Code Distribution of FHWA Funded Contract Dollars

NAICS Code	NAICS Code Description	Total Contract Dollars	Pct. Total Contract Dollars
237310	Highway, Street, and Bridge Construction	\$5,735,819,264.00	65.0%
541330	Engineering Services	\$1,466,111,872.00	16.6%
238210	Electrical Contractors and Other Wiring Installation Contractors	\$245,144,960.00	2.8%
488490	Other Support Activities for Road Transportation	\$195,651,840.00	2.2%
238910	Site Preparation Contractors	\$152,116,384.00	1.7%
238120	Structural Steel and Precast Concrete Contractors	\$147,225,328.00	1.7%
238990	All Other Specialty Trade Contractors	\$143,463,008.00	1.6%
484220	Specialized Freight (except Used Goods) Trucking, Local	\$124,418,592.00	1.4%
541420	Industrial Design Services	\$123,880,072.00	1.4%
561730	Landscaping Services	\$100,109,528.00	1.1%
237110	Water and Sewer Line and Related Structures Construction	\$93,540,056.00	1.1%
237990	Other Heavy and Civil Engineering Construction	\$56,219,800.00	0.6%

NAICS Code	NAICS Code Description	Total Contract Dollars	Pct. Total Contract Dollars
541620	Environmental Consulting Services	\$51,340,872.00	0.6%
238220	Plumbing, Heating, and Air-Conditioning Contractors	\$48,060,020.00	0.5%
236210	Industrial Building Construction	\$45,271,772.00	0.5%
212321	Construction Sand and Gravel Mining	\$40,079,828.00	0.5%
541380	Testing Laboratories	\$38,456,804.00	0.4%
541310	Architectural Services	\$11,520,141.00	0.1%
541219	Other Accounting Services	\$2,291.08	0.0%
Total		\$8,818,432,432.08	100.0%

Source: CHA analysis of TxDOT data.

**Table 4-5: Distribution of FHWA Funded Contract Dollars by Race and Gender
(total dollars)**

NAICS Code	Black	Hispanic	Asian	Native American	White Women	DBE	Non-DBE	Total
212321	\$0	\$0	\$0	\$0	\$0	\$0	\$40,079,828	\$40,079,828
236210	\$0	\$2,679,384	\$3,529,328	\$16,325,290	\$545,821	\$23,079,823	\$22,191,948	\$45,271,771
237110	\$0	\$3,864,139	\$0	\$0	\$5,996,840	\$9,860,979	\$83,679,074	\$93,540,053
237310	33,760,500	62,626,992	3,056,542	856,566	105,427,422	205,728,022	5,530,091,216	5,735,819,238
237990	\$0	\$9,399,355	\$0	\$0	\$1,687,669	\$11,087,024	\$45,132,775	\$56,219,799
238120	\$132,823	\$13,934,259	\$68,147,217	\$13,280,294	\$1,896,739	\$97,391,332	\$49,834,005	\$147,225,337
238210	\$0	\$9,605,948	\$6,581	\$0	\$12,968,783	\$22,581,312	\$222,563,655	\$245,144,967
238220	\$260,875	\$6,219,779	\$0	\$0	\$23,705,289	\$30,185,943	\$17,874,076	\$48,060,019

NAICS Code	Black	Hispanic	Asian	Native American	White Women	DBE	Non-DBE	Total
238910	\$1,790,890	\$8,875,859	\$17,462,058	\$3,884,637	\$22,301,752	\$54,315,196	\$97,801,186	\$152,116,382
238990	\$0	\$1,299,285	\$0	\$51,156	\$9,538,919	\$10,889,360	\$132,573,651	\$143,463,011
484220	\$942,110	\$58,318,509	\$0	\$120,875	\$12,591,849	\$71,973,343	\$52,445,249	\$124,418,592
488490	\$0	\$14,032,043	\$0	\$0	\$0	\$14,032,043	\$181,619,805	\$195,651,848
541219	\$0	\$0	\$0	\$0	\$0	\$0	\$2,291	\$2,291
541310	\$0	\$0	\$77,244	\$0	\$2,224,194	\$2,301,438	\$9,218,703	\$11,520,141
541330	\$8,461,263	\$37,591,373	\$10,139,282	\$1,324,813	\$121,370,586	\$178,887,317	\$1,287,224,524	\$1,466,111,841
541380	\$1,256,581	\$27,494,165	\$1,455,758	\$0	\$0	\$30,206,504	\$8,250,301	\$38,456,805
541420	\$41,664	\$0	\$0	\$0	\$0	\$41,664	\$123,838,405	\$123,880,069
541620	\$0	\$2,829,450	\$146,820	\$0	\$6,887,250	\$9,863,520	\$41,477,351	\$51,340,871
561730	\$235,628	\$958,302	\$105,181	\$0	\$11,380,284	\$12,679,395	\$87,430,131	\$100,109,526
Total	\$46,882,334	\$259,728,842	\$104,126,011	\$35,843,631	\$338,523,397	\$785,104,215	\$8,033,328,174	\$8,818,432,389

Source: CHA analysis of TxDOT data.

**Table 4-6: Distribution of FHWA Funded Contract Dollars by Race and Gender
(share of total dollars)**

NAICS Code	Black	Hispanic	Asian	Native American	White Women	DBE	Non-DBE	Total
212321	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	100.0%	100.0%
236210	0.0%	5.9%	7.8%	36.1%	1.2%	51.0%	49.0%	100.0%
237110	0.0%	4.1%	0.0%	0.0%	6.4%	10.5%	89.5%	100.0%
237310	0.6%	1.1%	0.1%	0.0%	1.8%	3.6%	96.4%	100.0%
237990	0.0%	16.7%	0.0%	0.0%	3.0%	19.7%	80.3%	100.0%
238120	0.1%	9.5%	46.3%	9.0%	1.3%	66.2%	33.8%	100.0%

NAICS Code	Black	Hispanic	Asian	Native American	White Women	DBE	Non-DBE	Total
238210	0.0%	3.9%	0.0%	0.0%	5.3%	9.2%	90.8%	100.0%
238220	0.5%	12.9%	0.0%	0.0%	49.3%	62.8%	37.2%	100.0%
238910	1.2%	5.8%	11.5%	2.6%	14.7%	35.7%	64.3%	100.0%
238990	0.0%	0.9%	0.0%	0.0%	6.6%	7.6%	92.4%	100.0%
484220	0.8%	46.9%	0.0%	0.1%	10.1%	57.8%	42.2%	100.0%
488490	0.0%	7.2%	0.0%	0.0%	0.0%	7.2%	92.8%	100.0%
541219	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	100.0%	100.0%
541310	0.0%	0.0%	0.7%	0.0%	19.3%	20.0%	80.0%	100.0%
541330	0.6%	2.6%	0.7%	0.1%	8.3%	12.2%	87.8%	100.0%
541380	3.3%	71.5%	3.8%	0.0%	0.0%	78.5%	21.5%	100.0%
541420	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	100.0%	100.0%
541620	0.0%	5.5%	0.3%	0.0%	13.4%	19.2%	80.8%	100.0%
561730	0.2%	1.0%	0.1%	0.0%	11.4%	12.7%	87.3%	100.0%
Total	0.5%	2.9%	1.2%	0.4%	3.8%	8.9%	91.1%	100.0%

Source: CHA analysis of TxDOT data.

3. Availability of DBEs in TxDOT’s Markets for FHWA Funded Contracts

a. Methodological Framework

Estimates of the availability of disadvantaged, minority- and women-owned firms (collectively, DBEs) in TxDOT’s market area are a critical component of the analysis of possible barriers to equal opportunities to participate in the agency’s contracting activities. These availability estimates are compared to the utilization percentage of dollars received by DBEs to examine whether minority- and women-owned firms achieve parity.¹⁶⁹ Availability estimates are also crucial for TxDOT to set narrowly tailored annual and contract goals on its federally funded contracts.

169. For our analysis, the term “DBE” includes firms that are certified by government agencies and minority- and women-owned firms that are not certified. As discussed in Chapter II, the inclusion of all minority- and women-owned businesses in the pool casts the broad net approved by the courts and recommend by the USDOT that supports the remedial nature of the programs. See *Northern Contracting, Inc. v. Illinois Department of Transportation*, 473 F.3d 715, 723 (7th Cir. 2007) (The “remedial nature of the federal scheme militates in favor of a method of DBE availability calculation that casts a broader net.”). https://www.transportation.gov/sites/dot.gov/files/docs/Tips_for_Goal-Setting_in_DBE_Program_20141106.pdf.

We applied the “custom census” approach with refinements to estimating availability. As recognized by the courts and the National Model Disparity Study Guidelines,¹⁷⁰ this methodology in general is superior to the other methods for at least four reasons.

First, it provides an internally consistent and rigorous “apples to apples” comparison between firms in the availability numerator and those in the denominator. Other approaches often have different definitions for the firms in the numerator (*e.g.*, certified DBEs) and the denominator (*e.g.*, registered vendors or the Census Bureau’s County Business Patterns data).

Next, by examining a comprehensive group of firms, it “casts a broader net” beyond those known to the agency. As recognized by the courts, this comports with the remedial nature of contracting affirmative action programs by seeking to bring in businesses that have historically been excluded. Our methodology is less likely to be tainted by the effects of past and present discrimination than other methods, such as bidders lists, because it seeks out firms in the agency’s market areas that have not been able to access its opportunities. Whittling down availability estimates using surveys with response biases and very small sample sizes may likewise import issues that have caused firms not to seek, or to be unsuccessful in seeking, work from the agency.

Third, this approach is less impacted by variables affected by discrimination. Factors such as firm age, size, qualifications, and experience are all elements of business success where discrimination would be manifested. Most courts have held that the results of discrimination – which impact factors affecting capacity – should not be the benchmark for a program designed to ameliorate the effects of discrimination. They have acknowledged that minority- and women-owned firms may be smaller, newer, and otherwise less competitive than non-DBEs because of the very discrimination sought to be remedied by race-conscious contracting programs. Racial and gender differences in these “capacity” factors are the *outcomes* of discrimination and it is therefore inappropriate as a matter of economics and statistics to use them as “control” variables in a disparity study.¹⁷¹

Fourth, it has been upheld by every court that has reviewed it, including most recently in the successful defense of the Illinois State Toll Highway’s DBE program, for which we served as testifying experts.¹⁷²

170. National Disparity Study Guidelines, pp.57-58.

171. For a detailed discussion of the role of capacity in disparity studies, see the National Disparity Study Guidelines, Appendix B, “Understanding Capacity.”

172. *Midwest Fence Corp. v. US Department of Transportation, Illinois Department of Transportation, Illinois State Toll Highway Authority*, 840 F.3d 932 (7th Cir. 2016); see also *Northern Contracting, Inc. v. Illinois Department of Transportation*, 473 F.3d 715 (7th Cir. 2007), *cert. denied*, 15-1827, June 26, 2017.

Therefore, to estimate the availability of DBEs as a percentage of all firms for this study, CHA utilized three databases:

1. The TxDOT Final Contract Data Files (described in Section A of this Chapter).
2. A Master DBE Directory compiled by CHA.
3. Dun & Bradstreet/Hoovers Database downloaded from the companies' website.

The Master DBE Directory combined the results of an exhaustive search for directories and other lists containing information about minority- and women-owned businesses. The resulting list of minority- and women-owned businesses is comprehensive.

We took the following steps to develop the Dun & Bradstreet/Hoovers Database. After compiling the Master DBE Directory, we limited the firms that we used in this analysis to those firms operating within TxDOT's constrained product market. We purchased the firm information from Hoovers for the firms in the NAICS codes located in the Department's market area in order to form the Dun & Bradstreet/Hoovers Database. Hoovers, a Dun & Bradstreet company, maintains a comprehensive, extensive and regularly updated listing of all firms conducting business. The database includes a vast amount of information on each firm, including location and detailed industry codes, and is the broadest publicly available data source for firm information. In the initial download, the data from Hoovers simply identify a firm as being minority-owned.¹⁷³ However, the company does collect detailed information on ethnicity (*i.e.*, is the minority firm owner Black, Hispanic, Asian, or Native American). We obtained this additional information from Hoovers.

We merged these three databases to form an accurate estimate of firm availability for TxDOT contracts and associated subcontracts. The following tables present data on:

- The *unweighted* availability by race and gender and by NAICS codes in TxDOT's constrained product markets;
- The weights used to adjust the unweighted numbers¹⁷⁴; and
- The final estimates of the weighted averages of the individual 6-digit level availability estimates in TxDOT's market areas.

173. The variable is labeled: "Is Minority Owned" and values for the variable are either "yes" or "no".

174. These weights are equivalent to the share of contract dollars presented in the previous section.

b. Estimation of DBE Availability in TxDOT's Markets for FHWA Funded Contracts

Table 4-7: Unweighted Availability for FHWA Funded Contracts

NAICS Code	Black	Hispanic	Asian	Native American	White Women	DBE	Non-DBE	Total
212321	0.15%	2.09%	0.12%	0.13%	3.43%	5.92%	94.08%	100.00%
236210	4.32%	9.56%	1.28%	0.91%	9.76%	25.83%	74.17%	100.00%
237110	1.78%	7.03%	0.43%	0.18%	6.83%	16.25%	83.75%	100.00%
237310	5.91%	15.51%	1.25%	0.71%	9.16%	32.54%	67.46%	100.00%
237990	1.92%	8.49%	0.49%	0.11%	6.05%	17.05%	82.95%	100.00%
238120	4.23%	17.46%	2.11%	1.43%	9.91%	35.14%	64.86%	100.00%
238210	0.98%	5.58%	0.27%	0.19%	5.27%	12.29%	87.71%	100.00%
238220	0.55%	3.12%	0.07%	0.10%	3.45%	7.29%	92.71%	100.00%
238910	3.89%	10.10%	0.60%	0.47%	8.33%	23.39%	76.61%	100.00%
238990	0.90%	3.66%	0.19%	0.13%	4.59%	9.46%	90.54%	100.00%
484220	7.46%	22.85%	0.27%	0.64%	9.58%	40.80%	59.20%	100.00%
488490	2.52%	3.98%	0.04%	0.21%	4.65%	11.40%	88.60%	100.00%
541219	1.00%	1.42%	0.12%	0.48%	12.72%	15.74%	84.26%	100.00%
541310	2.17%	5.22%	0.90%	1.65%	9.04%	18.98%	81.02%	100.00%
541330	2.91%	6.96%	1.94%	2.03%	7.05%	20.89%	79.11%	100.00%
541380	1.83%	4.17%	1.81%	1.06%	7.69%	16.56%	83.44%	100.00%
541420	2.36%	1.84%	0.64%	0.72%	20.56%	26.11%	73.89%	100.00%
541620	2.61%	4.46%	1.11%	1.28%	13.24%	22.70%	77.30%	100.00%
561730	1.06%	2.27%	0.11%	0.14%	4.33%	7.91%	92.09%	100.00%
Total	1.66%	5.12%	0.53%	0.53%	6.09%	13.93%	86.07%	100.00%

Source: CHA analysis of TxDOT data; Hoovers; CHA Master Directory.

These unweighted availability estimates can be used by TxDOT to set its triennial DBE goal and DBE contract goals for FHWA funded projects.

Below are the steps to determine the unweighted availability estimates weighted by the share of TxDOT's spending by NAICS codes.

**Table 4-8: Share of TxDOT Spending on FHWA Funded Contracts
by NAICS Code**

NAICS Code	NAICS Code Description	Weight (Pct. Share of Total Sector Dollars)
212321	Construction Sand and Gravel Mining	0.5%
236210	Industrial Building Construction	0.5%
237110	Water and Sewer Line and Related Structures Construction	1.1%
237310	Highway, Street, and Bridge Construction	65.0%
237990	Other Heavy and Civil Engineering Construction	0.6%
238120	Structural Steel and Precast Concrete Contractors	1.7%
238210	Electrical Contractors and Other Wiring Installation Contractors	2.8%
238220	Plumbing, Heating, and Air-Conditioning Contractors	0.5%
238910	Site Preparation Contractors	1.7%
238990	All Other Specialty Trade Contractors	1.6%
484220	Specialized Freight (except Used Goods) Trucking, Local	1.4%
488490	Other Support Activities for Road Transportation	2.2%
541219	Other Accounting Services	0.0%
541310	Architectural Services	0.1%
541330	Engineering Services	16.6%
541380	Testing Laboratories	0.4%
541420	Industrial Design Services	1.4%
541620	Environmental Consulting Services	0.6%
561730	Landscaping Services	1.1%
Total		100.0%

Source: CHA analysis of TxDOT data.

**Table 4-9: Aggregated Weighted Availability for FHWA Funded Contracts
(total dollars)**

	Black	Hispanic	Asian	Native American	White Women	DBE	Non-DBE	Total
Total	4.8%	12.6%	1.2%	0.9%	8.6%	28.1%	71.9%	100.0%

Source: CHA analysis of TxDOT data; Hoovers; CHA Master Directory.

D. TxDOT's FAA Funded Contracts

Our analysis of TxDOT's FAA funded contracts applied the same concepts and analyses that were used for analyzing FHWA funded contracts. Hence, we provide the appropriate tables with minimal accompanying text.

1. TxDOT's Product and Geographic Markets for FAA Funded Contracts

a. TxDOT's Unconstrained Product Market for FAA Funded Contracts

Tables 4.10 through 4.12 present the NAICS codes used to define the product market for TxDOT's FAA funded contracts and present the Department's *unconstrained* product market for FAA funded contracts.

Table 4-10: Industry Percentage Distribution of Contracts by Dollars Paid for FAA Funded Contracts

NAICS Code	NAICS Code Description	Pct. Total Contract Dollars	Cumulative Pct. Total Contract Dollars
237310	Highway, Street, and Bridge Construction	67.91%	67.91%
238210	Electrical Contractors and Other Wiring Installation Contractors	7.5803%	75.49%
236220	Commercial and Institutional Building Construction	5.5781%	81.07%
238990	All Other Specialty Trade Contractors	3.3301%	84.40%
541330	Engineering Services	2.6148%	87.02%
238910	Site Preparation Contractors	2.1558%	89.17%
238110	Poured Concrete Foundation and Structure Contractors	1.2048%	90.38%
238220	Plumbing, Heating, and Air-Conditioning Contractors	1.0930%	91.47%
Total			100.0%^a

a. Agency spending across another 67 NAICS codes comprised 8.53 percent of all spending. The entire list of NAICS codes is contained in Appendix D.

Source: CHA analysis of TxDOT data.

**Table 4-11: Industry Percentage Distribution of Contracts by Dollars Paid
for FAA Funded Contracts, Prime Contracts**

NAICS Code	NAICS Code Description	Pct. Total Contract Dollars	Cumulative Pct. Total Contract Dollars
237310	Highway, Street, and Bridge Construction	81.71%	81.71%
236220	Commercial and Institutional Building Construction	7.36%	89.07%
238210	Electrical Contractors and Other Wiring Installation Contractors	3.83%	92.90%
238990	All Other Specialty Trade Contractors	3.59%	96.50%
541330	Engineering Services	1.88%	98.38%
Total			100.0%^a

a. Agency spending across another 2 NAICS codes comprised 1.62 percent of all spending. The entire list of NAICS codes is contained in Appendix D.

Source: CHA analysis of TxDOT data

**Table 4-12: Industry Percentage Distribution of Contracts by Dollars Paid
for FAA Funded Contracts, Subcontracts**

NAICS Code	NAICS Code Description	Pct. Total Contract Dollars	Cumulative Pct. Total Contract Dollars
237310	Highway, Street, and Bridge Construction	28.26%	28.26%
238210	Electrical Contractors and Other Wiring Installation Contractors	18.35%	46.61%
238910	Site Preparation Contractors	8.35%	54.96%
541330	Engineering Services	4.72%	59.68%
238110	Poured Concrete Foundation and Structure Contractors	4.67%	64.35%
238220	Plumbing, Heating, and Air-Conditioning Contractors	4.23%	68.58%
238390	Other Building Finishing Contractors	3.29%	71.87%
237110	Water and Sewer Line and Related Structures Construction	2.97%	74.85%
423510	Metal Service Centers and Other Metal Merchant Wholesalers	2.76%	77.61%
484220	Specialized Freight (except Used Goods) Trucking, Local	2.75%	80.36%
238990	All Other Specialty Trade Contractors	2.57%	82.93%

NAICS Code	NAICS Code Description	Pct. Total Contract Dollars	Cumulative Pct. Total Contract Dollars
238120	Structural Steel and Precast Concrete Contractors	1.79%	84.73%
423310	Lumber, Plywood, Millwork, and Wood Panel Merchant Wholesalers	1.63%	86.35%
238310	Drywall and Insulation Contractors	1.11%	87.47%
237120	Oil and Gas Pipeline and Related Structures Construction	1.05%	88.51%
Total			100.0%^a

a. Agency spending across another 67 NAICS codes comprised 11.49 percent of all spending. The entire list of NAICS codes is contained in Appendix D.

Source: CHA analysis of TxDOT data

b. TxDOT’s Geographic Market for FAA Funded Contracts

Spending in the State of Texas accounted for 95.7 percent of all contract dollars paid in TxDOT’s unconstrained product market for FAA funded contracts.¹⁷⁵ Therefore, the State of Texas constituted the geographic market area from which we drew our availability data for FAA funded contracts.

2. TxDOT’s Utilization of DBEs on FAA Funded Contracts

Tables 4.13 through 4.15 present TxDOT’s utilization by contract dollars paid for FAA funded contracts. It is important to note that the contract dollar shares are equivalent to the weight of each NAICS code spending. These weights were used to transform data from unweighted availability to weighted availability and are discussed below.

Table 4-13: NAICS Code Distribution of FAA Funded Contract Dollars

NAICS Code	NAICS Code Description	Total Contract Dollars	Pct. Total Contract Dollars
237310	Highway, Street, and Bridge Construction	\$108,296,464.00	72.7%
238210	Electrical Contractors and Other Wiring Installation Contractors	\$12,278,845.00	8.2%
236220	Commercial and Institutional Building Construction	\$8,981,683.00	6.0%
541330	Engineering Services	\$4,240,957.00	2.8%

175. The entire list of states is contained in Appendix D.

NAICS Code	NAICS Code Description	Total Contract Dollars	Pct. Total Contract Dollars
238910	Site Preparation Contractors	\$3,496,588.50	2.3%
238110	Poured Concrete Foundation and Structure Contractors	\$1,954,138.50	1.3%
238220	Plumbing, Heating, and Air-Conditioning Contractors	\$1,772,742.00	1.2%
238390	Other Building Finishing Contractors	\$1,378,085.38	0.9%
237110	Water and Sewer Line and Related Structures Construction	\$1,244,685.25	0.8%
423510	Metal Service Centers and Other Metal Merchant Wholesalers	\$1,157,230.50	0.8%
484220	Specialized Freight (except Used Goods) Trucking, Local	\$1,134,219.00	0.8%
238990	All Other Specialty Trade Contractors	\$1,076,584.88	0.7%
238120	Structural Steel and Precast Concrete Contractors	\$750,189.94	0.5%
423310	Lumber, Plywood, Millwork, and Wood Panel Merchant Wholesalers	\$681,836.88	0.5%
238310	Drywall and Insulation Contractors	\$465,837.50	0.3%
237120	Oil and Gas Pipeline and Related Structures Construction	\$117,578.57	0.1%
Total		\$149,027,665.90	100.0%

Source: CHA analysis of TxDOT data.

**Table 4-14: Distribution of FAA Funded Contract Dollars by Race and Gender
(total dollars)**

NAICS Code	Black	Hispanic	Asian	Native American	White Women	DBE	Non-DBE	Total
236220	\$0	\$662,055	\$0	\$0	\$126,091	\$788,146	\$8,193,537	\$8,981,683
237110	\$431,959	\$0	\$0	\$0	\$0	\$431,959	\$812,726	\$1,244,685
237120	\$0	\$44,124	\$0	\$0	\$0	\$44,124	\$73,455	\$117,579
237310	\$0	\$1,486,241	\$617,788	\$92	\$3,990,083	\$6,094,204	\$102,202,264	\$108,296,468
238110	\$183,771	\$0	\$0	\$0	\$375,374	\$559,145	\$1,394,993	\$1,954,138
238120	\$0	\$0	\$0	\$270,467	\$183,325	\$453,791	\$296,399	\$750,190
238210	\$2,172,280	\$3,098,577	\$0	\$0	\$1,304,897	\$6,575,754	\$5,703,091	\$12,278,845
238220	\$0	\$203,408	\$0	\$0	\$922,786	\$1,126,194	\$646,548	\$1,772,742
238310	\$0	\$0	\$0	\$0	\$3,019	\$3,019	\$462,818	\$465,838
238390	\$0	\$244,822	\$153,093	\$0	\$369,510	\$767,425	\$610,660	\$1,378,085
238910	\$0	\$0	\$0	\$0	\$13,535	\$13,535	\$3,483,053	\$3,496,589
238990	\$0	\$1,200	\$0	\$36,093	\$688,552	\$725,845	\$350,740	\$1,076,585
423310	\$0	\$0	\$0	\$0	\$0	\$0	\$681,837	\$681,837
423510	\$0	\$0	\$0	\$0	\$0	\$0	\$1,157,230	\$1,157,230
484220	\$0	\$56,478	\$0	\$302,931	\$650,176	\$1,009,585	\$124,634	\$1,134,219
541330	\$315,795	\$32,748	\$0	\$0	\$1,278,301	\$1,626,844	\$2,614,113	\$4,240,957
Total	\$3,103,805	\$5,829,650	\$770,881	\$609,583	\$9,905,650	\$20,219,569	\$128,808,101	\$149,027,670

Source: CHA analysis of TxDOT data.

**Table 4-15: Distribution of FAA Funded Contract Dollars by Race and Gender
(share of total dollars)**

NAICS Code	Black	Hispanic	Asian	Native American	White Women	DBE	Non-DBE	Total
236220	0.0%	7.4%	0.0%	0.0%	1.4%	8.8%	91.2%	100.0%
237110	34.7%	0.0%	0.0%	0.0%	0.0%	34.7%	65.3%	100.0%
237120	0.0%	37.5%	0.0%	0.0%	0.0%	37.5%	62.5%	100.0%
237310	0.0%	1.4%	0.6%	0.0%	3.7%	5.6%	94.4%	100.0%
238110	9.4%	0.0%	0.0%	0.0%	19.2%	28.6%	71.4%	100.0%
238120	0.0%	0.0%	0.0%	36.1%	24.4%	60.5%	39.5%	100.0%
238210	17.7%	25.2%	0.0%	0.0%	10.6%	53.6%	46.5%	100.0%
238220	0.0%	11.5%	0.0%	0.0%	52.1%	63.5%	36.5%	100.0%
238310	0.0%	0.0%	0.0%	0.0%	0.7%	0.7%	99.4%	100.0%
238390	0.0%	17.8%	11.1%	0.0%	26.8%	55.7%	44.3%	100.0%
238910	0.0%	0.0%	0.0%	0.0%	0.4%	0.4%	99.6%	100.0%
238990	0.0%	0.1%	0.0%	3.4%	64.0%	67.4%	32.6%	100.0%
423310	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	100.0%	100.0%
423510	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	100.0%	100.0%
484220	0.0%	5.0%	0.0%	26.7%	57.3%	89.0%	11.0%	100.0%
541330	7.5%	0.8%	0.0%	0.0%	30.1%	38.4%	61.6%	100.0%
Total	2.1%	3.9%	0.5%	0.4%	6.7%	13.6%	86.4%	100.0%

Source: CHA analysis of TxDOT data.

3. Availability of DBEs in TxDOT’s Market for FAA Funded Contracts

Tables 4.16 through 4.18 present:

- The *unweighted* availability by race and gender and by NAICS codes in TxDOT’s constrained product markets;
- The weights used to adjust the unweighted numbers¹⁷⁶; and
- The final estimates of the weighted averages of the individual 6-digit level availability estimates in TxDOT’s market area.

176. These weights are equivalent to the share of contract dollars presented in the previous section.

These weighted availability estimates can be used by TxDOT to set its triennial DBE goal and contract goals for FAA funded projects.

Table 4-16: Unweighted Availability for FAA Funded Contracts

NAICS Code	Black	Latino	Asian	Native American	White Women	DBE	Non-DBE	Total
236220	5.9%	8.6%	2.2%	1.0%	8.6%	26.3%	73.7%	100.0%
237110	2.0%	6.4%	0.5%	0.1%	6.8%	15.9%	84.1%	100.0%
237120	0.9%	1.7%	0.3%	0.6%	4.3%	7.9%	92.1%	100.0%
237310	6.8%	13.6%	1.7%	0.7%	8.2%	31.0%	69.0%	100.0%
238110	2.2%	6.9%	0.4%	0.2%	4.1%	13.9%	86.1%	100.0%
238120	4.2%	16.4%	1.8%	1.8%	10.4%	34.7%	65.3%	100.0%
238210	1.5%	4.4%	0.6%	0.2%	5.2%	11.9%	88.1%	100.0%
238220	1.0%	2.3%	0.2%	0.1%	3.5%	7.1%	92.9%	100.0%
238310	2.7%	6.1%	0.4%	0.3%	5.0%	14.4%	85.6%	100.0%
238390	0.9%	3.0%	0.2%	0.2%	3.3%	7.5%	92.5%	100.0%
238910	4.8%	9.0%	0.6%	0.4%	7.7%	22.4%	77.6%	100.0%
238990	1.3%	2.9%	0.3%	0.2%	4.6%	9.2%	90.8%	100.0%
423310	0.1%	0.9%	0.2%	0.2%	3.9%	5.2%	94.8%	100.0%
423510	0.3%	2.2%	0.6%	0.2%	4.1%	7.5%	92.5%	100.0%
484220	9.1%	20.4%	0.4%	0.6%	9.4%	39.9%	60.1%	100.0%
541330	2.6%	6.2%	3.9%	0.6%	6.9%	20.1%	79.9%	100.0%
Total	2.3%	5.0%	1.0%	0.3%	5.4%	14.0%	86.0%	100.0%

Source: CHA analysis of TxDOT data; Hoovers; CHA Master Directory.

Table 4-17: Share of TxDOT Spending on FAA Funded Contracts by NAICS Code

NAICS Code	NAICS Code Description	Weight (Pct. Share of Total Sector Dollars)
236220	Commercial and Institutional Building Construction	6.0%
237110	Water and Sewer Line and Related Structures Construction	0.8%
237120	Oil and Gas Pipeline and Related Structures Construction	0.1%
237310	Highway, Street, and Bridge Construction	72.7%
238110	Poured Concrete Foundation and Structure Contractors	1.3%

NAICS Code	NAICS Code Description	Weight (Pct. Share of Total Sector Dollars)
238120	Structural Steel and Precast Concrete Contractors	0.5%
238210	Electrical Contractors and Other Wiring Installation Contractors	8.2%
238220	Plumbing, Heating, and Air-Conditioning Contractors	1.2%
238310	Drywall and Insulation Contractors	0.3%
238390	Other Building Finishing Contractors	0.9%
238910	Site Preparation Contractors	2.3%
238990	All Other Specialty Trade Contractors	0.7%
423310	Lumber, Plywood, Millwork, and Wood Panel Merchant Wholesalers	0.5%
423510	Metal Service Centers and Other Metal Merchant Wholesalers	0.8%
484220	Specialized Freight (except Used Goods) Trucking, Local	0.8%
541330	Engineering Services	2.8%
Total		100.0%

Source: CHA analysis of TxDOT data.

Table 4-18: Aggregated Weighted Availability for FAA Funded Contracts (total dollars)

	Black	Hispanic	Asian	Native American	White Women	DBE	Non-DBE	Total
Total	5.8%	11.7%	1.5%	0.6%	7.7%	27.4%	72.7%	100.0%

Source: CHA analysis of TxDOT data; Hoovers; CHA Master Directory.

Because Congress has already determined that discrimination operates in the market for federally funded transportation contracts, local governments located outside the Ninth Circuit Court of Appeals do not perform a disparity analysis on USDOT-funded contracts. Under 49 C.F.R. Part 26, all that is required is an availability analysis.¹⁷⁷

177. See <https://www.transportation.gov/osdbu/disadvantaged-business-enterprise/western-states-paving-company-case-q-and-a>.

E. TxDOT's State Funded Contracts

Our analysis of TxDOT's State funded contracts applied the same concepts and analyses that were used when analyzing FHWA and FAA funded contracts. Once again, we provide the appropriate tables with minimal accompanying text.

1. TxDOT's Product and Geographic Markets for State Funded Contracts

a. TxDOT's Unconstrained Product Market for State Funded Contracts

Tables 4.19 through 4.21 present the NAICS codes used to define the product market for TxDOT's State funded contracts and present the Department's *unconstrained* product market for State funded contracts.

**Table 4-19: Industry Percentage Distribution of Contracts by Dollars Paid
for State Funded Contracts**

NAICS Code	NAICS Code Description	Pct. Total Contract Dollars	Cumulative Pct. Total Contract Dollars
237310	Highway, Street, and Bridge Construction	40.0%	40.0%
541330	Engineering Services	20.6%	60.5%
561320	Temporary Help Services	5.9%	66.4%
561730	Landscaping Services	3.2%	69.7%
541512	Computer Systems Design Services	3.2%	72.9%
238210	Electrical Contractors and Other Wiring Installation Contractors	2.2%	75.0%
238120	Structural Steel and Precast Concrete Contractors	2.1%	77.1%
541611	Administrative Management and General Management Consulting Services	2.0%	79.1%
541420	Industrial Design Services	1.9%	81.0%
541620	Environmental Consulting Services	1.7%	82.8%
238910	Site Preparation Contractors	1.4%	84.2%

NAICS Code	NAICS Code Description	Pct. Total Contract Dollars	Cumulative Pct. Total Contract Dollars
327320	Ready-Mix Concrete Manufacturing	1.3%	85.5%
511210	Software Publishers	1.1%	86.6%
Total			100.0%^a

a. Agency spending across another 131 NAICS codes comprised 13.4 percent of all spending. The entire list of NAICS codes is contained in Appendix D.

Source: CHA analysis of TxDOT data.

Table 4-20: Industry Percentage Distribution of Contracts by Dollars Paid for State Funded Contracts, Prime Contracts

NAICS Code	NAICS Code Description	Pct. Total Contract Dollars	Cumulative Pct. Total Contract Dollars
237310	Highway, Street, and Bridge Construction	50.9%	50.9%
541330	Engineering Services	24.2%	75.1%
561320	Temporary Help Services	7.8%	82.9%
541611	Administrative Management and General Management Consulting Services	3.1%	85.9%
541620	Environmental Consulting Services	1.8%	87.7%
511210	Software Publishers	1.7%	89.5%
541512	Computer Systems Design Services	1.1%	90.5%
423430	Computer and Computer Peripheral Equipment and Software Merchant Wholesalers	1.1%	91.6%
Total			100.0%^a

a. Agency spending across another 27 NAICS codes comprised 8.4 percent of all spending. The entire list of NAICS codes is contained in Appendix D.

Source: CHA analysis of TxDOT data

**Table 4-21: Industry Percentage Distribution of Contracts by Dollars Paid
for State Funded Contracts, Subcontracts**

NAICS Code	NAICS Code Description	Pct. Total Contract Dollars	Cumulative Pct. Total Contract Dollars
237310	Highway, Street, and Bridge Construction	20.7%	20.7%
541330	Engineering Services	14.1%	34.8%
561730	Landscaping Services	7.5%	42.3%
541512	Computer Systems Design Services	7.0%	49.4%
238210	Electrical Contractors and Other Wiring Installation Contractors	5.9%	55.2%
238120	Structural Steel and Precast Concrete Contractors	5.8%	61.0%
541420	Industrial Design Services	5.1%	66.2%
327320	Ready-Mix Concrete Manufacturing	3.5%	69.7%
238910	Site Preparation Contractors	3.0%	72.7%
561320	Temporary Help Services	2.6%	75.3%
236210	Industrial Building Construction	2.3%	77.6%
423320	Brick, Stone, and Related Construction Material Merchant Wholesalers	2.2%	79.8%
237990	Other Heavy and Civil Engineering Construction	2.0%	81.8%
541620	Environmental Consulting Services	1.5%	83.4%
238990	All Other Specialty Trade Contractors	1.2%	84.6%
541380	Testing Laboratories	1.2%	85.8%
238110	Poured Concrete Foundation and Structure Contractors	1.1%	86.9%
541310	Architectural Services	1.1%	88.0%
541370	Surveying and Mapping (except Geophysical) Services	1.1%	89.1%

NAICS Code	NAICS Code Description	Pct. Total Contract Dollars	Cumulative Pct. Total Contract Dollars
237110	Water and Sewer Line and Related Structures Construction	1.0%	90.1%
484220	Specialized Freight (except Used Goods) Trucking, Local	1.0%	91.1%
Total			100.0%^a

a. Agency spending across another 112 NAICS codes comprised 8.9 percent of all spending. The entire list of NAICS codes is contained in Appendix D.

Source: CHA analysis of TxDOT data

b. TxDOT’s Geographic Market for State Funded Contracts

Spending in the State of Texas accounted for 92.2 percent of all contract dollars paid in TxDOT’s unconstrained product market for State funded contracts.¹⁷⁸ Therefore, the State of Texas constituted the geographic market area from which we drew our availability data for State funded contracts.

2. TxDOT’s Utilization of DBEs on State Funded Contracts

Tables 4.22 through 4.24 present TxDOT’s utilization by contract dollars paid for State funded contracts. It is important to note that the contract dollar shares are equivalent to the weight of each NAICS code spending. These weights were used to transform data from unweighted availability to weighted availability and are discussed below.

Table 4-22: NAICS Code Distribution of State Funded Contract Dollars

NAICS Code	NAICS Code Description	Total Contract Dollars	Pct. Total Contract Dollars
237310	Highway, Street, and Bridge Construction	\$1,374,197,504.00	45.5%
541330	Engineering Services	\$681,441,920.00	22.5%
561320	Temporary Help Services	\$205,251,952.00	6.8%
561730	Landscaping Services	\$114,037,352.00	3.8%
238210	Electrical Contractors and Other Wiring Installation Contractors	\$69,785,424.00	2.3%

178. The entire list of states is contained in Appendix D.

NAICS Code	NAICS Code Description	Total Contract Dollars	Pct. Total Contract Dollars
541611	Administrative Management and General Management Consulting Services	\$69,641,344.00	2.3%
238120	Structural Steel and Precast Concrete Contractors	\$69,561,376.00	2.3%
541620	Environmental Consulting Services	\$60,680,924.00	2.0%
541420	Industrial Design Services	\$45,281,812.00	1.5%
327320	Ready-Mix Concrete Manufacturing	\$45,087,732.00	1.5%
511210	Software Publishers	\$38,745,032.00	1.3%
238910	Site Preparation Contractors	\$34,141,964.00	1.1%
541512	Computer Systems Design Services	\$25,271,670.00	0.8%
423430	Computer and Computer Peripheral Equipment and Software Merchant Wholesalers	\$23,641,378.00	0.8%
484220	Specialized Freight (except Used Goods) Trucking, Local	\$22,125,350.00	0.7%
238990	All Other Specialty Trade Contractors	\$21,246,812.00	0.7%
237990	Other Heavy and Civil Engineering Construction	\$19,570,584.00	0.6%
237110	Water and Sewer Line and Related Structures Construction	\$17,296,110.00	0.6%
541310	Architectural Services	\$17,019,484.00	0.6%
423320	Brick, Stone, and Related Construction Material Merchant Wholesalers	\$15,068,067.00	0.5%
236210	Industrial Building Construction	\$14,391,562.00	0.5%
541380	Testing Laboratories	\$14,026,172.00	0.5%
541370	Surveying and Mapping (except Geophysical) Services	\$13,449,653.00	0.4%
238110	Poured Concrete Foundation and Structure Contractors	\$12,387,638.00	0.4%
Total		\$3,023,348,816.00	100.0%

Source: CHA analysis of TxDOT data.

Table 4-23: Distribution of State Funded Contract Dollars by Race and Gender
(total dollars)

NAICS Code	Black	Hispanic	Asian	Native American	White Women	HUB	Non-HUB	Total
236210	\$768,432	\$12,729	\$0	\$0	\$0	\$781,161	\$13,610,401	\$14,391,562
237110	\$0	\$1,250,773	\$0	\$0	\$103,091	\$1,353,864	\$15,942,245	\$17,296,109
237310	\$4,225,748	\$40,488,747	\$4,232,235	\$36,775	\$39,047,950	\$88,031,455	\$1,286,166,058	\$1,374,197,513
237990	\$0	\$1,259,337	\$0	\$0	\$1,014,774	\$2,274,110	\$17,296,474	\$19,570,584
238110	\$6,316,328	\$5,405,944	\$0	\$0	\$72,624	\$11,794,896	\$592,742	\$12,387,638
238120	\$434,442	\$21,702,140	\$11,059,855	\$642,335	\$2,266,124	\$36,104,896	\$33,456,478	\$69,561,375
238210	\$8,556	\$1,291,279	\$452,724	\$0	\$10,964,494	\$12,717,052	\$57,068,370	\$69,785,422
238910	\$0	\$1,193,820	\$1,862,064	\$604,956	\$3,033,186	\$6,694,026	\$27,447,939	\$34,141,965
238990	\$153,739	\$838,094	\$0	\$0	\$3,455,382	\$4,447,215	\$16,799,597	\$21,246,812
327320	\$0	\$0	\$0	\$0	\$0	\$0	\$45,087,732	\$45,087,732
423320	\$0	\$0	\$0	\$0	\$0	\$0	\$15,068,067	\$15,068,067
423430	\$0	\$0	\$0	\$0	\$23,641,378	\$23,641,378	\$0	\$23,641,378
484220	\$0	\$4,205,531	\$0	\$24,882	\$1,900,120	\$6,130,534	\$15,994,816	\$22,125,350
511210	\$0	\$0	\$0	\$0	\$0	\$0	\$38,745,032	\$38,745,032
541310	\$0	\$702,441	\$2,597,099	\$0	\$250,499	\$3,550,039	\$13,469,446	\$17,019,485
541330	\$12,375,490	\$68,213,262	\$32,653,763	\$1,738,176	\$23,854,947	\$138,835,638	\$542,606,307	\$681,441,945
541370	\$411,276	\$9,182,302	\$871,458	\$0	\$1,836,295	\$12,301,330	\$1,148,322	\$13,449,653
541380	\$3,675,800	\$2,413,194	\$1,147,577	\$0	\$5,697,222	\$12,933,793	\$1,092,379	\$14,026,172
541420	\$30,972	\$1,045,354	\$629,449	\$0	\$0	\$1,705,775	\$43,576,035	\$45,281,810
541512	\$316,295	\$0	\$550,740	\$0	\$124,583	\$991,618	\$24,280,051	\$25,271,669
541611	\$0	\$150,000	\$0	\$0	\$446,950	\$596,950	\$69,044,392	\$69,641,342

NAICS Code	Black	Hispanic	Asian	Native American	White Women	HUB	Non-HUB	Total
541620	\$1,163,702	\$4,879,802	\$2,143,433	\$0	\$7,405,660	\$15,592,597	\$45,088,327	\$60,680,924
561320	\$190,725	\$226,615	\$14,232,429	\$0	\$6,853,991	\$21,503,760	\$183,748,194	\$205,251,953
561730	\$0	\$1,356,814	\$0	\$92,145	\$45,502,758	\$46,951,717	\$67,085,638	\$114,037,354
Total	\$30,071,507	\$165,818,176	\$72,432,824	\$3,139,270	\$177,472,027	\$448,933,805	\$2,574,415,043	\$3,023,348,848

Source: CHA analysis of TxDOT data.

**Table 4-24: Distribution of State Funded Contract Dollars by Race and Gender
(share of total dollars)**

NAICS Code	Black	Hispanic	Asian	Native American	White Women	HUB	Non-HUB	Total
236210	5.3%	0.1%	0.0%	0.0%	0.0%	5.4%	94.6%	100.0%
237110	0.0%	7.2%	0.0%	0.0%	0.6%	7.8%	92.2%	100.0%
237310	0.3%	3.0%	0.3%	0.0%	2.8%	6.4%	93.6%	100.0%
237990	0.0%	6.4%	0.0%	0.0%	5.2%	11.6%	88.4%	100.0%
238110	51.0%	43.6%	0.0%	0.0%	0.6%	95.2%	4.8%	100.0%
238120	0.6%	31.2%	15.9%	0.9%	3.3%	51.9%	48.1%	100.0%
238210	0.0%	1.9%	0.7%	0.0%	15.7%	18.2%	81.8%	100.0%
238910	0.0%	3.5%	5.5%	1.8%	8.9%	19.6%	80.4%	100.0%
238990	0.7%	3.9%	0.0%	0.0%	16.3%	20.9%	79.1%	100.0%
327320	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	100.0%	100.0%
423320	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	100.0%	100.0%
423430	0.0%	0.0%	0.0%	0.0%	100.0%	100.0%	0.0%	100.0%
484220	0.0%	19.0%	0.0%	0.1%	8.6%	27.7%	72.3%	100.0%
511210	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	100.0%	100.0%

NAICS Code	Black	Hispanic	Asian	Native American	White Women	HUB	Non-HUB	Total
541310	0.0%	4.1%	15.3%	0.0%	1.5%	20.9%	79.1%	100.0%
541330	1.8%	10.0%	4.8%	0.3%	3.5%	20.4%	79.6%	100.0%
541370	3.1%	68.3%	6.5%	0.0%	13.7%	91.5%	8.5%	100.0%
541380	26.2%	17.2%	8.2%	0.0%	40.6%	92.2%	7.8%	100.0%
541420	0.1%	2.3%	1.4%	0.0%	0.0%	3.8%	96.2%	100.0%
541512	1.3%	0.0%	2.2%	0.0%	0.5%	3.9%	96.1%	100.0%
541611	0.0%	0.2%	0.0%	0.0%	0.6%	0.9%	99.1%	100.0%
541620	1.9%	8.0%	3.5%	0.0%	12.2%	25.7%	74.3%	100.0%
561320	0.1%	0.1%	6.9%	0.0%	3.3%	10.5%	89.5%	100.0%
561730	0.0%	1.2%	0.0%	0.1%	39.9%	41.2%	58.8%	100.0%
Total	1.0%	5.5%	2.4%	0.1%	5.9%	14.9%	85.2%	100.0%

Source: CHA analysis of TxDOT data.

3. Availability of DBEs in TxDOT’s Market for State Funded Contracts

Tables 4.25 through 4.27 present:

- The *unweighted* availability by race and gender and by NAICS codes in TxDOT’s constrained product markets;
- The weights used to adjust the unweighted numbers¹⁷⁹; and
- The final estimates of the weighted averages of the individual 6-digit level availability estimates in TxDOT’s market areas.

These weighted availability estimates can be used by TxDOT to set contract HUB goals for State funded projects.

Table 4-25: Unweighted Availability for State Funded Contracts

NAICS Code	Black	Latino	Asian	Native American	White Women	HUB	Non-HUB	Total
236210	5.1%	7.8%	1.6%	1.1%	9.5%	25.1%	74.9%	100.0%
237110	2.0%	6.5%	0.5%	0.1%	6.9%	16.0%	84.0%	100.0%
237310	6.7%	13.8%	1.5%	0.7%	8.6%	31.3%	68.7%	100.0%

179. These weights are equivalent to the share of contract dollars presented in the previous section.

NAICS Code	Black	Latino	Asian	Native American	White Women	HUB	Non-HUB	Total
237990	2.5%	6.9%	0.8%	0.3%	6.0%	16.5%	83.5%	100.0%
238110	2.2%	7.0%	0.4%	0.2%	4.1%	13.9%	86.1%	100.0%
238120	4.1%	16.8%	1.9%	1.8%	10.7%	35.3%	64.7%	100.0%
238210	1.5%	4.4%	0.6%	0.2%	5.2%	11.9%	88.1%	100.0%
238910	4.7%	9.1%	0.6%	0.4%	7.9%	22.7%	77.3%	100.0%
238990	1.3%	2.9%	0.3%	0.2%	4.6%	9.2%	90.8%	100.0%
327320	1.1%	3.8%	0.5%	0.0%	3.8%	9.1%	90.9%	100.0%
423320	0.8%	2.3%	0.8%	0.1%	5.2%	9.3%	90.7%	100.0%
423430	2.1%	2.4%	4.4%	0.3%	7.7%	17.0%	83.0%	100.0%
484220	9.0%	20.6%	0.4%	0.5%	9.6%	40.1%	59.9%	100.0%
511210	0.7%	0.9%	1.5%	0.0%	4.3%	7.4%	92.6%	100.0%
541310	1.9%	5.4%	2.0%	0.3%	9.1%	18.7%	81.3%	100.0%
541330	2.7%	6.5%	4.0%	0.6%	7.1%	20.8%	79.2%	100.0%
541370	0.8%	7.9%	1.9%	0.7%	7.8%	19.1%	80.9%	100.0%
541380	1.6%	3.7%	3.2%	0.1%	7.8%	16.4%	83.6%	100.0%
541420	2.8%	2.2%	1.1%	0.0%	20.6%	26.7%	73.3%	100.0%
541512	3.3%	2.8%	5.0%	0.3%	7.6%	19.1%	80.9%	100.0%
541611	2.8%	1.4%	0.8%	0.1%	6.8%	11.9%	88.1%	100.0%
541620	2.8%	4.4%	2.1%	0.2%	13.3%	22.7%	77.3%	100.0%
561320	4.1%	3.8%	3.2%	0.4%	11.5%	23.0%	77.0%	100.0%
561730	1.4%	1.7%	0.2%	0.1%	4.3%	7.7%	92.3%	100.0%
Total	2.4%	4.2%	1.5%	0.3%	6.5%	14.9%	85.1%	100.0%

Source: CHA analysis of TxDOT data; Hoovers; CHA Master Directory.

Table 4-26: Share of TxDOT Spending on State Funded Contracts by NAICS Code

NAICS Code	NAICS Code Description	Weight (Pct. Share of Total Sector Dollars)
236210	Industrial Building Construction	0.5%
237110	Water and Sewer Line and Related Structures Construction	0.6%
237310	Highway, Street, and Bridge Construction	45.5%
237990	Other Heavy and Civil Engineering Construction	0.6%

NAICS Code	NAICS Code Description	Weight (Pct. Share of Total Sector Dollars)
238110	Poured Concrete Foundation and Structure Contractors	0.4%
238120	Structural Steel and Precast Concrete Contractors	2.3%
238210	Electrical Contractors and Other Wiring Installation Contractors	2.3%
238910	Site Preparation Contractors	1.1%
238990	All Other Specialty Trade Contractors	0.7%
327320	Ready-Mix Concrete Manufacturing	1.5%
423320	Brick, Stone, and Related Construction Material Merchant Wholesalers	0.5%
423430	Computer and Computer Peripheral Equipment and Software Merchant Wholesalers	0.8%
484220	Specialized Freight (except Used Goods) Trucking, Local	0.7%
511210	Software Publishers	1.3%
541310	Architectural Services	0.6%
541330	Engineering Services	22.5%
541370	Surveying and Mapping (except Geophysical) Services	0.4%
541380	Testing Laboratories	0.5%
541420	Industrial Design Services	1.5%
541512	Computer Systems Design Services	0.8%
541611	Administrative Management and General Management Consulting Services	2.3%
541620	Environmental Consulting Services	2.0%
561320	Temporary Help Services	6.8%
561730	Landscaping Services	3.8%
Total		100.0%

Source: CHA analysis of TxDOT data.

Table 4-27: Aggregated Weighted Availability for State Funded Contracts

	Black	Hispanic	Asian	Native American	White Women	HUB	Non-HUB	Total
Total	4.5%	9.3%	2.1%	0.5%	8.3%	24.8%	75.2%	100.0%

Source: CHA analysis of TxDOT data; Hoovers; CHA Master Directory.

4. Analysis of Disparity Ratios on State Funded Contracts Between HUB Utilization and Availability

To meet the strict scrutiny requirement that a local government must establish that discrimination operates in its market area, CHA performed a disparity analysis. This type of proof is relevant and probative to whether TxDOT has a compelling interest in remedying discrimination in its market area. We calculated disparity ratios for total HUB utilization compared to the total weighted availability of HUBs, measured in dollars paid, on State funded contracts.

A “large” or “substantively significant” disparity is commonly defined by courts as utilization that is equal to or less than 80 percent of the availability measure. A substantively significant disparity supports the inference that the result may be caused by the disparate impacts of discrimination.¹⁸⁰ A statistically significant disparity means that an outcome is unlikely to have occurred as the result of random chance alone. Put another way, the greater the statistical significance, the smaller the probability that it resulted from random chance alone. A more in-depth discussion of statistical significance is provided in Appendix C.

Substantive and Statistical Significance

- ‡ Connotes these values are substantively significant. Courts have ruled the disparity ratio less or equal to 80% represent disparities that are substantively significant. (See Footnote 17 for more information.)
- * Connotes these values are statistically significant at the 0.05 level. (See Appendix C for more information.)
- ** Connotes these values are statistically significant at the 0.01 level. (See Appendix C for more information.)
- *** Connotes these values are statistically significant at the 0.001 level. (See Appendix C for more information.)

Table 4-28 presents the calculated disparity ratios.

180. See U.S. Equal Opportunity Employment Commission regulation, 29 C.F.R. § 1607.4(D) (“A selection rate for any race, sex, or ethnic group which is less than four-fifths (4/5) (or eighty percent) of the rate for the group with the highest rate will generally be regarded by the Federal enforcement agencies as evidence of adverse impact, while a greater than four-fifths rate will generally not be regarded by Federal enforcement agencies as evidence of adverse impact.”).

Table 4-28: Disparity Ratio for State Funded Contracts

	Black	Hispanic	Asian	Native American	White Women	HUB	Non-HUB	Total
Total	21.8%‡	58.6%‡*	113.0%	18.2%‡	71.0%‡	59.8%‡***	113.3%***	100.0%

Source: CHA analysis of TxDOT data; Hoovers; CHA Master Directory.

*** Indicates statistical significance at the 0.001 level

* Indicates statistical significance at the 0.05 level

‡ Indicates substantive significance

V. ANALYSIS OF ECONOMY-WIDE DISPARITIES IN THE TEXAS DEPARTMENT OF TRANSPORTATION'S MARKET

A. Introduction

The late Nobel Prize Laureate Kenneth Arrow, in his seminal paper on the economic analysis of discrimination, observed:

Racial discrimination pervades every aspect of a society in which it is found. It is found above all in attitudes of both races, but also in social relations, in intermarriage, in residential location, and frequently in legal barriers. It is also found in levels of economic accomplishment; this is income, wages, prices paid, and credit extended.¹⁸¹

This Chapter explores the data and literature relevant to how discrimination in the Texas Department of Transportation's ("TxDOT") market and throughout the wider economy affects the ability of minorities and women to fairly and fully engage in TxDOT's prime contract and subcontracting opportunities. First, we analyzed the rates at which Minority- and Women-Owned Business Enterprises ("M/WBEs")¹⁸² in the state form firms and their earnings from those firms. Next, we looked at M/WBE business activity in the state of Texas. Next, we summarized the literature on barriers to equal access to commercial credit. Finally, we summarized the literature on barriers to equal access to human capital. All three types of evidence have been found by the courts to be relevant and probative of whether a government will be a passive participant in discrimination without some type of affirmative interventions.

A key element to determining the need for government intervention, through contract goals in the sectors of the economy where TxDOT procures goods and services, is an analysis of the extent of the disparities in those sectors independent of the agency's intervention through its contracting affirmative action programs.

181. Arrow, Kenneth J., "What Has Economics to say about racial discrimination?" *Journal of Economic Perspectives*, (1998), 12(2), pp. 91-100.

182. For purposes of this Chapter, the term "M/WBE" includes firms certified as Disadvantaged Business Enterprises ("DBEs") under 49 C.F.R. Part 26.

The courts have repeatedly held that analysis of disparities in the rates at which M/WBEs in the government's markets form businesses compared to similar non-M/WBEs, their earnings from such businesses, and their access to capital markets are highly relevant to the determination of whether the market functions properly for all firms regardless of the race or gender of their ownership.¹⁸³ These analyses contributed most recently to the successful defense of the Illinois Tollway's Disadvantaged Business Enterprise (DBE) Program.¹⁸⁴ As explained by the Tenth Circuit in upholding the U.S. Department of Transportation's DBE program, this type of evidence

demonstrates the existence of two kinds of discriminatory barriers to minority subcontracting enterprises, both of which show a strong link between racial disparities in the federal government's disbursements of public funds for construction contracts and the channeling of those funds due to private discrimination. The first discriminatory barriers are to the formation of qualified minority subcontracting enterprises due to private discrimination, precluding from the outset competition for public construction contracts by minority enterprises. The second discriminatory barriers are to fair competition between minority and non-minority subcontracting enterprises, again due to private discrimination, precluding existing minority firms from effectively competing for public construction contracts. The government also presents further evidence in the form of local disparity studies of minority subcontracting and studies of local subcontracting markets after the removal of affirmative action programs... The government's evidence is particularly striking in the area of the race-based denial of access to capital, without which the formation of minority subcontracting enterprises is stymied.¹⁸⁵

Business discrimination studies and lending studies are relevant and probative because they show a strong link between the disbursement of public funds and the channeling of those funds due to private discrimination. "Evidence that private discrimination results in barriers to business formation is relevant because it demonstrates that M/WBEs are precluded *at the outset* from competing for public construction contracts. Evidence of barriers to fair competition is also relevant

183. See the discussion in Chapter II of the legal standards applicable to TxDOT's DBE and Historically Underutilized Business programs.

184. *Midwest Fence Corp. v. Illinois Department of Transportation, Illinois State Toll Highway Authority et al*, 840 F.3d 942 (7th Cir. 2016) (upholding the Illinois Tollway's program for non-federally funded contracts modeled after Part 26 and based on CHA's expert testimony, including about disparities in the overall Illinois construction industry); *see also Builders Association of Greater Chicago v. City of Chicago*, 298 F.Supp.2d 725 (N.D. Ill. 2003) (holding that City of Chicago's M/WBE program for local construction contracts met compelling interest using this framework).

185. *Adarand Constructors, Inc. v. Slater*, 228 F.3d 1147, 1168-1169 (10th Cir. 2000), cert. granted then dismissed as improvidently granted, 532 U.S. 941 (2001) ("*Adarand VII*").

because it again demonstrates that *existing* M/WBEs are precluded from competing for public contracts.”¹⁸⁶ Despite the contentions of plaintiffs that possibly dozens of factors might influence the ability of any individual to succeed in business, the courts have rejected such impossible tests and held that business formation studies are not flawed because they cannot control for subjective descriptions such as “quality of education”, “culture” and “religion”.

For example, in unanimously upholding the USDOT DBE Program, the courts agree that disparities between the earnings of minority-owned firms and similarly situated non minority-owned firms and the disparities in commercial loan denial rates between Black business owners compared to similarly situated non-minority business owners are strong evidence of the continuing effects of discrimination.¹⁸⁷ The Eighth Circuit Court of Appeals took a “hard look” at the evidence Congress considered, and concluded that the legislature had

spent decades compiling evidence of race discrimination in government highway contracting, of barriers to the formation of minority-owned construction businesses, and of barriers to entry. In rebuttal, [the plaintiffs] presented evidence that the data were susceptible to multiple interpretations, but they failed to present affirmative evidence that no remedial action was necessary because minority-owned small businesses enjoy non-discriminatory access to and participation in highway contracts. Thus, they failed to meet their ultimate burden to prove that the DBE program is unconstitutional on this ground.¹⁸⁸

Likewise, in holding that the DBE program regulations meet strict scrutiny, the court in the *Western States* opinion relied on the “substantial body of statistical and anecdotal materials” considered by Congress, including studies based on Census data that provide “ample” evidence of barriers to the formation of minority-owned firms in the transportation contracting industry.¹⁸⁹

This type of court-approved analysis is especially important for an agency such as TxDOT, which has been implementing the DBE and HUB programs for many years. TxDOT’s remedial market interventions using contract goals may ameliorate the disparate impacts of marketplace discrimination in the agency’s own contracting

186. *Id.*

187. *Northern Contracting, Inc. v. Illinois Department of Transportation*, 2005 U.S. Dist. LEXIS 19868, at *64 (Sept. 8, 2005).

188. *Sherbrooke Turf, Inc. v. Minnesota Department of Transportation*, 345 F.3d 964, 970 (8th Cir. 2003), *cert. denied*, 541 U.S. 1041 (2004); *see also Adarand VII*, 228 F.3d at 1175 (plaintiff has not met its burden “of introducing credible, particularized evidence to rebut the government’s initial showing of the existence of a compelling interest in remedying the nationwide effects of past and present discrimination in the federal construction procurement subcontracting market.”).

189. *Western States Paving Co., Inc. v. Department of Transportation*, 407 F.3d 983, 993 (9th Cir. 2005), *cert. denied*, 546 U.S. 1170 (2006).

activities. Put another way, the programs' success in moving towards parity for minority- and women-owned firms may be "masking" the effects of discrimination that otherwise would result in disparities in M/WBE utilization that mirror that of the overall economy.

To explore the question whether or not firms owned by Non-Whites and White Women face disparate treatment in the TxDOT's marketplace outside of TxDOT contracts, we examined the U.S. Bureau of the Census' *American Community Survey* which allows us to examine disparities using individual entrepreneurs as the basic unit of analysis.¹⁹⁰ We limited our analysis to the state of Texas.

We found disparities in wages, business earnings and business formation rates for minorities and women in all industry sectors in TxDOT's marketplace.

B. Disparate Treatment in the Marketplace: Evidence from the Census Bureau's 2013 - 2017 American Community Survey

As discussed in the beginning of this Chapter, the key question is whether firms owned by Non-Whites and White Women would face disparate treatment in the marketplace without the intervention of TxDOT's programs. In this section, we explore this and other aspects of this question using the Census Bureau's *American Community Survey* data. One element explores whether demographic differences exist in the wage and salary income received by private sector workers. Beyond the issue of bias in the incomes generated in the private sector, this exploration is important for the issue of possible variations in the rate of business formation by different demographic groups. One of the determinants of business formation is the pool of financial capital at the disposal of the prospective entrepreneur. The size of this pool is related to the income level of the individual either because the income level impacts the amount of personal savings that can be used for start-up capital or the income level affects one's ability to borrow funds. Consequently, if particular demographic groups receive lower wages and salaries, then they would have access to a smaller pool of financial capital, and thus reduce the likelihood of business formation.

The *American Community Survey* ("ACS") *Public Use Microdata Sample* ("PUMS") is useful in addressing these issues. The ACS is an annual survey of one percent of the population and the PUMS provides detailed information at the individual level. In order to obtain robust results from our analysis, we used the file that combines the most recent data available for the years 2012 through 2016.¹⁹¹ With this rich

190. Data from 2013 - 2017 American Community Survey are the most recent for a five-year period.

191. For more information about the ACS PUMS, see <http://www.census.gov/acs/>.

data set, our analysis can establish with greater certainty any causal links between race, gender and economic outcomes.

Often, the general public sees clear associations between race, gender, and economic outcomes and assumes this association reflects a tight causal connection. However, economic outcomes are determined by a broad set of factors, including and extending beyond, race and gender. To provide a simple example, two people who differ by race or gender may receive different wages. This difference may simply reflect that the individuals work in different industries. If this underlying difference is not known, one might assert the wage differential is the result of race or gender difference. To better understand the impact of race or gender on wages, it is important to compare individuals of different races or genders who work in the same industry. Of course, wages are determined by a broad set of factors beyond race, gender, and industry. With the ACS PUMS, we can include a wide range of additional variables such as age, education, occupation, and state of residence in the analysis.

We employ a multiple regression statistical technique to process this data. This methodology allows us to perform two analyses: an estimation of how variations in certain characteristics (called independent variables) will impact the level of some particular outcome (called a dependent variable), and a determination of how confident we are that the estimated variation is statistically different from zero. We have provided more detail on this technique in Appendix A.

With respect to the first result of regression analysis, we will examine how variations in the race, gender, and industry of individuals impact the wages and other economic outcomes of these individuals. The technique allows us to determine the effect of changes in one variable, assuming that the other determining variables are the same. That is, we compare individuals of different races, but of the same gender and in the same industry; or we compare individuals of different genders, but of the same race and the same industry; or we compare individuals in different industries, but of the same race and gender. We are determining the impact of changes in one variable (*e.g.*, race, gender or industry) on another variable (wages), “controlling for” the movement of any other independent variables.

With respect to the second result of regression analysis, this technique also allows us to determine the statistical significance of the relationship between the dependent variable and independent variable. For example, the relationship between gender and wages might exist but we find that it is not statistically different from zero. In this case, we are not confident that there is not any relationship between the two variables. If the relationship is not statistically different from zero, then a variation in the independent variable has no impact on the dependent variable. The regression analysis allows us to say with varying degrees of statistical confidence that a relationship is different from zero. If the estimated relationship is statistically significant at the 0.05 level, that indicates that we are 95 percent con-

fidant that the relationship is different from zero; if the estimated relationship is statistically significant at the 0.01 level, that indicates that we are 99 percent confident that the relationship is different from zero; if the estimated relationship is statistically significant at the 0.001 level, that indicates that we are 99.9 percent confident that the relationship is different from zero.¹⁹²

In the following presentation of results, each sub-section first reports data on the share of a demographic group that forms a business (business formation rates); the probabilities that a demographic group will form a business relative to White men (business formation probabilities); the differences in wages received by a demographic group relative to White men (wage differentials); and the differences in business earnings received by a demographic group relative to White men (business earnings differentials).

1. All Industries Combined in the State of Texas

One method of exploring differences in economic outcomes is to examine the rate at which different demographic groups form businesses. We developed these business formation rates using data from the U.S. Bureau of the Census' *American Community Survey*. Table 5-1 presents these results. The table indicates that White men have higher business formation rates compared to Non-Whites and White Women. Table 5-2 utilizes probit regression analysis to examine the probability of forming a business after controlling for important factors beyond race and gender.¹⁹³ This table indicates that Non-Whites (except for Asian/Pacific Islanders) and White Women are less likely to form businesses compared to similarly situated White men. The reduced probabilities of business formation ranged from 3.1 percent for Blacks to 1.3 percent for Others and Native Americans. These results were statistically significant at the 0.001 level for Black, Hispanic, and White Women variables. Another way to measure equity is to examine how the wage and salary incomes and business earnings of particular demographic groups compare to White men. Multiple regression statistical techniques allowed us to examine the impact of race and gender on economic outcome while controlling for other factors, such as education and age, that might impact outcomes.¹⁹⁴ Tables 5-3 and 5-4 present this data on wage and salary incomes and business earnings respectively. Table 5-3 indicates that Non-whites and White women earn less than White men. The reduction in earnings range from 34.7 percent to 24 percent, and all the results are statistically significant at the 0.001 level. Table 5-4 indicates that except for Asian/Pacific Islanders and Native Americans, Non-whites and

192. Most social scientists do not endorse utilizing a confidence level of less than 95 percent. Appendix C explains more about statistical significance.

193. Appendix B provides a "Further Explanation of Probit Regression Analysis."

194. See Appendix A for more information on multiple regression statistical analysis.

White women receive business earnings less than White men. The reduction in earnings range from 50.9 percent to 34.1 percent.

Table 5-1: Business Formation Rates
All Industries, 2013 - 2017¹⁹⁵

Demographic Group	Business Formation Rates
Black	1.6%
Hispanic	2.0%
Native American	2.9%
Asian/Pacific Islander	5.2%
Other	3.4%
White Women	3.1%
Non-White Male	2.5%
White Male	5.4%

Source: CHA calculations from the American Community Survey

Table 5-2: Business Formation Probabilities
Relative to White Males, All Industries, 2013 - 2017

Demographic Group	Probability of Forming a Business Relative to White Men
Black	-3.1% ^{***}
Hispanic	-1.9% ^{***}
Native American	-1.3%
Asian/Pacific Islander	0.0%
Other	-1.3%
White Women	-1.6% ^{***}

Source: CHA calculations from the American Community Survey

^{***} Indicates statistical significance at the 0.001 level

195. Statistical significance tests were not conducted on basic business formation rates.

**Table 5-3: Wage Differentials for Selected Groups
Relative to White Men, All Industries, 2013 - 2017**

Demographic Group	Wages Relative to White Men (% Change)
Black	-34.7%***
Hispanic	-24.0%***
Native American	-27.4%***
Asian/Pacific Islander	-31.7%***
Other	-33.5%***
White Women	-34.2%***

Source: CHA calculations from the American Community Survey
*** Indicates statistical significance at the 0.001 level

**Table 5-4: Business Earnings Differentials for Selected Groups
Relative to White Men, All Industries**

Demographic Group	Earnings Relative to White Men (% Change)
Black	-50.4%***
Hispanic	-34.1%***
Native American	14.1%
Asian/Pacific Islander	5.6%
Other	-87.7%
White Women	-50.9%***

Source: CHA calculations from the American Community Survey
*** Indicates statistical significance at the 0.001 level

2. The Construction Industry in the State of Texas

There were only seven Native American firms and two Other firms in this industry; therefore, we could not make statistically reliable estimates of their business activity. Table 5-5 indicates that White men have higher business formation rates compared to Non-Whites and White Women. Table 5-6 indicates that Non-Whites (except for Asian/Pacific Islanders) and White Women are less likely to form businesses compared to similarly situated White men. The reduced probabilities of business formation ranged from 5.7 percent to 1.8 percent. Table 5-7 indicates that Non-whites and White women earn less than

White men. The statistically significant reductions in earnings range from 14.8 percent to 45.3 percent. Table 5-8 indicates that all groups except for Native Americans and Others have business earnings less than White men.¹⁹⁶

**Table 5-5: Business Formation Rates
Construction, 2013 - 2017**

Demographic Group	Business Formation Rates
Black	2.9%
Hispanic	3.5%
Native American	4.9%
Asian/Pacific Islander	9.5%
Other	6.4%
White Women	8.9%
Non-White Male	4.0%
White Male	10.3%

Source: CHA calculations from the American Community Survey

196. A coefficient that is less than -100 percent (the value of the coefficient for Asian/Pacific Islander in Table 5-8), reflects the amount non-M/WBEs earn that is greater than the amount earned by the group in question. In this case, non-M/WBEs earn 141 percent more than Asian/Pacific Islanders.

**Table 5-6: Business Formation Probability Differentials for Selected Groups
Relative to White Men, Construction, 2013 - 2017**

Demographic Group	Probability of Forming a Business Relative to White Men
Black	-5.7%**
Hispanic	-3.1%***
Native American	---- ^a
Asian/Pacific Islander	0.1%
Other	----
White Women	-1.8%*

a. Many times, there were insufficient observations in the data to conduct a reliable statistical analysis. In these instances, the tables will contain the symbol "----".

Source: CHA calculations from the American Community Survey

**** Indicates statistical significance at the 0.001 level*

*** Indicates statistical significance at the 0.01 level*

** Indicates statistical significance at the 0.05 level*

**Table 5-7: Wage Differentials for Selected Groups
Relative to White Men, Construction, 2013 - 2017**

Demographic Group	Wages Relative to White Men (% Change)
Black	-39.4%***
Hispanic	-14.8%***
Native American	-30.0%**
Asian/Pacific Islander	-17.6%***
Other	-45.3%**
White Women	-26.9%***

Source: CHA calculations from the American Community Survey

**** Indicates statistical significance at the 0.001 level*

*** Indicates statistical significance at the 0.01 level*

**Table 5-8: Business Earnings Differentials for Selected Groups
Relative to White Men, Construction, 2013 - 2017**

Demographic Group	Earnings Relative to White Men (% Change)
Black	-33.0%
Hispanic	-83.3%***
Native American	----
Asian/Pacific Islander	-141.0%**
Other	----
White Women	-34.4%

Source: CHA calculations from the American Community Survey

*** Indicates statistical significance at the 0.001 level

** Indicates statistical significance at the 0.01 level

3. The Construction-Related Services Industry in the State of Texas

There was only one business observation of Native Americans and two business observations for Others; this impacted our ability to analyze firm activity for these groups. Table 5-9 indicates that White men have higher business formation rates compared to Non-Whites (except for Native American and Other) and White Women. Table 5-10 indicates that Blacks and Asian/Pacific Islanders are less likely to form businesses compared to similarly situated White men. Table 5-11 indicates that Non-Whites and White women earn less than White men. Table 5-12 indicates that none of the coefficients for business earnings were statistically significant.

**Table 5-9: Business Formation Rates
Construction-Related Services, 2013 - 2017**

Demographic Group	Business Formation Rates
Black	3.7%
Hispanic	3.4%
Native American	7.6%
Asian/Pacific Islander	3.1%
Other	12.8%
White Women	3.2%
Non-White Male	3.4%
White Male	5.5%

Source: CHA calculations from the American Community Survey

**Table 5-10: Business Formation Probability Differentials for Selected Groups
Relative to White Men, Construction-related Services, 2013 - 2017**

Demographic Group	Probability of Forming a Business Relative to White Men
Black	-0.3%
Hispanic	0.0%
Native American	----
Asian/Pacific Islander	-1.8%
Other	----
White Women	0.1%

Source: CHA calculations from the American Community Survey

**Table 5-11: Wage Differentials for Selected Groups
Relative to White Men, Construction-Related Services, 2013 - 2017**

Demographic Group	Wages Relative to White Men (% Change)
Black	-19.4%***
Hispanic	-27.0%***
Native American	-25.0%

Demographic Group	Wages Relative to White Men (% Change)
Asian/Pacific Islander	-8.1%*
Other	-12.3%
White Women	-36.6%***

Source: CHA calculations from the American Community Survey

*** Indicates statistical significance at the 0.001 level

* Indicates statistical significance at the 0.05 level

Table 5-12: Business Earnings Differentials for Selected Groups Relative to White Men, Construction-related Services, 2013 - 2017

Demographic Group	Earnings Relative to White Men (% Change)
Black	-294.0%
Hispanic	17.1%
Native American	----
Asian/Pacific Islander	50.8%
Other	----
White Women	-115.0%

Source: CHA calculations from the American Community Survey

4. The Goods Industry in the State of Texas

Table 5-13 indicates that White men have higher business formation rates except Asian/Pacific Islanders and Native Americans. Table 5-14 indicates that only one result is statistically significant. Table 5-15 indicates that statistically significant results are found for four groups (Black; Hispanic; Asian/Pacific Islanders; and White Women) and all indicate lower wages relative to White men. Table 5-16 indicates that only the White Women coefficient for business earnings was statistically significant.

Table 5-13: Business Formation Rates Goods, 2013 - 2017

Demographic Group	Business Formation Rates
Black	1.4%
Hispanic	1.5%
Native American	4.1%

Demographic Group	Business Formation Rates
Asian/Pacific Islander	8.0%
Other	0.8%
White Women	2.8%
Non-White Male	2.3%
White Male	4.0%

Source: CHA calculations from the American Community Survey

**Table 5-14: Business Formation Probabilities
Relative to White Males, Goods, 2013 - 2017**

Demographic Group	Probability of Forming a Business Relative to White Men
Black	-1.9%*
Hispanic	-0.8%
Native American	1.0%
Asian/Pacific Islander	3.0%***
Other	-2.1%
White Women	-0.5%

Source: CHA calculations from the American Community Survey

*** Indicates statistical significance at the 0.001 level

* Indicates statistical significance at the 0.05 level

**Table 5-15: Wage Differentials for Selected Groups
Relative to White Men, Goods, 2013 - 2017**

Demographic Group	Wages Relative to White Men (% Change)
Black	-34.1%***
Hispanic	-24.9%***
Native American	-14.0%
Asian/Pacific Islander	-41.7%***
Other	-34.9%**
White Women	-37.5%***

Source: CHA calculations from the American Community Survey

*** Indicates statistical significance at the 0.001 level

** Indicates statistical significance at the 0.01 level

**Table 5-16: Business Earnings Differentials for Selected Groups
Relative to White Men, Goods, 2013 - 2017**

Demographic Group	Earnings Relative to White Men (% Change)
Black	-16.3%
Hispanic	10.4%
Native American	----
Asian/Pacific Islander	-15.7%
Other	106.0%
White Women	-118.0%**

Source: CHA calculations from the American Community Survey

** Indicates statistical significance at the 0.01 level

5. The Services Industry in the State of Texas

Table 5-17 indicates that White men have higher business formation rates compared to Non-Whites and White Women. Table 5-18 indicates that Non-Whites and White Women are less likely to form businesses compared to similarly situated White men and four of the coefficients are statistically significant. Table 5-19 indicates that Non-whites and White women earn less than White men. Table 5-20 indicates that business earnings for Non-whites (except for Asian/Pacific Islanders) and White women are less than White men; three of the coefficients are statistically significant.

**Table 5-17: Business Formation Rates
Services, 2013 - 2017**

Demographic Group	Business Formation Rates
Black	2.0%
Hispanic	2.2%
Native American	4.1%
Asian/Pacific Islander	5.5%
Other	4.6%
White Women	3.7%
Non-White Male	2.9%
White Male	7.2%

Source: CHA calculations from the American Community Survey

**Table 5-18: Business Formation Probability Differentials for Selected Groups
Relative to White Men, Services, 2013 - 2017**

Demographic Group	Probability of Forming a Business Relative to White Men
Black	-3.5% ^{***}
Hispanic	-2.0% ^{***}
Native American	-1.0%
Asian/Pacific Islander	-1.0% [*]
Other	-0.4%
White Women	-1.9% ^{***}

Source: CHA calculations from the American Community Survey

^{***} Indicates statistical significance at the 0.001 level

^{*} Indicates statistical significance at the 0.05 level

**Table 5-19: Wage Differentials for Selected Groups
Relative to White Men, Services, 2013 - 2017**

Demographic Group	Wages Relative to White Men (% Change)
Black	-32.3%***
Hispanic	-23.5%***
Native American	-26.5%***
Asian/Pacific Islander	-28.3%***
Other	-36.3%***
White Women	-32.1%***

Source: CHA calculations from the American Community Survey
*** Indicates statistical significance at the 0.001 level

**Table 5-20: Business Earnings Differentials for Selected Groups
Relative to White Men, Services, 2013 - 2017**

Demographic Group	Earnings Relative to White Men (% Change)
Black	-31.3%*
Hispanic	-36.6%***
Native American	-15.3%
Asian/Pacific Islander	14.7%
Other	-101.0%
White Women	-56.4%***

Source: CHA calculations from the American Community Survey
*** Indicates statistical significance at the 0.001 level
* Indicates statistical significance at the 0.05 level

6. The Information Technology Industry in the State of Texas

There was only one Native American business observation and zero Others business observations; this impacted the ability to analyze firm activity for these groups. Table 5-21 indicates that White men have higher business formation rates compared to Non-Whites and White Women. Table 5-22 indicates that none of the coefficients were statistically significant. Table 5-23 indicates that Non-whites and White women earn less than White men and all

coefficients are statistically significant. Table 5-24 indicates that none of the coefficients were statistically significant.

**Table 5-21: Business Formation Rates
Information Technology, 2013 - 2017**

Demographic Group	Business Formation Rates
Black	2.2%
Hispanic	2.7%
Native American	1.2%
Asian/Pacific Islander	3.5%
Other	0.0%
White Women	2.9%
Non-White Male	2.9%
White Male	4.9%

Source: CHA calculations from the American Community Survey

**Table 5-22: Business Formation Probability Differentials for Selected Groups
Relative to White Men, Information Technology, 2013 - 2017**

Demographic Group	Probability of Forming a Business Relative to White Men
Black	-2.1%
Hispanic	-1.0%
Native American	-2.4%
Asian/Pacific Islander	-1.3%
Other	0.0%
White Women	-1.8%*

Source: CHA calculations from the American Community Survey

* Indicates statistical significance at the 0.05 level

**Table 5-23: Wage Differentials for Selected Groups
Relative to White Men, Information Technology, 2013 - 2017**

Demographic Group	Wages Relative to White Men (% Change)
Black	-27.7%***
Hispanic	-29.5%***
Native American	-44.3%**
Asian/Pacific Islander	-16.9%***
Other	-27.1%**
White Women	-25.6%***

Source: CHA calculations from the American Community Survey
 *** Indicates statistical significance at the 0.001 level
 ** Indicates statistical significance at the 0.01 level

**Table 5-24: Business Earnings Differentials for Selected Groups
Relative to White Men, Information Technology, 2013 - 2017**

Demographic Group	Earnings Relative to White Men (% Change)
Black	-172.0%
Hispanic	-89.7%
Native American	----
Asian/Pacific Islander	48.8%
Other	----
White Women	-31.6%

Source: CHA calculations from the American Community Survey

C. Disparate Treatment in the Marketplace: Evidence from the Census Bureau's 2012 Survey of Business Owners

Every five years, the Census Bureau administers the *Survey of Business Owners* ("SBO") to collect data on particular characteristics of businesses that report to the Internal Revenue Service receipts of \$1,000 or more.¹⁹⁷ The 2012 SBO was

197. See <http://www.census.gov/econ/sbo/about.html> for more information on the Survey.

released on December 15, 2015, so our analysis reflects the most current data available. The SBO collects demographic data on business owners disaggregated into the following groups:^{198,199}

- Non-Hispanic Blacks
- Latinos
- Non-Hispanic Native Americans
- Non-Hispanic Asians
- Non-Hispanic White Women
- Non-Hispanic White Men
- Firms Equally Owned by Non-Whites and Whites
- Firms Equally Owned by Men and Women
- Firms where the ownership could not be classified
- Publicly-Owned Firms

For purposes of this analysis, the first four groups were aggregated to form a Non-White category. Since our interest is the treatment of Non-White-owned firms and White Women-owned firms, the last five groups were aggregated to form one category. To ensure this aggregated group is described accurately, we label this group “not Non-White/Non-White Women”. While this label is cumbersome, it is important to be clear this group includes firms whose ownership extends beyond White men, such as firms that are not classifiable or that are publicly traded and thus have no racial ownership. In addition to the ownership demographic data, the Survey also gathers information on the sales, number of paid employees, and payroll for each reporting firm.

To examine those sectors in which TxDOT purchases, we analyzed economy-wide SBO data on the following sectors:

- Construction
- Professional, Scientific and Technical Services
- Goods
- Other services

198. Race and gender labels reflect the categories used by the Census Bureau.

199. For expository purposes, the adjective “Non-Hispanic” will not be used in this chapter; the reader should assume that any racial group referenced does not include members of that group who identify ethnically as Latino.

However, the nature of the SBO data – a sample of all businesses, not the entire universe of all businesses – required some adjustments. In particular, we had to define the sectors at the 2-digit North American Industry Classification System (“NAICS”) code level, and therefore our sector definitions do not exactly correspond to the definitions used to analyze TxDOT contract data in Chapter IV; for TxDOT’s contract data, we are able to determine sectors at the 6-digit NAICS code level. At a more detailed level, the number of firms sampled in particular demographic and sector cells was so small that the Census Bureau does not report the information, either to avoid disclosing data on businesses that can be identified or because the small sample size generates unreliable estimates of the universe.²⁰⁰ We therefore report 2-digit data.

Table 5-25 presents information on which NAICS codes were used to define each sector.

Table 5-25: 2-Digit NAICS Code Definition of Sector

SBO Sector Label	2-Digit NAICS Codes
Construction	23
Professional, Scientific, and Technical Services ^a	54
Goods	31,42, 44
Other Services	48, 52, 53, 56, 61, 62, 71, 72, 81

a. This sector includes (but is broader than just) construction-related services. It is impossible to narrow this category to construction-related services without losing the capacity to conduct race and gender specific analyses.

The balance of this Chapter section reports the findings of the SBO analysis. For each sector, we present data describing the sector and report disparities within the sector.

1. All Industries

For a baseline analysis, we examined all industries in the state of Texas. Table 5-26 presents data on the percentage share that each group has of the total of each of the following six business outcomes:

- The number of all firms
- The sales and receipts of all firms
- The number of firms with employees (employer firms)

200. Even with these broad sector definitions, there were many cases when the Census Bureau did not report information. In these cases, the value is entered into the table as “s”.

- The sales and receipts of all employer firms
- The number of paid employees
- The annual payroll of employer firms

Panel A of Table 5-26 presents data for the four basic Non-White racial groups:

- Black
- Latino
- Native American
- Asian

Panel B of Table 5-26 presents data for six types of firm ownership:

- Non-white
- White Women
- White Men
- Equally Non-Whites and Whites
- Equally women and men
- Firms that are publicly owned or not classifiable

Categories in the second panel are mutually exclusive. Hence, firms that are Non-White and equally owned by men and women are classified as Non-White and firms that are equally owned by Non-Whites and Whites and equally owned by men and women are classified as equally owned by Non-Whites and Whites.²⁰¹

201. Some of the figures in Panel B may not correspond to the related figures in Panel A because of discrepancies in how the SBO reports the data

**Table 5-26: Percentage Demographic Distribution of Sales and Payroll Data
All Industries, 2012**

	Total Number of Firms (All Firms)	Sales & Receipts - All Firms (\$1,000)	Number of Firms with Paid Employees (Employer Firms)	Sales & Receipts - All Firms with Paid Employees (Employer Firms) (\$1,000)	Number of Paid Employees	Annual payroll (\$1,000)
Panel A: Distribution of Non-White Firms						
Black	8.89%	0.32%	2.36%	0.22%	0.85%	0.49%
Latino	29.17%	2.51%	12.69%	1.92%	5.25%	3.53%
Native American	0.64%	0.08%	0.54%	0.07%	0.17%	0.13%
Asian	6.46%	1.72%	10.35%	1.60%	3.29%	2.18%
Panel B: Distribution of All Firms						
Non-White	45.42%	4.74%	26.27%	3.90%	9.71%	6.48%
White Women	16.39%	2.56%	12.98%	2.31%	5.00%	4.08%
White Men	29.87%	19.83%	42.92%	19.27%	26.19%	25.64%
Equally Non-White & White	1.07%	0.37%	1.74%	0.33%	0.78%	0.55%
Equally Women & Men	5.71%	1.96%	9.87%	1.80%	3.40%	2.67%
Firms Not Classifiable	1.50%	70.53%	6.11%	72.38%	54.89%	60.53%
All Firms	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%

Source: CHA calculations from Survey of Business Owners

Since the central issue is the possible disparate treatment of Non-White and White Women firms, Table 5-27 re-aggregates the last four groups—White men; equally Non-White and White; equally women and men; and firms not classifiable—into one group: Not Non-White/Not White Women.²⁰² We then present the shares each group has of the six indicators of firm utilization. These data were then used to calculate three disparity ratios, presented in Table 5-28:

202. Again, while a cumbersome nomenclature, it is important to remain clear that this category includes firms other than those identified as owned by White men.

- Ratio of sales and receipts share for all firms over the share of total number of all firms.
- Ratio of sales and receipts share for employer firms over the share of total number of employer firms.
- Ratio of annual payroll share over the share of total number of employer firms.

For example, the disparity ratio of sales and receipts share for all firms over the share of total number of all firms for Black firms is 3.62 percent (as shown in Table 5-28). This is derived by taking the Black share of sales and receipts for all firms (0.3 percent) and dividing it by the Black share of total number of all firms (8.9 percent) that are presented in Table 5-27. If Black-owned firms earned a share of sales equal to their share of total firms, the disparity would have been 100 percent. An index less than 100 percent indicates that a given group is being utilized less than would be expected based on its availability, and courts have adopted the Equal Employment Opportunity Commission’s “80 percent” rule that a ratio less than 80 percent presents a *prima facie* case of discrimination.²⁰³ All disparity ratios for Non-White firms and White Women firms are below this threshold.²⁰⁴

**Table 5-27: Demographic Distribution of Sales and Payroll Data – Aggregated Groups
All Industries, 2012**

	Total Number of Firms (All Firms)	Sales & Receipts - All Firms (\$1,000)	Number of Firms with Paid Employees (Employer Firms)	Sales & Receipts - All Firms with Paid Employees (Employer Firms) (\$1,000)	Number of Paid Employees	Annual payroll (\$1,000)
Panel A: Distribution of Non-White Firms						
Black	8.9%	0.3%	2.4%	0.2%	0.8%	0.5%
Latino	29.2%	2.5%	12.7%	1.9%	5.3%	3.5%
Native American	0.6%	0.1%	0.5%	0.1%	0.2%	0.1%

203. 29 C.F.R. § 1607.4(D) (“A selection rate for any race, sex, or ethnic group which is less than four-fifths (4/5) (or eighty percent) of the rate for the group with the highest rate will generally be regarded by the Federal enforcement agencies as evidence of adverse impact, while a greater than four-fifths rate will generally not be regarded by Federal enforcement agencies as evidence of adverse impact.”).

204. Because the data in the subsequent tables are presented for descriptive purposes, significance tests on these results are not conducted.

	Total Number of Firms (All Firms)	Sales & Receipts - All Firms (\$1,000)	Number of Firms with Paid Employees (Employer Firms)	Sales & Receipts - All Firms with Paid Employees (Employer Firms) (\$1,000)	Number of Paid Employees	Annual payroll (\$1,000)
Asian	6.5%	1.7%	10.4%	1.6%	3.3%	2.2%
Panel B: Distribution of All Firms						
Non-White	45.4%	4.7%	26.3%	3.9%	9.7%	6.5%
White Women	16.4%	2.6%	13.0%	2.3%	5.0%	4.1%
Not Non-White/Not White Women	38.2%	92.7%	60.7%	93.8%	85.3%	89.4%
All Firms	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%

Source: CHA calculations from Survey of Business Owners

**Table 5-28: Disparity Ratios of Firm Utilization Measures
All Industries, 2012**

	Ratio of Sales to Number of Firms (All Firms)	Ratio of Sales to Number of Firms (Employer Firms)	Ratio of Payroll to Number of Employer Firms
Panel A: Disparity Ratios for Non-White Firms			
Black	3.62%	9.17%	57.98%
Latino	8.58%	15.12%	67.30%
Native American	13.14%	13.30%	76.33%
Asian	26.66%	15.40%	66.34%
Panel B: Disparity Ratios for All Firms			
Non-Whites	10.43%	14.83%	66.76%
White Women	15.63%	17.76%	81.50%
Not Non-White/Not White Women	242.88%	154.50%	104.87%
All Firms	100.0%	100.0%	100.0%

Source: CHA calculations from Survey of Business Owners

This same approach was used to examine the construction, professional, scientific and technical services, goods, and other services sectors. The following are summaries of the results of the disparity analyses.

2. Construction

Of the 16 disparity ratios for Non-White firms and White Women firms presented in Table 5-29, 12 fall below the 80 percent threshold.

**Table 5-29: Disparity Ratios – Aggregated Groups
Construction, 2012**

	Ratio of Sales to Number of Firms (All Firms)	Ratio of Sales to Number of Firms (Employer Firms)	Ratio of Payroll to Number of Employer Firms
Panel A: Disparity Ratios for Non-White Firms			
Black	18.62%	s	s
Latino	19.51%	36.60%	67.00%
Native American	36.34%	32.06%	80.14%
Asian	47.90%	46.60%	90.44%
Panel B: Disparity Ratios for All Firms			
Non-White	20.48%	38.20%	69.89%
White Women	92.45%	49.52%	89.15%
Not Non-White/Not White Women	207.49%	123.24%	104.51%
All Firms	100.00%	100.00%	100.00%

Source: CHA calculations from Survey of Business Owners

3. Construction-Related Services

Of the 18 disparity ratios for Non-White firms and White Women firms presented in Table 5-30, 12 fall below the 80 percent threshold.

**Table 5-30: Disparity Ratios – Aggregated Groups
Professional, Scientific, and Technical Services, 2012**

	Ratio of Sales to Number of Firms (All Firms)	Ratio of Sales to Number of Firms (Employer Firms)	Ratio of Payroll to Number of Employer Firms
Panel A: Disparity Ratios for Non-White Firms			
Black	13.21%	26.05%	170.60%
Latino	24.81%	35.69%	179.04%
Native American	27.69%	24.04%	164.27%
Asian	49.37%	36.87%	223.08%
Panel B: Disparity Ratios for All Firms			
Non-White	27.84%	34.65%	193.44%
White Women	26.84%	30.53%	173.42%
Not Non-White/Not White Women	173.61%	135.71%	93.94%
All Firms	100.0%	100.0%	100.0%

Source: CHA calculations from Survey of Business Owners

4. Goods

Of the 18 disparity ratios for Non-White firms and White Women firms presented in Table 5-31, 15 fall below the 80 percent threshold.

**Table 5-31: Disparity Ratios – Aggregated Groups
Goods, 2012**

	Ratio of Sales to Number of Firms (All Firms)	Ratio of Sales to Number of Firms (Employer Firms)	Ratio of Payroll to Number of Employer Firms
Panel A: Disparity Ratios for Non-White Firms			
Black	1.83%	7.55%	82.29%
Latino	5.77%	11.74%	78.42%
Native American	9.02%	12.08%	102.45%
Asian	18.44%	9.97%	67.37%
Panel B: Disparity Ratios for All Firms			

	Ratio of Sales to Number of Firms (All Firms)	Ratio of Sales to Number of Firms (Employer Firms)	Ratio of Payroll to Number of Employer Firms
Non-White	7.96%	10.77%	73.97%
White Women	9.11%	14.51%	93.05%
Not Non-White/Not White Women	246.36%	160.74%	102.43%
All Firms	100.00%	100.00%	100.00%

Source: CHA calculations from Survey of Business Owners

5. Services

Of the 16 disparity ratios for Non-White firms and White Women firms presented in Table 5-32, 16 fall below the 80 percent threshold.

**Table 5-32: Disparity Ratios – Aggregated Groups
Services, 2012**

	Ratio of Sales to Number of Firms (All Firms)	Ratio of Sales to Number of Firms (Employer Firms)	Ratio of Payroll to Number of Employer Firms
Panel A: Disparity Ratios for Non-White Firms			
Black	8.2%	18.1%	s
Latino	16.7%	25.8%	64.3%
Native American	22.8%	22.6%	s
Asian	40.8%	23.6%	63.1%
Panel B: Disparity Ratios for All Firms			
Non-White	18.6%	24.2%	63.6%
White Women	24.7%	26.2%	72.9%
Not Non-White/Not White Women	261.6%	157.1%	108.9%
All Firms	100.0%	100.0%	100.0%

Source: CHA calculations from Survey of Business Owners

D. Evidence of Disparities in Access to Business Capital

Capital is the lifeblood of any business. Participants in the anecdotal data collection universally agreed to this fundamental fact. The interviews with business owners conducted as part of this Study confirmed that small firms, especially minority- and women-owned firms, had difficulties obtaining needed working capital to perform on TxDOT's contracts and subcontracts, as well as expand the capacities of their firms. As discussed above, discrimination may even prevent firms from forming in the first place.

There is an extensive body of scholarly work on the relationship between personal wealth and successful entrepreneurship. There is general consensus that disparities in personal wealth translate into disparities in business creation and ownership.²⁰⁵

The Federal Reserve Board and the U.S. Small Business Administration have conducted surveys of discrimination in the small business credit market for 1993, 1998 and 2003. These Surveys of Small Business Finances ("SSBF") are based on a large representative sample of firms with fewer than 500 employees. The main finding from these Surveys is that Blacks, Hispanics and Asians were more likely to be denied credit than Whites, even after controlling for firm characteristics like credit history, credit score and wealth. Blacks and Hispanics were also more likely to pay higher interest rates on the loans they did receive.²⁰⁶

A recent report to the U.S. Department of Commerce summarizes these Surveys, results from the Kauffman Firm Survey,²⁰⁷ data from the U.S. Small Business Administration's Certified Development Company/504 Guaranteed Loan Program²⁰⁸ and additional extensive research on the effects of discrimination on opportunities for MBEs. The most comprehensive report of its kind, "Disparities in Capital Access Between Minority and Non Minority-Owned Businesses: The Troubling Reality of Capital Limitations Faced by MBEs", found that

"Low levels of wealth and liquidity constraints create a substantial barrier to entry for minority entrepreneurs because the owner's wealth can be invested directly in the business, used as collateral to obtain business loans or use to acquire other businesses.... [T]he largest single

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205. See, e.g., Evans, David S. and Jovanovic, Boyan, "An Estimated Model of Entrepreneurial Choice under Liquidity Constraints," *Journal of Political Economy*, (1989); Evans, David S. and Leighton, Linda "Some empirical aspects of entrepreneurship," *American Economic Review*, (1989).
 206. See Blanchflower, D. G., Levine. P. and Zimmerman, D., "Discrimination In The Small Business Credit Market", *Review of Economics and Statistics*, (2003); Cavalluzzo, K. S. and Cavalluzzo, L. C. ("Market structure and discrimination, the case of small businesses," *Journal of Money, Credit, and Banking*, (1998).
 207. http://www.kauffman.org/~media/kauffman_org/research%20reports%20and%20covers/2013/06/kauffmanfirmsurvey2013.pdf.
 208. <http://www.sba.gov/category/navigation-structure/loans-grants/small-business-loans/sba-loan-programs/real-estate-and-eq>.

actor explaining racial disparities in business creation rates are differences in asset levels.²⁰⁹

Some of the key findings of the Report include:

- Minority-owned firms are less likely to receive loans than non minority-owned firms regardless of firm size. According to an analysis of data from the *Survey of Small Business Finances*, for firms with gross receipts over \$500,000, 52 percent of non minority-owned firms received loans compared to 41 percent of minority-owned firms.
- When minority-owned firms do receive financing, it is for less money and at a higher interest rate than non minority-owned firms regardless of the size of the firm. Minority-owned firms paid an average of 7.8 percent in interest rates for loans compared to 6.4 percent for non minority-owned firms. Among firms with gross receipts under \$500,000, minority-owned firms paid an average of 9.1 percent in interest rates compared to 6.9 percent for non minority-owned firms.
- Minority-owned firms are more likely to be denied loans. Among firms with gross receipts under \$500,000, loan denial rates for minority firms were about three times higher, at 42 percent, compared to those of non minority-owned firm, at 16 percent. For high sales firms, the rates of loan denial were almost twice as high for MBEs as for non-MBEs.
- MBEs pay higher interest rates for business loans.
- For all firms, MBEs paid 7.8 percent on average for loans compared with 6.4 percent for non-MBEs. The difference was smaller, but still high, between MBEs and non-MBEs with high sales.
- Minority-owned firms receive smaller equity investments than non-minority owned firms even when controlling for detailed business and owner characteristics. The differences are large and statistically significant. The average amount of new equity investments in minority-owned firms receiving equity is 43 percent of the average of new equity investments in non minority-owned firms. The differences were even larger for loans received by high sales firms. Yet, venture capital funds focusing on investing in minority firms provide returns that are comparable to mainstream venture capital firms.²¹⁰

209. Fairlie, R. W. and Robb, A., "Disparities in Capital Access Between Minority and Non Minority-Owned Businesses: The Troubling Reality of Capital Limitations Faced by MBEs", U.S. Department of Commerce, Minority Business Development Agency, 2010, pp. 22-23.

210. See Bates, T., "Venture Capital Investment in Minority Business," *Journal of Money Credit and Banking* 40, 2-3 (2008).

- Disparities in total investments in minority-owned firms compared to those in non-minority owned firms grew after the first year of business operations. According to the analysis of the data from the Kauffman Firm Survey, minority-owned firms' investments into their firms were about 18 percent lower in the first year of operations compared to those of
- non minority-owned firms. This disparity grew in the subsequent three years of operations, where minorities' investments into their firms were about 36 percent lower compared to those of non minority-owned firms.

Minority entrepreneurs face challenges (including lower family wealth and difficulty penetrating financial markets and networks) directly related to race that limit their ability to secure financing for their businesses.²¹¹ This strongly suggests that MBEs do not enjoy full and fair access to the credit necessary to perform on TxDOT's prime contracts and associated subcontractors.

E. Evidence of Disparities in Access to Human Capital

There is a strong intergenerational correlation with business ownership. The probability of self-employment is significantly higher among the children of the self-employed. This was evident in the large number of non M/WBEs we interviewed who were second or even higher generation firms doing business in the market area. This disadvantages minorities, whose earlier generations were denied business ownership through either *de jure* segregation or *de facto* exclusion.

There is evidence that current racial patterns of self-employment are in part determined by racial patterns of self-employment in the previous generation.²¹² Black men have been found to face a "triple disadvantage". They are less likely than White men to:

- Have self-employed fathers;
- Become self-employed if their fathers were not self-employed; and
- To follow their fathers into self-employment.²¹³

Intergenerational links are also critical to the success of the businesses that do form.²¹⁴ Working in a family business leads to more successful firms by new own-

211. Fairlie, R.W. and Robb, A., *Race and Entrepreneurial Success: Black-, Asian- and White-Owned Businesses in the United States*, (Cambridge: MIT Press, 2008).

212. Fairlie, R.W., "The Absence of the African American Owned Business, An Analysis of the Dynamics of Self-Employment," *Journal of Labor Economics*, (1999).

213. Hout, M. and Rosen, H. S., "Self-employment, Family Background, and Race," *Journal of Human Resources* 35, no.4 (2000).

214. Fairlie, R.W. and Robb, A., "Why are black-owned businesses less successful than White-owned businesses? The role of families, inheritances, and business human capital," *Journal of Labor Economics*, (2007).

ers. One study found that only 12.6 percent of Black business owners had prior work experiences in a family business as compared to 23.3 percent of White business owners.²¹⁵ This creates a cycle of low rates of minority ownership and worse outcomes being passed from one generation to the next, with the corresponding perpetuation of advantages to White-owned firms.

Similarly, unequal access to business networks reinforces exclusionary patterns. The composition and size of business networks are associated with self-employment rates.²¹⁶ The U. S. Department of Commerce has reported that the ability to form strategic alliances with other firms is important for success.²¹⁷ M/WBEs in our interviews reported that they felt excluded from the networks that help to create success in the highway construction industry.

215. *Id.*

216. Allen, W. D., "Social Networks and Self-Employment," *Journal of Socio-Economics* 29, no.5 (2000).

217. Increasing MBE Competitiveness through strategic Alliances (Minority Business Development Agency, 2008).

VI. QUALITATIVE EVIDENCE OF RACE AND GENDER BARRIERS IN THE TEXAS DEPARTMENT OF TRANSPORTATION'S MARKET

In addition to quantitative data, a disparity study should further explore anecdotal evidence of experiences with discrimination in contracting opportunities and the Texas Department of Transportation's ("TxDOT") Disadvantaged Business Enterprise ("DBE") and Historically Underutilized Business ("HUB") programs. This evidence is relevant to the question of whether observed statistical disparities in its locally funded contracts are due to discrimination and not to some other non-discriminatory cause or causes, as well as the likely efficacy of any race- and gender-neutral remedies employed by TxDOT for all its contracting opportunities. As discussed in Chapter II, this type of anecdotal data has been held by the courts to be relevant and probative of whether TxDOT continues to have a need to use narrowly tailored DBE and HUB contract goals to remedy the effects of past and current discrimination, and create a level playing field for contract opportunities for all firms.

The Supreme Court has held that anecdotal evidence can be persuasive because it "brought the cold [statistics] convincingly to life."²¹⁸ Evidence about discriminatory practices engaged in by prime contractors, agency personnel, and other actors relevant to business opportunities has been found relevant regarding barriers both to minority firms' business formation and to their success on governmental projects.²¹⁹ While anecdotal evidence is insufficient standing alone, "[p]ersonal accounts of actual discrimination or the effects of discriminatory practices may, however, vividly complement empirical evidence. Moreover, anecdotal evidence of a [government's] institutional practices that exacerbate discriminatory market conditions are [sic] often particularly probative."²²⁰ "[W]e do not set out a categorical rule that every case must rise or fall entirely on the sufficiency of the numbers. To the contrary, anecdotal evidence might make the pivotal difference in some cases; indeed, in an exceptional

218. *International Brotherhood of Teamsters v. United States*, 431 U.S. 324, 399 (1977).

219. *Adarand Constructors, Inc. v. Slater*, 228 F.3d 1147, 1168-1172 (10th Cir. 2000), *cert. granted*, 532 U.S. 941, *then dismissed as improvidently granted*, 534 U.S. 103 (2001).

220. *Concrete Works of Colorado, Inc. v. City and County of Denver*, 36 F.3d 1513, 1120, 1530 (10th Cir. 1994).

case, we do not rule out the possibility that evidence not reinforced by statistical evidence, as such, will be enough.”²²¹

There is no requirement that anecdotal testimony be “verified” or corroborated, as befits the role of evidence in legislative decision-making, as opposed to judicial proceedings. “Plaintiff offers no rationale as to why a fact finder could not rely on the state’s ‘unverified’ anecdotal data. Indeed, a fact finder could very well conclude that anecdotal evidence need not—indeed cannot—be verified because it ‘is nothing more than a witness’ narrative of an incident told from the witness’ perspective and including the witness’ perception.”²²² Likewise, the Tenth Circuit held that “Denver was not required to present corroborating evidence and [plaintiff] was free to present its own witnesses to either refute the incidents described by Denver’s witnesses or to relate their own perceptions on discrimination in the Denver construction industry.”²²³

To explore this type of anecdotal evidence of possible discrimination against minorities and women in TxDOT’s geographic and industry markets and the effectiveness of its current race-conscious and race-neutral measures, we conducted 41 public, business owner and stakeholder interviews with 507 participants across the state of Texas. We met with a broad cross section of business owners from TxDOT’s geographic and industry markets. Firms ranged in size from large national businesses to established family-owned firms to new start-ups. We sought to explore their experiences in seeking and performing public and private sector prime contracts and subcontracts with TxDOT, other government agencies, and in the private sector. We also elicited recommendations for improvements to TxDOT’s DBE and HUB Programs.

Many minority and women owners reported that while some progress has been made in integrating their firms into transportation contracting activities through the DBE and HUB programs, significant barriers remain. Race- and gender-neutral approaches alone were described as unlikely to ensure a level playing field for TxDOT contract opportunities.

We also conducted two electronic surveys of stakeholder organizations and firms in TxDOT’s market area about their experiences in obtaining work, marketplace conditions and the agency’s contracting equity programs. The results were similar to those of the interviews. Thirty-five percent reported they still experience barriers to equal contracting opportunities; almost a quarter said their competency was questioned because of their race or gender; and almost 30 percent indicated less access to business networks and information than non-M/WBE firms.

221. *Engineering Contractors Association of South Florida, Inc. v. Metropolitan Dade County*, 122 F.3d 895, 926 (11th Cir. 1997).

222. *H.B. Rowe Co., Inc. v. Tippett*, 615 F.3d 233, 249 (4th Cir. 2010).

223. *Concrete Works*, 321 F.3d at 989.

A. Business Owner Interviews

The following are summaries of the issues discussed. Quotations are indented and may have been shortened for readability. The statements are representative of the views expressed over the many sessions by numerous participants.

Many minority and female owners reported that they still suffer from biased assumptions and negative stereotypes about their skills and capacities. While sometimes subtle,²²⁴ these biases about minorities' and women's lack of competence or executive status affect all aspects of their attempts to obtain contracts and to be treated equally in performing contract work.

Several minority owners experienced a stigma in being labeled a "minority" or a "woman" firm.

I try not to use my accent. And treatment is completely different, completely different [if they think I am White].

To have those sort of set asides goes against the culture of the company that the owner has tried to make, which is she never wants to be known as a really good woman-owned firm. She wants to be known as a very good engineering firm. So, every single day we try to figure out if we're going to go after three things today, how do we make sure we're going after them as a good prime, and not as a woman-owned? Not to say that we don't have to rely on it sometimes, just to keep the doors open and keep people fed.

You also have an issue trying to overcome the impression from people sometimes that a woman-owned business is only woman-owned in name [only].

The transportation industry is still overwhelmingly White and male, and many minority and women owners believe this hampers their ability to succeed.

If you look at all the large firms or people in authority, they're still predominately not minority.

If this [White] gentleman and I do the exact same thing, they're gonna talk to him first. Never have met him. It could be his first [TxDOT procurement] fair. It could be my 152nd. But because he's a man, they're gonna say, 'hey'. And it has nothing to do with experience or know-how. It's very good old boy.

224. See, e.g., <http://www.sciencedirect.com/science/article/pii/S0191308509000239>.

The engineering firms primarily has male engineers. So, you go to different networking events, you have to be in the male-dominant type situation.

The transportation industry as a whole is dominated by the civil engineers which typically the folks graduating in civil engineering are white men. You have a very low proportion of women and minorities with those degrees. Inherently, then in the workplace, you're seeing very low amounts of diversity. Same things in environmental services. You don't get a lot of women who are wildlife biologists. Someone with that type of experience typically has been hunting and fishing with his father and his grandpa their entire lives and they have a good old boys club. They go drinking, they go fishing, they go playing golf.

[Construction is] a male dominated field.... It's changing and you have more female project managers.

I was at the PEPS conference the week after Thanksgiving this year, and you look at the faces in the room with hundreds of people and they are dominated by older White gentlemen that will look at someone like me and someone told me, after speaking with them, I introduced myself and they told me I was smarter than I looked.... An older white gentleman sat down next to me and was interested that I was there taking notes and asked if I was taking notes for my boss.

I don't want to get a reputation for being a girl who hangs out in a bar [to network with my male peers]. What guy's worried about that?

Many women had experienced unfair treatment or sexual harassment in their work environments.

I still do find the initial contact with specifically a general contractor, there is somewhat that attitude of you're a woman, let me tell you how to do this.

You get a lot of that. You're a woman, pat you on the head and say it's nice that you came today. Then all the sudden they'll be over there doing their thing and you sit there and hear what they're saying. You're like that's not gonna be to code buddy and good luck with that. They look at you like how do you know that? This is my job to know those things.

Sometimes I get statements like, "Are you sure you can do the work?"

[We have thought] we need to maybe hire an Anglo male blonde guy wearing a suit.

We get the little, "You're so cute. You want to be a distributor. You want to play with the big boys. Wow, it's so cute. Why don't you just move along little girls?"

I've dealt with [TxDOT staff] that just thought I was dumb as dirt because I'm a woman, but this was a woman.

We have [male] going there and offer services or something and as soon as my mom steps in, the buy completely changes. You can tell in their face, when they see [a Latina] they're like, "For real?"... And then [TxDOT staff] would turn around and start talking to me [as a male] when she was talking. They didn't believe she was involved. At the beginning, that happened to us when we started working with TxDOT. But now a few of the inspectors already know her so you know. But at the beginning, that would happen a lot and it would be a big problem.

I have offered to go out and market more for the company and ... and some guys that were sitting in the back, they said, "Well, we really need somebody very young and pretty and dresses very nice to go out and market, 'cause they get the attention." "Excuse me?" I think I can do a good job marketing, but I ... don't meet those qualifications.

[I'm called] sugar britches. But I laugh about that. That's the city of Austin guy, he sends me lots of work. He's not saying it to be ugly, it's like "Hey, sug." I'm used to that because I was raised here. You know it isn't to me, I don't care about that because if it's not meant to be mean, it's just who he is. If he were to say, "Because you're a woman, now, you don't have this that the other. That's not what he's saying, he's saying can you come do this level blah, blah, blah sugar britches is fine. I could care less.... What's more scarier to me is the cloak and dagger stuff where they say they're doing this and you're still not getting the contract. It's still the old boys network. That to me is a more dangerous prejudice.

A White man commented that he sees gender bias in the highway business.

[As a White male,] I have the luxury of never having been exposed to stuff that maybe my daughters have been exposed to, or maybe the owner of the company has been exposed to.... I can suspect [discrimination], but I just can't see it, so I can't say it.

Some women downplayed the impact of gender discrimination.

I don't deal with harassment or discrimination anymore [as a White woman]. I've made my name in the business....

I'm not one to scream [sexism]. I mean, I deal with it in my own way. But if it does happen, it will be [something like] I answer the phone a lot in our office. We're a small office and someone will call an inspector, someone will assume I'm just the secretary, and then they'll ask to speak to like if they've been dealing with my project manager who's a male, they'll ask to speak to him rather than speak to me. And that's generally that kind of thing of when I see it, but honestly, I can't say that it's a problem.... I think you have to be strong, I think you have to know your product, you have to know what you're doing.... As long as you do what you're supposed to, follow the rules, document, and use the proper chain of command, and have confidence in what you're doing, you shouldn't have a lot of issues.

I really haven't encountered any barriers [as a White woman]. And as far as experience with TxDOT, I have found them to be very respectful and good to work with. So, I don't have any issues with that.

Racism or gender, that's not a problem anymore.... Overall, I can't say we've had issues with TxDOT.

Certified firms reported that becoming certified as a DBE helped to reduce these barriers.

The DBE aspect for our company has been a huge advantage for us... because of these goals and these contracts, it's given us the opportunity to take on a lot of that work.

We definitely get more work or partnerships because we are certified. On other solicitations where it's not asked, we're not going to be on as many teams as we are for TxDOT.

Had I not been minority certified through DBE, these emails would not have come over my computer.

I think the program is important. I think it definitely is a plus.

Several DBEs rejected the notion that a race- and gender-neutral approach would ameliorate their burdens.

[An] all race-neutral program, I don't agree to with that.

Translates to the good old boy [network].

Longstanding relationships in the highway industry that predate the opening of access to minorities and women continue to hamper DBE opportunities.

And if you're not a DBE or HUB or SBE, you're not going to be considered for any work as a consultant for TxDOT because they're

going to use these legacy firms for most of their work on the consulting side.

The industry is about relationships so when you don't have those relationships, it's an act of God to just build that. And it takes a long time to build the trust because there's so much risk. If we didn't have those goals as a DBE program, they would never give us the time of day. Ever.

The reason why they do have the participation is because it's required.

Some of them, we over a period of time have built a really good relationship with and they look at us as a great partner so it's not just about checking the box, but there are those that use the minority firms only when they have to because there's a requirement.

A few White women and one minority man disagreed that race or gender remain barriers to full and fair opportunities in the highway industry; they had not found sexism or racism to be an issue.

As far as the minority part of it, we hadn't run into that as of yet.

I don't think people [are] discriminating [against] me, in terms of my gender or my race.

I think El Paso's pretty [fair]... I haven't seen any racism or anything like that or favoritism.

B. Anecdotal Surveys

To supplement the in-person interviews, we also conducted two electronic surveys, one among stakeholder organizations that represent DBEs in the heavy highway industry, and another one among firms on our Master Business List. Eighteen organizations that represent or advocate for minority, women or disadvantaged businesses participated in the Stakeholder survey, and 420 minority- and women-owned firms completed the Business Owner Survey. Results of the two surveys paint a similar picture.

1. Business Owner Survey

a. Respondents' profiles

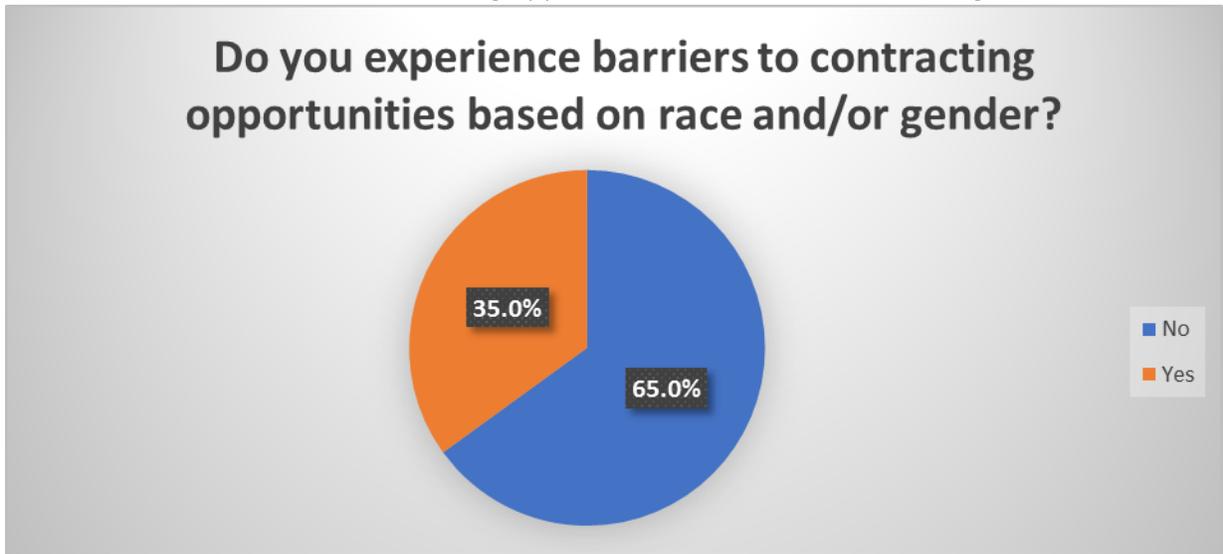
Only 10.2 percent of the firms had worked on TxDOT projects just as a prime contractor/consultant; 26.7 percent had worked only as a subcontractor; 17.4 percent had worked as both a prime contractor/consultant and as a subcontractor/subconsultant or supplier; and 45.7 percent had

not done business on any TxDOT contracts. Almost 96 percent of the firms responding were DBE or HUB certified.

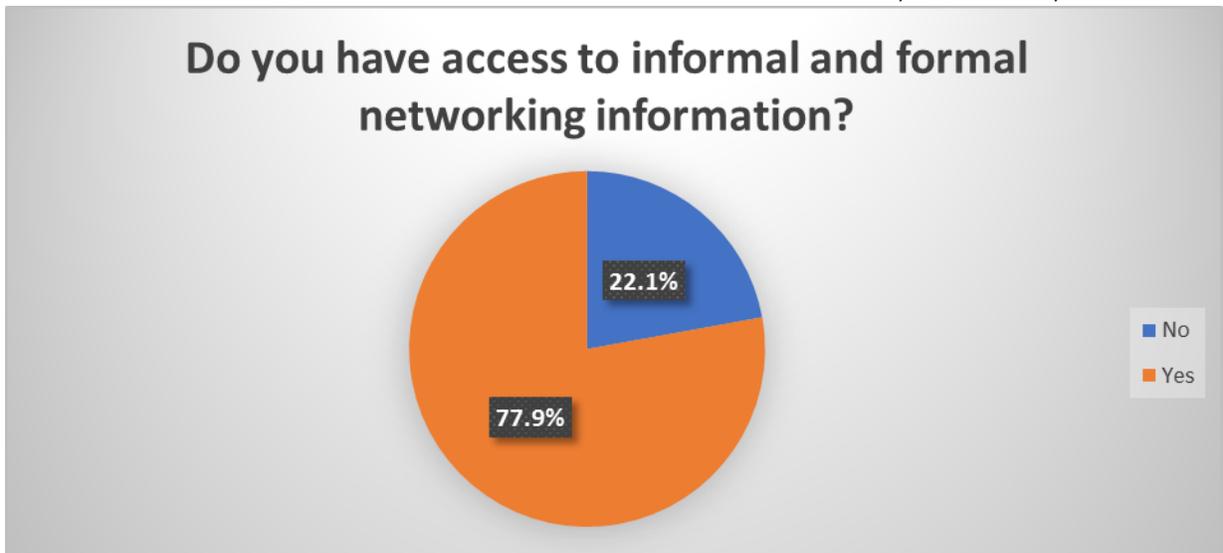
b. Responses

These respondents reported the following experiences.

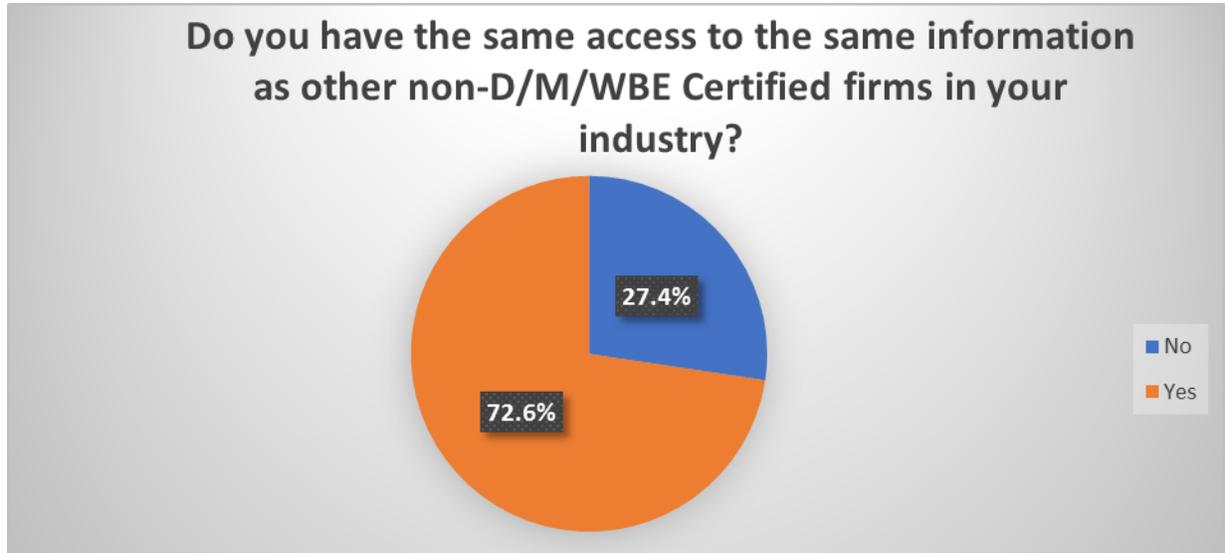
Thirty-five percent answered yes to the question, “Do you experience barriers to contracting opportunities based on race and/or gender?”



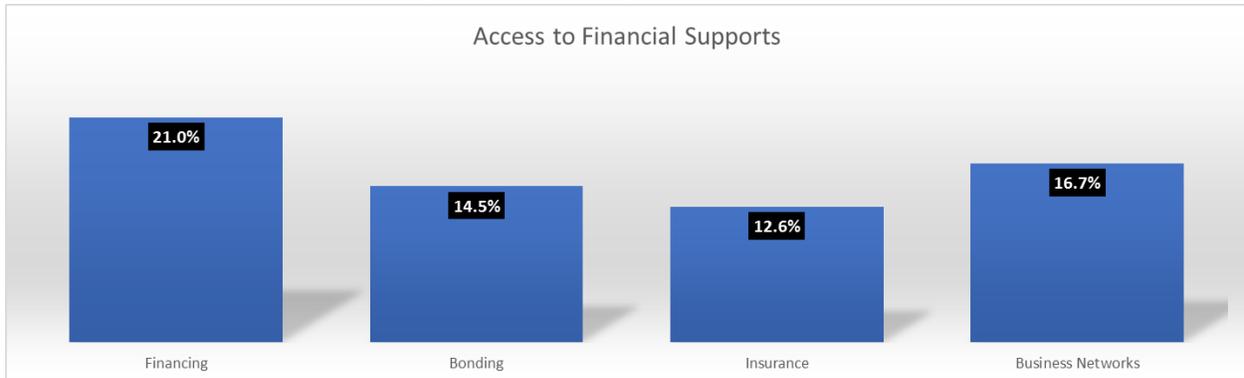
Almost 25 percent answered no to the question “Do you have access to informal and formal networking information and have the same access to the same information as other non-DBE firms in your industry?”



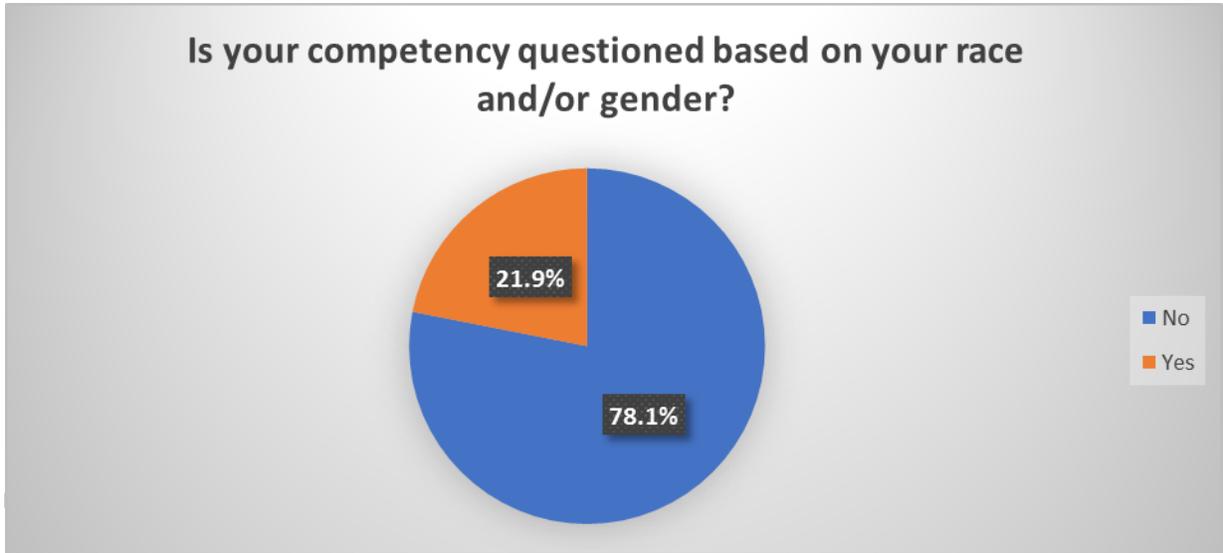
Almost 28 percent said they do not have access to the same information as non-D/M/WBEs.



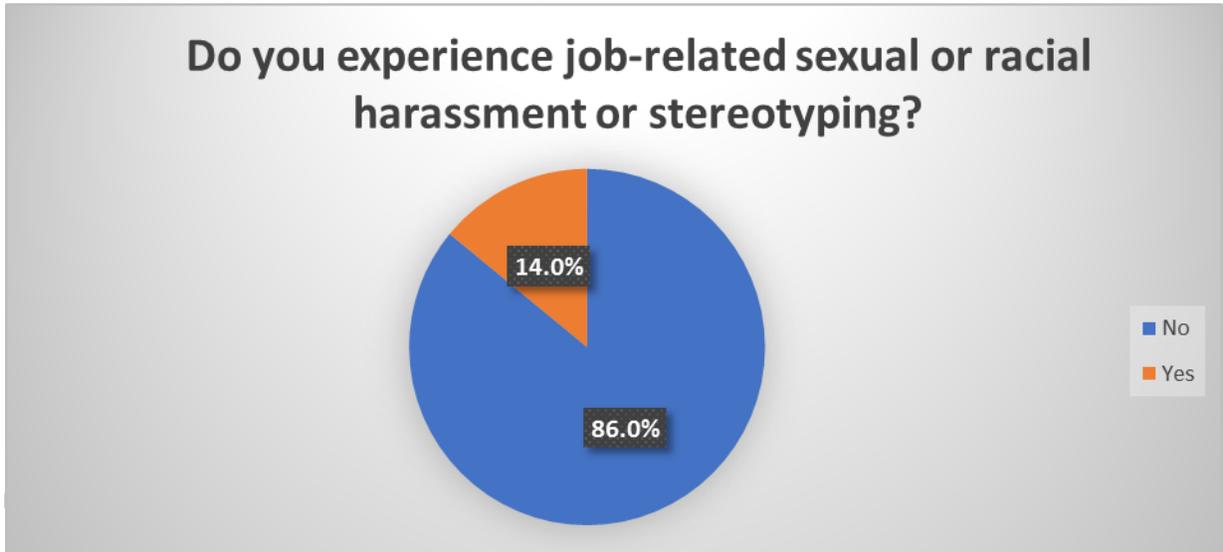
Twenty-one percent reported that they have unequal access to financing; 14.5 percent reported that they have unequal access to surety bonding services; 12.6 percent reported unequal access to insurance; and almost 17 percent reported that they have unequal access to business networks.



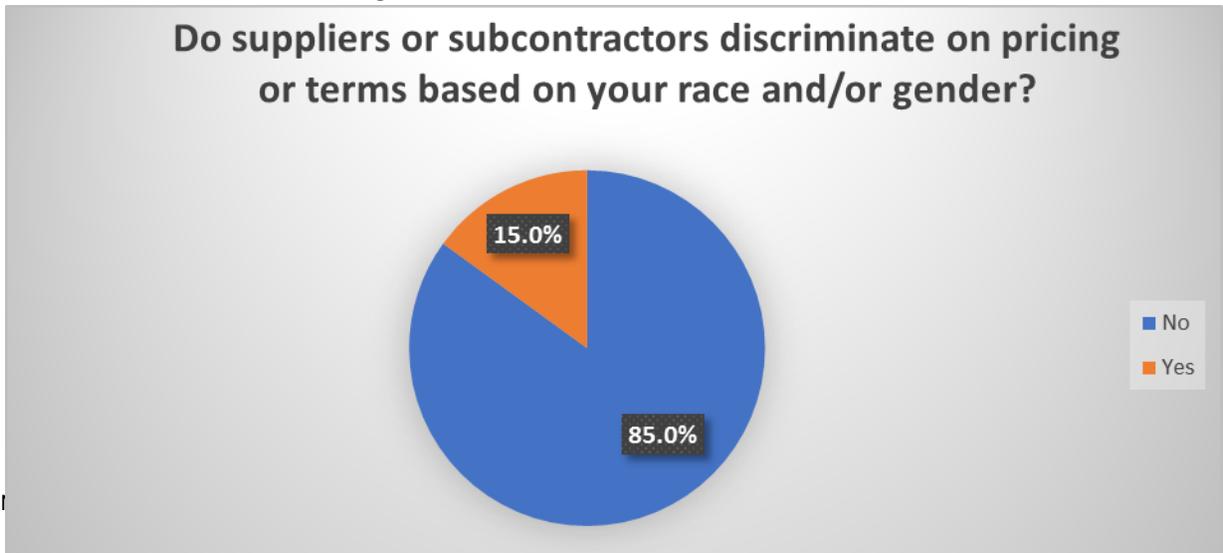
More than 20 percent answered yes to the question, “Is your competency questioned based on your race and/or gender?”



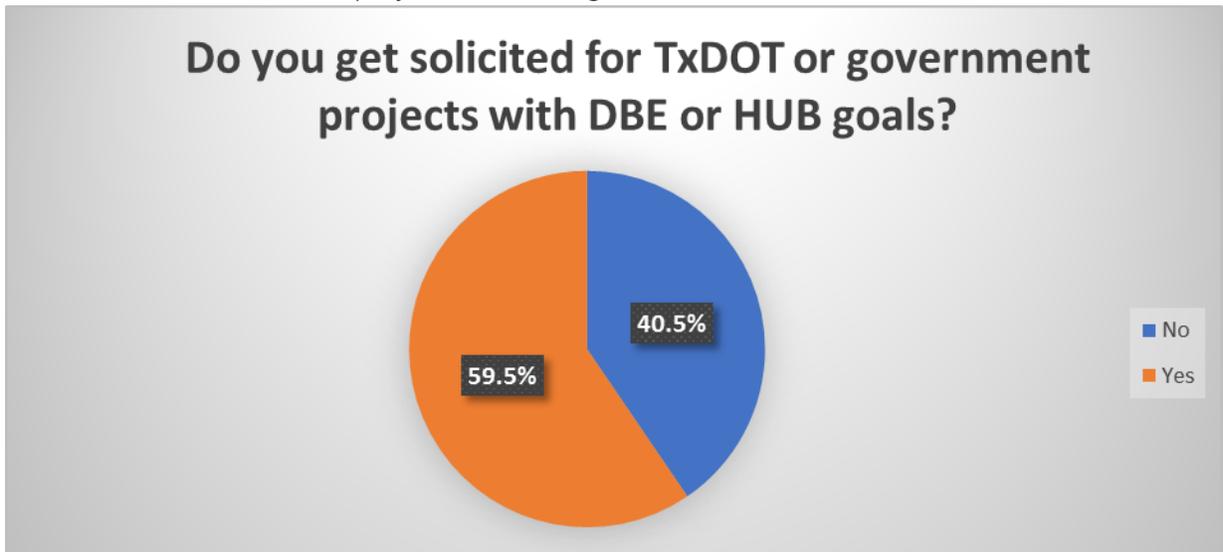
Fourteen percent said they experienced job-related sexual or racial harassment or stereotyping.



Fifteen percent reported discrimination on pricing or terms based on race and/or gender.



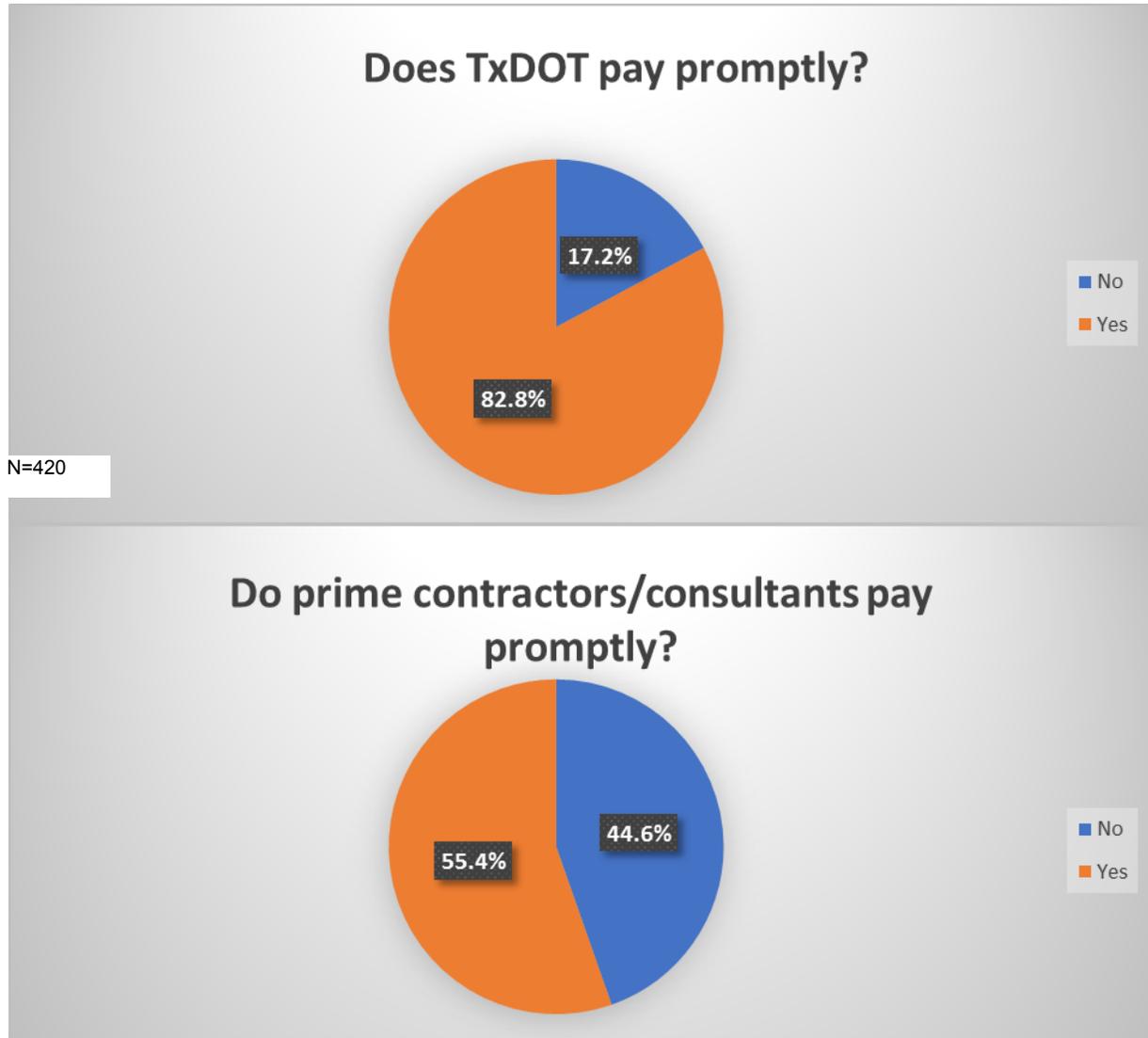
Almost 60 percent reported that they are solicited for TxDOT or government projects with DBE goals.



1. But only 50 percent reported they are solicited for private projects and projects without DBE goals.



Seventeen percent of those with TxDOT work stated that TxDOT does not pay them promptly, and almost 45 percent said prime contractors/consultants did not pay them promptly.



c. Other Survey Results

Sixty-five percent indicated that they had not participated in supportive services or technical assistance programs.

- 8.1 percent had participated in financing or loan programs;
- 6.9 percent had accessed bonding support programs;
- 19.0 percent had participated in a mentor-protégé program or relationship;

- 10.7 percent had received support services such as assistance with marketing, estimating, information technology, etc.; and
- 12.1 percent had joint ventured with another firm.

Open-ended comments from at least 202 respondents were consistent with information provided in the business owner interviews. Most responses centered on barriers to getting TxDOT work. They also included suggestions for improvement:

- Access to capital and financial support services were cited as big barriers.
- The perception that fair opportunities were unavailable was a recurring theme.
- Subtle and overt stereotyping and racial and gender discrimination were mentioned as commonplace.
- The lack of networking and relationship-building opportunities were cited as obstacles.
- Better and more focused networking in general and with prime contractors in particular, along with better communication about bid and contracting opportunities, were suggested.
- Unbundling of large contracts was cited by many as a way to allow smaller firms to take on prime contracts and make more opportunities available to smaller firms in general.
- Partnering and access to a Mentor-protégé program were considered very important for increasing opportunities
- Faster payment by both TxDOT and prime contractors was recommended to promote better cash flow.
- Set asides and increased goal percentages on TxDOT contracts were thought to be crucial for generating opportunities for D/M/WBEs.
- Improvement of the graduation process was suggested to reduce the strain on graduating firms.

2. Stakeholder Survey

The 18 stakeholder groups reported the following:

- 61 percent said their members lacked access to business networks.
- 50 percent said the competency of their members are questioned.

- 61 percent said their members lacked equal access to financing, bonding and insurance resources.

The open-ended comments primarily focused on TxDOT contracting requirements, biases found in the market and slow payments by prime contractors.

I believe that our local businesses are not considered "sophisticated" enough to bid on large contracts. Local businesses have literally said this to our contracting clients. Their bonding is not considered adequate. Their experience is not considered substantial enough.

Yes, our clients need training on [the] program reporting requirement.

Women aren't perceived as equal in construction, which is a male dominated industry. The disparity is getting narrower but women only make up 8-10 percent of the construction workforce. Only 2-3 percent in the trades.

Despite the many requirements TxDOT has for prompt payment to subs, some primes are slow to pay. Not sure how they get away with not meeting TxDOT requirements.

C. Conclusion

Consistent with other evidence reported in this Study, the anecdotal interviews and the survey results strongly suggest that minorities and women continue to suffer discriminatory barriers to full and fair access to contracts and associated subcontracts in TxDOT's market area. While not definitive proof that TxDOT needs to continue to implement race- and gender-conscious remedies for these impediments, the results of the qualitative data are the types of evidence that, especially when considered in conjunction with the numerous pieces of statistical evidence assembled, the courts have found to be highly probative of whether TxDOT would be a passive participant in a discriminatory market area without affirmative interventions and whether race-conscious remedies are necessary to address that discrimination.

VII. RECOMMENDATIONS FOR THE TEXAS DEPARTMENT OF TRANSPORTATION'S BUSINESS DIVERSITY PROGRAMS

The quantitative and qualitative data in this study provide a thorough examination of the evidence of the experiences of minority- and women-owned firms in the Texas Department of Transportation's ("TxDOT" or "Department") geographic and industry markets. As required by strict constitutional scrutiny and the regulations governing the U.S. Department of Transportation's ("USDOT") Disadvantaged Business Enterprise ("DBE") program for Federal Highway Administration ("FHWA")²²⁵ and Federal Aviation Administration ("FAA") contracts,^{226, 227} we analyzed evidence of DBE, Minority-Owned Business Enterprise ("MBE"), and Woman-Owned Business Enterprise ("WBE") (collectively, ("D/M/WBE") utilization by TxDOT as measured by dollars spent. We also examined data for TxDOT's program for Historically Underutilized Businesses ("HUBs") applicable to contracts funded only with state dollars.²²⁸ We next estimated the availability of D/M/WBEs and HUBs in the Department's markets in the aggregate and by funding source and detailed industry code. We then compared TxDOT's utilization of HUBs to the availability of all ready, willing and able firms in its markets to calculate whether there are disparities between utilization and availability for non-USDOT funded contracts.

We further solicited anecdotal or qualitative evidence of D/M/WBEs' and HUBs' experiences in obtaining contracts and concession opportunities in the public and private sectors. TxDOT staff also provided extensive input about the operations of the programs and suggestions for enhancements. These results provide the Department with the evidence necessary to narrowly tailor its DBE program for USDOT-funded contracts as required by 49 C.F.R. Part 26 and 49 C.F.R. Part 23 and the HUB program for state funded contracts. Based upon these findings, we make the following recommendations.

225. 49 C.F.R. Part 26.

226. 49 C.F.R. Part 23.

227. TxDOT's Public Transportation Division chose not to participate in this study.

228. Title 34, § 20.281 of the Texas Administrative Code, and § 2161.181 and §2161.18 of the Local Government Code.

A. Enhance Race- and Gender-Neutral Measures

The courts and the DBE program regulations require that agencies use race-neutral²²⁹ approaches to the maximum feasible extent to meet the annual DBE goals for federal transportation contracts and for all state funded contracts subject to a business diversity program. This is a critical element of narrowly tailoring the programs, so that the burden on non-D/M/WBEs is no more than necessary to achieve the Department’s remedial purposes. Increased participation through race-neutral measures by D/M/WBEs and HUBs on all contracts regardless of funding source will also reduce the need to set contract goals.

There was general agreement that TxDOT’s civil rights function needs more staff resources. Personnel at the other Divisions and the Districts also would benefit from more support dedicated to the programs. Personnel are stretched thin, resulting in inconsistent interpretations, delays in addressing issues for both DBEs and prime contractors, and increased reliance on outside consultants who are often reported to be inexperienced in TxDOT policies and processes. The more rural and far flung districts in particular requested more support. Few of the recommendations that follow will be feasible without more resources.

1. Increase Contract “Unbundling”

The size and complexity of the Department projects is a disincentive to small firms to seek TxDOT contracts. Unbundling projects, providing longer lead times and simplifying requirements would assist smaller businesses to take on some Department work. Maintenance type contracts- which currently are not eligible for contract goal setting- could be a focus. While it may often be more convenient for staff to bundle services into large contracts, these types of locally performed projects can present opportunities for firms too small to move beyond their immediate geographic area to do TxDOT work. In conjunction with reduced insurance and bonding requirements where possible, unbundled contracts should further support smaller firms’ ability to move from quoting solely as subcontractors to bidding as prime contractors. Smaller contracts will also help small subcontractors to obtain contracts. Unbundling must be conducted, however, within the constraints of the need to ensure efficiency and limit costs to taxpayers.

2. Expand Technical Assistance Services

Many business owners and representative requested additional training for DBEs on the intricacies of doing business with TxDOT. While the Department provides extensive supportive services programs, offerings such as webinars or

229. The term race-neutral as used here includes gender-neutrality, as defined in 49 C.F.R. §5.

videos on how to do business with the agency, correct invoicing and other day-to-day concerns was requested, especially for firms located outside the major metropolitan areas and in West Texas. Topics such as “You’re DBE Certified. Now what?” and “Moving from Subcontractor to Prime Contractor” would be helpful, especially to new market entrants. Several DBEs also recommended training or easy to access information on the functions of the Civil Rights Division and how to seek help, including filing discrimination complaints under Title VI of the Civil rights Act of 1964.

3. Develop “Unremediated Markets” Data

We urge TxDOT to bid some contracts that it determines have significant opportunities for DBE participation without goals. These “control contracts” can illuminate whether certified firms are used or even solicited in the absence of goals. “Unremediated markets” data are one of the types of evidence courts have held to be probative of whether contract goals remain needed to level the playing field for minorities and women.

4. Review DBE Program Policies and Procedures

The DBE program operates well, as a general matter. We suggest some revisions, however, based on the feedback of business owners and staff and national best practices.

There was close to universal agreement that the procedure for counting dollars spent with certified truckers needs to be reviewed. Under the current system, many general contractors do not use DBE truckers or do not report the participation of those they do use because of the paperwork burdens and other difficulties. Perhaps the Department can appoint an informal group of staff, trade group representatives, prime contractors and DBEs to explore how to address this issue.

Another common complaint was the lack of consistency in program interpretation and administration between districts, and between TxDOT and some of its outside construction management firms. Regular training, perhaps presented via webinar or videos, would help to address this issue. While the various handbooks that TxDOT has produced provide comprehensive information, it appears that not all parties are familiar with the policies and procedures. A more direct approach using visual learning tools should be developed.

5. Enhance Contract Data Collection

TxDOT is a large and complex organization. When its subrecipients are included in the system, the challenges of full and accurate data collection are

magnified. Based on our experiences collecting contract records for this Report, we suggest the following:

- All divisions must track all subcontracting activities. This includes the participation of non-certified firms. The lack of records pertaining to subcontractors required us to contact the prime vendors in order to obtain the needed data for the study. Subcontractor information is also necessary for the ongoing contractual requirement that subcontractors be paid promptly. The installation of the DMS system is a major improvement, but all districts, divisions and subrecipients must fully participate in order for the system to be used to its full potential as a record keeping and program monitoring tool.
- Conduct ongoing and follow up training on how to use the system for TxDOT personnel, prime contractors and subcontractors.
- Collect the data required under 49 C.F. R. §26.11 to create an overall TxDOT bidders list from the prime contractors and their subcontractors and report the results to the Civil Rights Division.

6. Provide Additional Training to TxDOT's Recipient Agencies

As the direct recipient of FHWA finds, TxDOT is responsible for the administration of the DBE program for its subrecipients.²³⁰ In gathering and analyzing contract records and in interviews with business owners and TxDOT staff, it became apparent that many recipients are unclear about the program's requirements and/or are not keeping records that are relevant to conducting a disparity study and complying with the DBE program's record keeping. We therefore suggest TxDOT conduct regular training for its subrecipients to ensure program compliance and adherence to best practices.

B. Continue to Implement a Narrowly Tailored DBE Program

1. Use the Study to Set the Triennial DBE Goal

49 C.F.R. Part 26 requires TxDOT to engage in a two-step process to set a triennial goal for DBE participation in its federally funded projects. To determine the Step 1 base figure for the relative availability of DBEs required by § 26.45(c), we suggest the Department use the DBE unweighted availability findings for USDOT-funded contracts.²³¹

230. 49 C.F.R. § 26.5 and § 26.37(a).

Section § 26.45(d) requires the Department to perform a Step 2 analysis. TxDOT must consider whether to adjust the Step 1 figure to reflect the effects of the DBE program and the level of DBE availability that would be expected in the absence of discrimination. TxDOT can use the statistical disparities in Chapter V, the rates at which DBEs form businesses for a Step 2 adjustment. Business formation results are the type of “demonstrable evidence that is logically and directly related to the effect for which the adjustment is sought.”²³² However, we note that while the DBE regulations have withstood repeated legal attacks, there is no direct case law upholding this type of “but for” analysis. We therefore advise TxDOT to proceed with caution in using the economy-wide data for an adjustment.

2. Use the Study to Set DBE Contract Goals

The highly detailed unweighted availability estimates in Chapter IV can serve as the starting point for setting narrowly tailored contract goals that reflect the percentage of available DBEs as a percentage of the total pool of available firms. The Department should weigh the estimated scopes of the contract by the availability of DBEs in those scopes, and then adjust the result based on geography and current market conditions (for example, the volume of work currently underway in the market, the entrance of newly certified firms, specialized nature of the project, etc.).

The Diversity Management System can include the contract goal setting module developed to utilize our study’s unweighted availability data as the starting point. Written procedures based on the study results detailing the implementation of contract goal setting should be developed and disseminated so that all contracting actors understand the methodology.

We further recommend that contract goals be reviewed when there is a change order greater than some minimum amount (*e.g.*, ten percent). This could result in an increase, a decrease or no change in the contract goal, but it will ensure the constitutionally required flexibility that is the hallmark of a narrowly tailored goal setting and implementation methodology.

Likewise, we suggest that goals on the individual task orders issued pursuant to on-call or task order contracts be set on the basis of the tasks for the particular order. While this is more administratively burdensome to TxDOT, narrowly tailored goal setting requires some individualized consideration. The DMS goal setting module should reduce the work of these individual determinations.

231. Table 4-22, Aggregated Weighted Availability for FAA Funded Contracts.

232. 49 CFR § 26.45(d)(3); *see also* §23.51.

3. Consider “Banking” Race-Neutral Participation

Many general contractors and trade group representatives reported that they might use DBEs more extensively if they were able to receive credit for exceeding the goal or for using DBEs not listed in the original compliance documents. One approach to this issue would be to permit the general contractor to “bank” dollars spent, in excess of the contract goal, towards meeting goals on future contracts. A variant would be to permit utilization of DBEs not listed at the time of bid to count towards any shortfall in participation from “condition of award” DBEs. Either or both would encourage prime firms to exceed the goals where possible.

The North Carolina Department of Transportation applies this idea to its non-FHWA-funded contracts.²³³ TxDOT could also add a ceiling on how much credit could be banked (*e.g.*, 25 percent of the excess dollars) and or how much credit could be used on a particular contract (*e.g.*, up to 25 percent of the contract goal).

This approach was specifically cited by the Fourth Circuit Court of Appeals in upholding NCDOT’s M/WBE program for state funded contracts. That “prime contractors can bank any excess minority participation for use against future goals over the following two years” was held to be a flexible program element that meets the narrow tailoring requirement.²³⁴

4. Adopt a Pilot Mentor-Protégé Program

TxDOT should consider adopting a pilot Mentor-Protégé Program (“MPP”) for DBEs. The DBE program regulations at 49 C.F.R. § 26.35 and the Guidelines of Appendix D to Part 26 should provide the framework for the program. In addition to the standards provided in Part 26, the General Counsel’s Office at the USDOT has provided some additional guidance²³⁵, and the USDOT’s Office of Small Disadvantaged Business Utilization has adopted a pilot program²³⁶ and has drafted sample documents.²³⁷

233. Under NCDOT’s program, if the bid of the lowest responsive bidder exceeds \$500,000 and if the committed MBE/WBE participation submitted by Letter of Intent exceeds the algebraic sum of the MBE or WBE goal by \$1,000 or more, the excess will be placed on deposit by the Department for future use by the bidder. Separate accounts are maintained for MBE and WBE participation and these may accumulate for a period not to exceed 24 months. When the apparent lowest responsive bidder fails to submit sufficient participation by MBE or WBE firms to meet the contract goal, as part of the good faith effort, the Department will consider allowing the bidder to withdraw funds to meet the MBE goal or the WBE goal as long as there are adequate funds available from the bidder’s MBE or WBE bank account. See 19A N.C. Admin. Code 2D.1110.

234. *H.B. Rowe Co., Inc. v. Tippett*, 615 F.3d 233, 253-254 (4th Circ. 2010).

235. <https://www.transportation.gov/civil-rights/disadvantaged-business-enterprise/official-questions-and-answers-qas-disadvantaged>.

236. <https://www.transportation.gov/osdbu/procurement-assistance/mentor-protege-pilot-program>.

There was a general consensus that supporting the growth and development of DBEs is an objective from which elements of the contracting community would benefit. Skill sets such as estimating, understanding of, and adherence to, specifications, billing and scheduling, accounting, safety, marketing, and meeting prequalification standards are possible areas of focus.

The following elements reflect best practices:

- A description of the qualifications of the mentor, including the firm's number of years of experience as a construction contractor or consultant; the agreement to devote a specified number of hours per month to working with the protégé; and the qualifications of the lead individual responsible for implementing the development plan.
- A description of the qualifications of the protégé, including the firm's number of years of experience as a construction contractor or consultant; the agreement to devote a specified number of hours per month to working with the mentor; and the qualifications of the DBE owner(s).
- A Department-approved written development plan, which clearly sets forth the objectives of the parties and their respective roles, the duration of the arrangement, a schedule for meetings and development of action plans, and the services and resources to be provided by the mentor to the protégé. The assistance provided by the mentor must be detailed and directly relevant to TxDOT projects. The development targets should be quantifiable and verifiable— such as increased bonding capacity, increased sales, increased areas of work specialty or prequalification, etc.— and reflect objectives that increase the protégé's capacities and expand its business areas and expertise.
- A long term and specific commitment between the parties, *e.g.*, 12 to 36 months.
- The use of any equipment or equipment rental must be detailed in the plan, and should be further covered by bills of sale, lease agreements, etc., and require prior written approval by the Department.
- Any financial assistance by the mentor to the protégé must be subject to prior written approval by TxDOT and must not permit the mentor to assume control of the protégé.
- A fee schedule to cover the direct and indirect cost for services provided by the mentor for specific training and assistance to the protégé.

237. <https://www.transportation.gov/small-business/procurement-assistance/mentor-protege-program-sample-agreement-1>.

- The development plan must contain a provision that it may be terminated by mutual consent or by the Department if the protégé no longer meets the eligibility standards for DBE certification; either party desires to be removed from the relationship; either party has failed or is unable to meet its obligations under the plan; the protégé is not progressing or is not likely to progress in accordance with the plan; the protégé has reached a satisfactory level of self-sufficiency to compete without resorting to the plan; or the plan or its provisions are contrary to legal requirements.
- Submission of quarterly reports by the parties indicating their progress toward each of the plan's goals.
- Regular review by the Department of compliance with the plan and progress towards meeting its objectives. Failure to adhere to the terms of the plan or to make satisfactory progress would be grounds for termination from the program.

We recognize that this level of direction and oversight will require additional resources from CIV and relevant user departments. Close monitoring of the program will be critical, but other entities have reported success with a USDOT approved approach.

5. Consider a Bonding and Financing Program for DBEs

Access to bonding and working capital are the two of largest barriers to the development and success of DBEs and small firms because traditional underwriting standards have often excluded them. The size and complexity of many TxDOT projects increases this barrier. One approach that has proven to be effective for some agencies is to develop an agency-sponsored bonding and financing assistance program for certified firms. This goes beyond the Department's current provision of information about outside bonding resources to providing actual assistance to firms through a program consultant; it is not, however, a bonding guarantee program that places the state's credit at risk or provides direct subsidies to participants. Rather, this concept brings the commitment of a surety company to provide a bond for firms that have successfully completed the program. Other agencies have reported significant increases in DBEs' bonding capacities and ability to take on larger projects using this type of program.

C. Strengthen the HUB Program

TxDOT administers the Historically Underutilized Business program on its state funded contracts pursuant to a state statute that gives the Comptroller the

authority to develop the program. The Department is not free to revise the program on its own initiative. However, we suggest that TxDOT work with the Comptroller to enhance the program as follows.

1. Permit HUBs to Count Their Self-Performance

Many certified HUB firms reported that the program would be more effective if they were permitted to count their own performance towards meeting the goal. We agree. Restricting the program to only subcontracting work is highly unusual, and limits opportunities for HUBs to grow into prime vendors. A subcontracting only program also fails to recognize that barriers to prime contracting opportunities are the most difficult for minority and women businesses to overcome. The DBE program has always permitted prime contractors to count self-performance towards meeting contract goals²³⁸, and no court has suggested that this somehow fails strict constitutional scrutiny. This is also “race-neutral” participation, since it would not be the result of the contract goals. Counting self-performance would further conform the HUB program counting rules to the DBE program regulations, reducing confusion between the two.

2. Use the Study to Set HUB Contract Goals

As with DBE contract goals, we recommend TxDOT use the study’s availability estimates as the starting point for contract goal setting.

D. Develop Performance Measures for Program Success

TxDOT should develop quantitative performance measures for certified firms and the overall success of the programs to evaluate their effectiveness in reducing the systemic barriers identified by the study. In addition to meeting the annual goal(s), possible benchmarks might be:

- The number of bids or proposals and the dollar amount of the awards, and the goal shortfall where the bidder submitted good faith efforts to meet the contract goal;
- The number and dollar amount of bids or proposals rejected as non-responsive for failure to make good faith efforts to meet the goal;
- The number, type, and dollar amount of DBE and HUB substitutions during contract performance;

238. 49 C.F.R. §26.55(a).

- Increased bidding by certified firms;
- Increased prime contract awards to certified firms; and
- Increased “capacity” of certified firms as measured by bonding limits, size of jobs, profitability, etc.

APPENDIX A:

FURTHER EXPLANATION OF THE MULTIPLE REGRESSION ANALYSIS

As explained in the report, the multiple regression statistical techniques seek to explore the relationship between a set of independent variables and a dependent variable. The following equation is a way to visualize this relationship:

$$DV = f(D, I, O),$$

where DV is the dependent variable; D is a set of demographic variables; I is a set of industry and occupation variables; and O is a set of other independent variables.

The estimation process takes this equation and transforms it into:

$$DV = C + (\beta_1 * D) + (\beta_2 * I) + (\beta_3 * O) + \mu,$$

where C is the constant term; β_1 , β_2 and β_3 are coefficients, and μ is the random error term.

The statistical technique seeks to estimate the values of the constant term and the coefficients.

In order to complete the estimation, the set of independent variables must be operationalized. For demographic variables, the estimation used race, gender and age. For industry and occupation variables, the relevant industry and occupation were utilized. For the other variables, age and education were used.

A coefficient was estimated for each independent variable. The broad idea is that a person's wage or earnings is dependent upon the person's race, gender, age, industry, occupation, and education. Since this report examined the state of Texas, the analysis was limited to data from the state. The coefficient for the new variable showed the impact of being a member of that race or gender in the state of Texas.

APPENDIX B:

FURTHER EXPLANATION OF THE PROBIT REGRESSION ANALYSIS

Probit regression is a special type of regression analysis. While there are many differences between the underlying estimation techniques used in the probit regression and the standard regression analysis, the main differences, from the layperson's point of view, lie in the nature of the dependent variable and the interpretation of the coefficients associated with the independent variables.

The basic model looks the same:

$$DV = f(D, I, O),$$

where DV is the dependent variable; D is a set of demographic variables; I is a set of industry & occupation variables; and O is a set of other independent variables.

The estimation process takes this equation and transforms it into:

$$DV = C + (\beta_1 * D) + (\beta_2 * I) + (\beta_3 * O) + \mu,$$

where C is the constant term; β_1 , β_2 , and β_3 are coefficients, and μ is the random error term.

In the standard regression model, the dependent variable is continuous and can take on many values. In the probit model, the dependent variable is dichotomous and can take on only two values: zero or one. For instance, in the standard regression analysis, we may be exploring the impact of a change in some independent variable on wages. In this case, the value of one's wage might be any non-negative number. In contrast, in the probit regression analysis, the exploration might be the impact of a change in some independent variable on the probability that some event occurs. For instance, the question might be how an individual's gender impacts the probability of that person forming a business. In this case, the dependent variable has two values: zero, if a business is not formed; one, if a business is formed.

The second significant difference – the interpretation of the independent variables' coefficients – is fairly straight-forward in the standard regression model: the unit change in the independent variable impacts the dependent variable

by the amount of the coefficient.²³⁹ However, in the probit model, the initial coefficients cannot be interpreted this way. One additional step - which can be computed easily by most statistical packages - must be undertaken in order to yield a result that indicates how the change in the independent variable affects the probability of an event (*e.g.*, business formation) occurs. For instance, using our previous example of the impact on gender on business formation, if the independent variable was WOMAN (with a value of 0 if the individual was male and 1 if the individual was female) and the final transformation of the coefficient of WOMAN was -0.12, we would interpret this to mean that women have a 12 percent lower probability of forming a business compared to men.

239. The exact interpretation depends upon the functional form of the model.

APPENDIX C:

SIGNIFICANCE LEVELS

Many tables in this Report contain asterisks indicating a number has statistical significance at 0.001 or 0.01 levels and the body of the report repeats these descriptions. While the use of the term seems important, it is not self-evident what the term means. This Appendix provides a general explanation of significance levels.

This Report seeks to address the question whether non-Whites and White women received disparate treatment in the economy relative to White males. From a statistical viewpoint, this primary question has two sub-questions:

- What is the relationship between the independent variable and the dependent variable?
- What is the probability that the relationship between the independent variable and the dependent variable is equal to zero?

For example, an important question facing TxDOT as it explores whether each racial and ethnic group and White women continues to experience discrimination in its markets is do non-Whites and White women receive lower wages than White men? As discussed in Appendix A, one way to uncover the relationship between the dependent variable (*e.g.*, wages) and the independent variable (*e.g.* non-Whites) is through multiple regression analysis. An example helps to explain this concept.

Let us say this analysis determines that non-Whites receive wages that are 35 percent less than White men after controlling for other factors, such as education and industry, which might account for the differences in wages. However, this finding is only an estimate of the relationship between the independent variable (*e.g.*, non-Whites) and the dependent variable (*e.g.*, wages) – the first sub-question. It is still important to determine how accurate is that estimation, that is, what is the probability the estimated relationship is equal to zero – the second sub-question.

To resolve the second sub-question, statistical hypothesis tests are utilized. Hypothesis testing assumes that there is no relationship between belonging to a particular demographic group and the level of economic utilization relative to White men (*e.g.*, non-Whites earn identical wages compared to White men or non-Whites earn 0 percent less than White men). This sometimes called the null hypothesis. We then calculate a confidence interval to find explore the

probability that the observed relationship (*e.g.*, - 35 percent) is between 0 and minus that confidence interval.²⁴⁰ The confidence interval will vary depending upon the level of confidence (statistical significance) we wish to have in our conclusion. Hence, a statistical significance of 99 percent would have a broader confidence interval than statistical significance of 95 percent. Once a confidence interval is established, if -35 percent lies outside of that interval, we can assert the observed relationship (*e.g.*, 35 percent) is accurate at the appropriate level of statistical significance.

240. Because 0 can only be greater than -35 percent, we only speak of “minus the confidence level”. This is a one-tailed hypothesis test. If, in another example, the observed relationship could be above or below the hypothesized value, then we would say “plus or minus the confidence level” and this would be a two-tailed test.

APPENDIX D:

ADDITIONAL DATA FROM THE UTILIZATION ANALYSIS FOR THE TEXAS DEPARTMENT OF TRANSPORTATION

This Appendix provides additional data on the distribution of contract dollars across NAICS codes and states, disaggregated by funding source. The Tables contain all the NAICS code in the Final Contract Data Files and every state where a firm who received a contract in the Final Contract Data File maintains a location.

1. FHWA Funded Contracts

Table D-1: Industry Percentage Distribution of Contracts by Dollars Paid
All FHWA Funded Contracts

NAICS	NAICS Code Description	Pct Total Contract Dollars	Cumulative Pct Total Contract Dollars
237310	Highway, Street, and Bridge Construction	60.636750%	60.636750%
541330	Engineering Services	15.560764%	76.197514%
238210	Electrical Contractors and Other Wiring Installation Contractors	2.561143%	78.758657%
488490	Other Support Activities for Road Transportation	2.041758%	80.800414%
238910	Site Preparation Contractors	1.804133%	82.604547%
238120	Structural Steel and Precast Concrete Contractors	1.578354%	84.182901%
238990	All Other Specialty Trade Contractors	1.502763%	85.685664%
541310	Architectural Services	1.332372%	87.018036%
484220	Specialized Freight (except Used Goods) Trucking, Local	1.315620%	88.333656%

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NAICS	NAICS Code Description	Pct Total Contract Dollars	Cumulative Pct Total Contract Dollars
541420	Industrial Design Services	1.292771%	89.626427%
561730	Landscaping Services	1.140758%	90.767185%
237110	Water and Sewer Line and Related Structures Construction	0.976153%	91.743338%
238220	Plumbing, Heating, and Air-Conditioning Contractors	0.616032%	92.359370%
237990	Other Heavy and Civil Engineering Construction	0.591926%	92.951296%
541620	Environmental Consulting Services	0.536245%	93.487541%
236210	Industrial Building Construction	0.472831%	93.960372%
541370	Surveying and Mapping (except Geophysical) Services	0.423865%	94.384237%
212321	Construction Sand and Gravel Mining	0.418260%	94.802497%
541219	Other Accounting Services	0.414890%	95.217387%
324121	Asphalt Paving Mixture and Block Manufacturing	0.402602%	95.619989%
541380	Testing Laboratories	0.401322%	96.021312%
221310	Water Supply and Irrigation Systems	0.361933%	96.383244%
327992	Ground or Treated Mineral and Earth Manufacturing	0.336522%	96.719767%
238310	Drywall and Insulation Contractors	0.300781%	97.020548%
484110	General Freight Trucking, Local	0.265868%	97.286416%
561990	All Other Support Services	0.235606%	97.522022%
237120	Oil and Gas Pipeline and Related Structures Construction	0.227998%	97.750020%
238190	Other Foundation, Structure, and Building Exterior Contractors	0.203871%	97.953891%
327390	Other Concrete Product Manufacturing	0.189956%	98.143847%
925120	Administration of Urban Planning and Community and Rural Development	0.156535%	98.300382%
238110	Poured Concrete Foundation and Structure Contractors	0.135341%	98.435724%
333120	Construction Machinery Manufacturing	0.117788%	98.553512%
562910	Remediation Services	0.116416%	98.669928%
327410	Lime Manufacturing	0.082635%	98.752563%
212312	Crushed and Broken Limestone Mining and Quarrying	0.080607%	98.833170%

NAICS	NAICS Code Description	Pct Total Contract Dollars	Cumulative Pct Total Contract Dollars
423320	Brick, Stone, and Related Construction Material Merchant Wholesalers	0.076397%	98.909567%
332618	Other Fabricated Wire Product Manufacturing	0.072055%	98.981622%
532412	Construction, Mining, and Forestry Machinery and Equipment Rental and Leasing	0.070076%	99.051698%
541820	Public Relations Agencies	0.067883%	99.119581%
238170	Siding Contractors	0.050324%	99.169905%
331221	Rolled Steel Shape Manufacturing	0.045860%	99.215765%
561790	Other Services to Buildings and Dwellings	0.043775%	99.259540%
327332	Concrete Pipe Manufacturing	0.040293%	99.299833%
423840	Industrial Supplies Merchant Wholesalers	0.039519%	99.339352%
922120	Police Protection	0.032092%	99.371444%
238130	Framing Contractors	0.030917%	99.402361%
238140	Masonry Contractors	0.030895%	99.433256%
424720	Petroleum and Petroleum Products Merchant Wholesalers (except Bulk Stations and Terminals)	0.026493%	99.459749%
327320	Ready-Mix Concrete Manufacturing	0.025679%	99.485428%
561720	Janitorial Services	0.025432%	99.510859%
332313	Plate Work Manufacturing	0.024691%	99.535551%
237130	Power and Communication Line and Related Structures Construction	0.022590%	99.558141%
541320	Landscape Architectural Services	0.021812%	99.579952%
332510	Hardware Manufacturing	0.019476%	99.599428%
541690	Other Scientific and Technical Consulting Services	0.019145%	99.618574%
522220	Sales Financing	0.018817%	99.637390%
541618	Other Management Consulting Services	0.017680%	99.655070%
238320	Painting and Wall Covering Contractors	0.017297%	99.672367%
325613	Surface Active Agent Manufacturing	0.016839%	99.689206%
238390	Other Building Finishing Contractors	0.015655%	99.704860%
541611	Administrative Management and General Management Consulting Services	0.014887%	99.719747%

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NAICS	NAICS Code Description	Pct Total Contract Dollars	Cumulative Pct Total Contract Dollars
541350	Building Inspection Services	0.014384%	99.734131%
562991	Septic Tank and Related Services	0.013852%	99.747982%
423440	Other Commercial Equipment Merchant Wholesalers	0.013359%	99.761341%
238330	Flooring Contractors	0.012816%	99.774157%
541511	Custom Computer Programming Services	0.010849%	99.785006%
333991	Power-Driven Handtool Manufacturing	0.010823%	99.795829%
332312	Fabricated Structural Metal Manufacturing	0.010138%	99.805966%
238350	Finish Carpentry Contractors	0.010067%	99.816033%
562112	Hazardous Waste Collection	0.009512%	99.825545%
331491	Nonferrous Metal (except Copper and Aluminum) Rolling, Drawing, and Extruding	0.009208%	99.834753%
423490	Other Professional Equipment and Supplies Merchant Wholesalers	0.008916%	99.843669%
325520	Adhesive Manufacturing	0.008389%	99.852058%
541360	Geophysical Surveying and Mapping Services	0.008148%	99.860206%
561612	Security Guards and Patrol Services	0.007944%	99.868150%
532490	Other Commercial and Industrial Machinery and Equipment Rental and Leasing	0.007484%	99.875634%
453998	All Other Miscellaneous Store Retailers (except Tobacco Stores)	0.006469%	99.882102%
213111	Drilling Oil and Gas Wells	0.006329%	99.888432%
324199	All Other Petroleum and Coal Products Manufacturing	0.006090%	99.894522%
423310	Lumber, Plywood, Millwork, and Wood Panel Merchant Wholesalers	0.005989%	99.900511%
423390	Other Construction Material Merchant Wholesalers	0.005903%	99.906413%
238160	Roofing Contractors	0.005799%	99.912212%
331110	Iron and Steel Mills and Ferroalloy Manufacturing	0.005587%	99.917799%
424710	Petroleum Bulk Stations and Terminals	0.005314%	99.923113%
332322	Sheet Metal Work Manufacturing	0.005165%	99.928278%
331222	Steel Wire Drawing	0.004902%	99.933180%
423220	Home Furnishing Merchant Wholesalers	0.004252%	99.937432%

NAICS	NAICS Code Description	Pct Total Contract Dollars	Cumulative Pct Total Contract Dollars
485111	Mixed Mode Transit Systems	0.003889%	99.941321%
321912	Cut Stock, Resawing Lumber, and Planing	0.003834%	99.945155%
115310	Support Activities for Forestry	0.003750%	99.948906%
562119	Other Waste Collection	0.003087%	99.951992%
541512	Computer Systems Design Services	0.003036%	99.955028%
423120	Motor Vehicle Supplies and New Parts Merchant Wholesalers	0.002830%	99.957858%
339950	Sign Manufacturing	0.002804%	99.960662%
484230	Specialized Freight (except Used Goods) Trucking, Long-Distance	0.002802%	99.963464%
423510	Metal Service Centers and Other Metal Merchant Wholesalers	0.002678%	99.966142%
236220	Commercial and Institutional Building Construction	0.002651%	99.968793%
511110	Newspaper Publishers	0.002481%	99.971275%
424120	Stationery and Office Supplies Merchant Wholesalers	0.002149%	99.973423%
562998	All Other Miscellaneous Waste Management Services	0.001895%	99.975318%
332999	All Other Miscellaneous Fabricated Metal Product Manufacturing	0.001856%	99.977174%
541614	Process, Physical Distribution, and Logistics Consulting Services	0.001668%	99.978842%
212311	Dimension Stone Mining and Quarrying	0.001578%	99.980420%
541720	Research and Development in the Social Sciences and Humanities	0.001413%	99.981833%
811198	All Other Automotive Repair and Maintenance	0.001290%	99.983123%
453210	Office Supplies and Stationery Stores	0.001164%	99.984287%
423830	Industrial Machinery and Equipment Merchant Wholesalers	0.000933%	99.985219%
561421	Telephone Answering Services	0.000914%	99.986133%
321999	All Other Miscellaneous Wood Product Manufacturing	0.000883%	99.987016%
333413	Industrial and Commercial Fan and Blower and Air Purification Equipment Manufacturing	0.000866%	99.987882%
541110	Offices of Lawyers	0.000860%	99.988743%

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NAICS	NAICS Code Description	Pct Total Contract Dollars	Cumulative Pct Total Contract Dollars
541211	Offices of Certified Public Accountants	0.000783%	99.989525%
561311	Employment Placement Agencies	0.000726%	99.990251%
454390	Other Direct Selling Establishments	0.000623%	99.990874%
562111	Solid Waste Collection	0.000618%	99.991492%
238290	Other Building Equipment Contractors	0.000577%	99.992069%
333316	Photographic and Photocopying Equipment Manufacturing	0.000531%	99.992601%
332911	Industrial Valve Manufacturing	0.000499%	99.993100%
423410	Photographic Equipment and Supplies Merchant Wholesalers	0.000498%	99.993597%
493120	Refrigerated Warehousing and Storage	0.000485%	99.994082%
541430	Graphic Design Services	0.000480%	99.994562%
541990	All Other Professional, Scientific, and Technical Services	0.000420%	99.994982%
312113	Ice Manufacturing	0.000370%	99.995352%
541850	Outdoor Advertising	0.000346%	99.995698%
339940	Office Supplies (except Paper) Manufacturing	0.000334%	99.996032%
325314	Fertilizer (Mixing Only) Manufacturing	0.000271%	99.996303%
624190	Other Individual and Family Services	0.000249%	99.996552%
541922	Commercial Photography	0.000248%	99.996801%
423720	Plumbing and Heating Equipment and Supplies (Hydronics) Merchant Wholesalers	0.000230%	99.997031%
811490	Other Personal and Household Goods Repair and Maintenance	0.000220%	99.997251%
423810	Construction and Mining (except Oil Well) Machinery and Equipment Merchant Wholesalers	0.000212%	99.997462%
339999	All Other Miscellaneous Manufacturing	0.000211%	99.997674%
327999	All Other Miscellaneous Nonmetallic Mineral Product Manufacturing	0.000211%	99.997884%
331511	Iron Foundries	0.000206%	99.998090%
323111	Commercial Printing (except Screen and Books)	0.000175%	99.998265%

NAICS	NAICS Code Description	Pct Total Contract Dollars	Cumulative Pct Total Contract Dollars
511210	Software Publishers	0.000162%	99.998428%
562211	Hazardous Waste Treatment and Disposal	0.000126%	99.998553%
423990	Other Miscellaneous Durable Goods Merchant Wholesalers	0.000124%	99.998677%
524210	Claims Adjusting	0.000113%	99.998791%
423850	Service Establishment Equipment and Supplies Merchant Wholesalers	0.000103%	99.998894%
335911	Storage Battery Manufacturing	0.000098%	99.998992%
315280	Other Cut and Sew Apparel Manufacturing	0.000084%	99.999076%
113310	Logging	0.000077%	99.999153%
532289	All Other Consumer Goods Rental	0.000074%	99.999227%
424690	Other Chemical and Allied Products Merchant Wholesalers	0.000073%	99.999301%
334614	Software and Other Prerecorded Compact Disc, Tape, and Record Reproducing	0.000070%	99.999370%
236117	New Housing For-Sale Builders	0.000066%	99.999436%
524291	Direct Life Insurance Carriers	0.000066%	99.999502%
531210	Offices of Real Estate Agents and Brokers	0.000063%	99.999564%
722320	Caterers	0.000061%	99.999626%
541714	Research and Development in Biotechnology (except Nanobiotechnology)	0.000051%	99.999677%
115112	Soil Preparation, Planting, and Cultivating	0.000047%	99.999724%
321114	Wood Preservation	0.000045%	99.999770%
423110	Automobile and Other Motor Vehicle Merchant Wholesalers	0.000040%	99.999810%
424210	Drugs and Druggists' Sundries Merchant Wholesalers	0.000030%	99.999840%
444220	Nursery, Garden Center, and Farm Supply Stores	0.000029%	99.999869%
541613	Marketing Consulting Services	0.000029%	99.999898%
561710	Exterminating and Pest Control Services	0.000024%	99.999922%
722511	Full-Service Restaurants	0.000023%	99.999946%
561439	Other Business Service Centers (including Copy Shops)	0.000016%	99.999961%

NAICS	NAICS Code Description	Pct Total Contract Dollars	Cumulative Pct Total Contract Dollars
424110	Printing and Writing Paper Merchant Wholesalers	0.000012%	99.999973%
561320	Temporary Help Services	0.000009%	99.999983%
441110	New Car Dealers	0.000005%	99.999988%
445110	Supermarkets and Other Grocery (except Convenience) Stores	0.000005%	99.999993%
424990	Other Miscellaneous Nondurable Goods Merchant Wholesalers	0.000003%	99.999996%
333415	Air-Conditioning and Warm Air Heating Equipment and Commercial and Industrial Refrigeration Equipment Manufacturing	0.000003%	99.999999%
325998	All Other Miscellaneous Chemical Product and Preparation Manufacturing	0.000001%	100.000000%
Total			100.0%

Source: CHA analysis of TxDOT data

**Table D-2: Industry Percentage Distribution of Contracts by Dollars Paid
FHWA Funded Prime Contracts**

NAICS	NAICS Code Description	Pct Total Contract Dollars	Cumulative Pct Total Contract Dollars
237310	Highway, Street, and Bridge Construction	87.37%	87.37%
541330	Engineering Services	3.39%	90.76%
488490	Other Support Activities for Road Transportation	3.17%	93.93%
238990	All Other Specialty Trade Contractors	1.72%	95.65%
561730	Landscaping Services	1.44%	97.09%
237110	Water and Sewer Line and Related Structures Construction	1.17%	98.26%
324121	Asphalt Paving Mixture and Block Manufacturing	0.67%	98.93%
541370	Surveying and Mapping (except Geophysical) Services	0.27%	99.20%
925120	Administration of Urban Planning and Community and Rural Development	0.26%	99.46%
541620	Environmental Consulting Services	0.23%	99.69%

NAICS	NAICS Code Description	Pct Total Contract Dollars	Cumulative Pct Total Contract Dollars
237990	Other Heavy and Civil Engineering Construction	0.22%	99.91%
238170	Siding Contractors	0.08%	99.99%
485111	Mixed Mode Transit Systems	0.01%	100.00%
Total			100.0%

Source: CHA analysis of TxDOT data

**Table D-3: Industry Percentage Distribution of Contracts by Dollars Paid
FHWA Funded Subcontracts**

NAICS	NAICS Code Description	Pct Total Contract Dollars	Cumulative Pct Total Contract Dollars
541330	Engineering Services	33.615414%	33.615414%
237310	Highway, Street, and Bridge Construction	20.978072%	54.593486%
238210	Electrical Contractors and Other Wiring Installation Contractors	6.361210%	60.954695%
238910	Site Preparation Contractors	4.480994%	65.435689%
238120	Structural Steel and Precast Concrete Contractors	3.920220%	69.355909%
541310	Architectural Services	3.309264%	72.665173%
484220	Specialized Freight (except Used Goods) Trucking, Local	3.267655%	75.932828%
541420	Industrial Design Services	3.210906%	79.143735%
238220	Plumbing, Heating, and Air-Conditioning Contractors	1.530063%	80.673798%
238990	All Other Specialty Trade Contractors	1.181119%	81.854917%
236210	Industrial Building Construction	1.174388%	83.029305%
237990	Other Heavy and Civil Engineering Construction	1.148644%	84.177950%
212321	Construction Sand and Gravel Mining	1.038848%	85.216798%
541219	Other Accounting Services	1.030479%	86.247277%
541380	Testing Laboratories	0.996780%	87.244057%
541620	Environmental Consulting Services	0.992471%	88.236528%
221310	Water Supply and Irrigation Systems	0.898946%	89.135474%
327992	Ground or Treated Mineral and Earth Manufacturing	0.835834%	89.971308%

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NAICS	NAICS Code Description	Pct Total Contract Dollars	Cumulative Pct Total Contract Dollars
238310	Drywall and Insulation Contractors	0.747061%	90.718369%
561730	Landscaping Services	0.693647%	91.412016%
237110	Water and Sewer Line and Related Structures Construction	0.692668%	92.104684%
484110	General Freight Trucking, Local	0.660347%	92.765031%
541370	Surveying and Mapping (except Geophysical) Services	0.652643%	93.417674%
561990	All Other Support Services	0.585184%	94.002857%
237120	Oil and Gas Pipeline and Related Structures Construction	0.566288%	94.569146%
238190	Other Foundation, Structure, and Building Exterior Contractors	0.506362%	95.075508%
327390	Other Concrete Product Manufacturing	0.471801%	95.547309%
488490	Other Support Activities for Road Transportation	0.363703%	95.911013%
238110	Poured Concrete Foundation and Structure Contractors	0.336153%	96.247165%
333120	Construction Machinery Manufacturing	0.292555%	96.539720%
562910	Remediation Services	0.289147%	96.828867%
327410	Lime Manufacturing	0.205244%	97.034111%
212312	Crushed and Broken Limestone Mining and Quarrying	0.200208%	97.234319%
423320	Brick, Stone, and Related Construction Material Merchant Wholesalers	0.189751%	97.424069%
332618	Other Fabricated Wire Product Manufacturing	0.178965%	97.603035%
532412	Construction, Mining, and Forestry Machinery and Equipment Rental and Leasing	0.174050%	97.777085%
541820	Public Relations Agencies	0.168604%	97.945689%
331221	Rolled Steel Shape Manufacturing	0.113904%	98.059593%
561790	Other Services to Buildings and Dwellings	0.108725%	98.168318%
327332	Concrete Pipe Manufacturing	0.100078%	98.268396%
423840	Industrial Supplies Merchant Wholesalers	0.098156%	98.366552%
922120	Police Protection	0.079707%	98.446259%
238130	Framing Contractors	0.076790%	98.523049%

NAICS	NAICS Code Description	Pct Total Contract Dollars	Cumulative Pct Total Contract Dollars
238140	Masonry Contractors	0.076734%	98.599783%
424720	Petroleum and Petroleum Products Merchant Wholesalers (except Bulk Stations and Terminals)	0.065802%	98.665585%
327320	Ready-Mix Concrete Manufacturing	0.063780%	98.729365%
561720	Janitorial Services	0.063165%	98.792530%
332313	Plate Work Manufacturing	0.061326%	98.853857%
237130	Power and Communication Line and Related Structures Construction	0.056108%	98.909965%
541320	Landscape Architectural Services	0.054174%	98.964139%
332510	Hardware Manufacturing	0.048374%	99.012513%
541690	Other Scientific and Technical Consulting Services	0.047552%	99.060065%
522220	Sales Financing	0.046736%	99.106801%
541618	Other Management Consulting Services	0.043912%	99.150712%
238320	Painting and Wall Covering Contractors	0.042961%	99.193673%
325613	Surface Active Agent Manufacturing	0.041823%	99.235496%
238390	Other Building Finishing Contractors	0.038882%	99.274378%
541611	Administrative Management and General Management Consulting Services	0.036974%	99.311352%
541350	Building Inspection Services	0.035726%	99.347078%
562991	Septic Tank and Related Services	0.034404%	99.381482%
423440	Other Commercial Equipment Merchant Wholesalers	0.033180%	99.414662%
238330	Flooring Contractors	0.031831%	99.446493%
541511	Custom Computer Programming Services	0.026945%	99.473438%
333991	Power-Driven Handtool Manufacturing	0.026881%	99.500319%
332312	Fabricated Structural Metal Manufacturing	0.025180%	99.525499%
238350	Finish Carpentry Contractors	0.025003%	99.550501%
562112	Hazardous Waste Collection	0.023626%	99.574128%
331491	Nonferrous Metal (except Copper and Aluminum) Rolling, Drawing, and Extruding	0.022869%	99.596997%
423490	Other Professional Equipment and Supplies Merchant Wholesalers	0.022145%	99.619142%

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NAICS	NAICS Code Description	Pct Total Contract Dollars	Cumulative Pct Total Contract Dollars
325520	Adhesive Manufacturing	0.020837%	99.639979%
541360	Geophysical Surveying and Mapping Services	0.020237%	99.660216%
561612	Security Guards and Patrol Services	0.019730%	99.679946%
532490	Other Commercial and Industrial Machinery and Equipment Rental and Leasing	0.018589%	99.698535%
453998	All Other Miscellaneous Store Retailers (except Tobacco Stores)	0.016066%	99.714601%
213111	Drilling Oil and Gas Wells	0.015720%	99.730321%
324199	All Other Petroleum and Coal Products Manufacturing	0.015127%	99.745448%
423310	Lumber, Plywood, Millwork, and Wood Panel Merchant Wholesalers	0.014874%	99.760322%
423390	Other Construction Material Merchant Wholesalers	0.014661%	99.774983%
238160	Roofing Contractors	0.014403%	99.789387%
331110	Iron and Steel Mills and Ferroalloy Manufacturing	0.013877%	99.803263%
424710	Petroleum Bulk Stations and Terminals	0.013198%	99.816461%
332322	Sheet Metal Work Manufacturing	0.012829%	99.829290%
331222	Steel Wire Drawing	0.012175%	99.841465%
423220	Home Furnishing Merchant Wholesalers	0.010560%	99.852025%
321912	Cut Stock, Resawing Lumber, and Planing	0.009522%	99.861547%
115310	Support Activities for Forestry	0.009315%	99.870862%
562119	Other Waste Collection	0.007666%	99.878528%
541512	Computer Systems Design Services	0.007539%	99.886068%
423120	Motor Vehicle Supplies and New Parts Merchant Wholesalers	0.007030%	99.893097%
339950	Sign Manufacturing	0.006965%	99.900062%
484230	Specialized Freight (except Used Goods) Trucking, Long-Distance	0.006959%	99.907021%
423510	Metal Service Centers and Other Metal Merchant Wholesalers	0.006652%	99.913673%
236220	Commercial and Institutional Building Construction	0.006585%	99.920258%
511110	Newspaper Publishers	0.006163%	99.926421%

NAICS	NAICS Code Description	Pct Total Contract Dollars	Cumulative Pct Total Contract Dollars
424120	Stationery and Office Supplies Merchant Wholesalers	0.005337%	99.931758%
562998	All Other Miscellaneous Waste Management Services	0.004706%	99.936464%
332999	All Other Miscellaneous Fabricated Metal Product Manufacturing	0.004610%	99.941074%
541614	Process, Physical Distribution, and Logistics Consulting Services	0.004143%	99.945216%
212311	Dimension Stone Mining and Quarrying	0.003920%	99.949137%
541720	Research and Development in the Social Sciences and Humanities	0.003509%	99.952646%
811198	All Other Automotive Repair and Maintenance	0.003203%	99.955849%
453210	Office Supplies and Stationery Stores	0.002891%	99.958740%
423830	Industrial Machinery and Equipment Merchant Wholesalers	0.002316%	99.961056%
561421	Telephone Answering Services	0.002270%	99.963326%
324121	Asphalt Paving Mixture and Block Manufacturing	0.002233%	99.965559%
321999	All Other Miscellaneous Wood Product Manufacturing	0.002192%	99.967751%
333413	Industrial and Commercial Fan and Blower and Air Purification Equipment Manufacturing	0.002152%	99.969903%
541110	Offices of Lawyers	0.002137%	99.972040%
541211	Offices of Certified Public Accountants	0.001944%	99.973984%
561311	Employment Placement Agencies	0.001803%	99.975786%
454390	Other Direct Selling Establishments	0.001547%	99.977333%
562111	Solid Waste Collection	0.001534%	99.978867%
238290	Other Building Equipment Contractors	0.001434%	99.980302%
333316	Photographic and Photocopying Equipment Manufacturing	0.001320%	99.981622%
332911	Industrial Valve Manufacturing	0.001240%	99.982861%
423410	Photographic Equipment and Supplies Merchant Wholesalers	0.001236%	99.984098%
493120	Refrigerated Warehousing and Storage	0.001205%	99.985302%
541430	Graphic Design Services	0.001191%	99.986494%

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NAICS	NAICS Code Description	Pct Total Contract Dollars	Cumulative Pct Total Contract Dollars
541990	All Other Professional, Scientific, and Technical Services	0.001043%	99.987537%
312113	Ice Manufacturing	0.000919%	99.988456%
541850	Outdoor Advertising	0.000859%	99.989315%
339940	Office Supplies (except Paper) Manufacturing	0.000830%	99.990145%
325314	Fertilizer (Mixing Only) Manufacturing	0.000673%	99.990818%
624190	Other Individual and Family Services	0.000619%	99.991437%
541922	Commercial Photography	0.000617%	99.992054%
423720	Plumbing and Heating Equipment and Supplies (Hydronics) Merchant Wholesalers	0.000571%	99.992625%
811490	Other Personal and Household Goods Repair and Maintenance	0.000547%	99.993171%
423810	Construction and Mining (except Oil Well) Machinery and Equipment Merchant Wholesalers	0.000526%	99.993697%
339999	All Other Miscellaneous Manufacturing	0.000524%	99.994222%
327999	All Other Miscellaneous Nonmetallic Mineral Product Manufacturing	0.000524%	99.994745%
331511	Iron Foundries	0.000511%	99.995256%
323111	Commercial Printing (except Screen and Books)	0.000435%	99.995692%
511210	Software Publishers	0.000403%	99.996095%
562211	Hazardous Waste Treatment and Disposal	0.000312%	99.996406%
423990	Other Miscellaneous Durable Goods Merchant Wholesalers	0.000308%	99.996715%
524210	Claims Adjusting	0.000281%	99.996996%
423850	Service Establishment Equipment and Supplies Merchant Wholesalers	0.000257%	99.997253%
335911	Storage Battery Manufacturing	0.000243%	99.997496%
315280	Other Cut and Sew Apparel Manufacturing	0.000209%	99.997705%
113310	Logging	0.000192%	99.997897%
532289	All Other Consumer Goods Rental	0.000183%	99.998080%
424690	Other Chemical and Allied Products Merchant Wholesalers	0.000182%	99.998263%

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NAICS	NAICS Code Description	Pct Total Contract Dollars	Cumulative Pct Total Contract Dollars
334614	Software and Other Prerecorded Compact Disc, Tape, and Record Reproducing	0.000173%	99.998436%
236117	New Housing For-Sale Builders	0.000163%	99.998599%
524291	Direct Life Insurance Carriers	0.000163%	99.998762%
531210	Offices of Real Estate Agents and Brokers	0.000156%	99.998918%
722320	Caterers	0.000152%	99.999070%
541714	Research and Development in Biotechnology (except Nanobiotechnology)	0.000128%	99.999198%
115112	Soil Preparation, Planting, and Cultivating	0.000117%	99.999315%
321114	Wood Preservation	0.000113%	99.999428%
423110	Automobile and Other Motor Vehicle Merchant Wholesalers	0.000100%	99.999528%
424210	Drugs and Druggists' Sundries Merchant Wholesalers	0.000075%	99.999603%
444220	Nursery, Garden Center, and Farm Supply Stores	0.000073%	99.999676%
541613	Marketing Consulting Services	0.000071%	99.999747%
561710	Exterminating and Pest Control Services	0.000061%	99.999807%
722511	Full-Service Restaurants	0.000058%	99.999866%
561439	Other Business Service Centers (including Copy Shops)	0.000039%	99.999904%
424110	Printing and Writing Paper Merchant Wholesalers	0.000030%	99.999934%
561320	Temporary Help Services	0.000023%	99.999957%
441110	New Car Dealers	0.000013%	99.999970%
445110	Supermarkets and Other Grocery (except Convenience) Stores	0.000012%	99.999982%
424990	Other Miscellaneous Nondurable Goods Merchant Wholesalers	0.000008%	99.999990%
333415	Air-Conditioning and Warm Air Heating Equipment and Commercial and Industrial Refrigeration Equipment Manufacturing	0.000007%	99.999997%
325998	All Other Miscellaneous Chemical Product and Preparation Manufacturing	0.000003%	100.000000%
Total			100.0%

Source: CHA analysis of TxDOT data

**Table D-4: State Percentage Distribution of Contracts by Dollars Paid
FHWA Funded Contracts**

State	Pct Total Contract Dollars
TX	96.6715%
IL	0.9740%
DC	0.6638%
PA	0.4390%
LA	0.4190%
AZ	0.1798%
OK	0.1784%
CA	0.1611%
IN	0.0714%
NM	0.0578%
AR	0.0398%
NE	0.0396%
MN	0.0220%
NC	0.0098%
MO	0.0080%
KY	0.0072%
MA	0.0071%
VA	0.0070%
CO	0.0063%
WI	0.0062%
FL	0.0054%
KS	0.0052%
GA	0.0044%
UT	0.0034%
MI	0.0031%
SC	0.0030%
NJ	0.0029%
OR	0.0021%

State	Pct Total Contract Dollars
NY	0.0005%
NV	0.0004%
IA	0.0004%
MT	0.0002%
Total	100.0%

Source: CHA analysis of TxDOT data

2. FAA Funded Contracts

**Table D-5: Industry Percentage Distribution of Contracts by Dollars Paid
All FAA Funded Contracts**

NAICS	NAICS Code Description	Pct Total Contract Dollars	Cumulative Pct Total Contract Dollars
237310	Highway, Street, and Bridge Construction	67.9142%	67.91%
238210	Electrical Contractors and Other Wiring Installation Contractors	7.5803%	75.49%
236220	Commercial and Institutional Building Construction	5.5781%	81.07%
238990	All Other Specialty Trade Contractors	3.3301%	84.40%
541330	Engineering Services	2.6148%	87.02%
238910	Site Preparation Contractors	2.1558%	89.17%
238110	Poured Concrete Foundation and Structure Contractors	1.2048%	90.38%
238220	Plumbing, Heating, and Air-Conditioning Contractors	1.0930%	91.47%
238390	Other Building Finishing Contractors	0.8497%	92.32%
237110	Water and Sewer Line and Related Structures Construction	0.7674%	93.09%
237990	Other Heavy and Civil Engineering Construction	0.7211%	93.81%
423510	Metal Service Centers and Other Metal Merchant Wholesalers	0.7135%	94.52%
484220	Specialized Freight (except Used Goods) Trucking, Local	0.7097%	95.23%
423390	Other Construction Material Merchant Wholesalers	0.5479%	95.78%

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NAICS	NAICS Code Description	Pct Total Contract Dollars	Cumulative Pct Total Contract Dollars
238120	Structural Steel and Precast Concrete Contractors	0.4625%	96.24%
423310	Lumber, Plywood, Millwork, and Wood Panel Merchant Wholesalers	0.4204%	96.66%
238310	Drywall and Insulation Contractors	0.2872%	96.95%
237120	Oil and Gas Pipeline and Related Structures Construction	0.2697%	97.22%
561730	Landscaping Services	0.2521%	97.47%
423320	Brick, Stone, and Related Construction Material Merchant Wholesalers	0.2478%	97.72%
238190	Other Foundation, Structure, and Building Exterior Contractors	0.2236%	97.94%
238290	Other Building Equipment Contractors	0.1990%	98.14%
238320	Painting and Wall Covering Contractors	0.1958%	98.34%
561990	All Other Support Services	0.1911%	98.53%
332999	All Other Miscellaneous Fabricated Metal Product Manufacturing	0.1468%	98.68%
213112	Support Activities for Oil and Gas Operations	0.1467%	98.82%
238350	Finish Carpentry Contractors	0.1467%	98.97%
423840	Industrial Supplies Merchant Wholesalers	0.1080%	99.08%
238140	Masonry Contractors	0.1066%	99.18%
236210	Industrial Building Construction	0.0958%	99.28%
238330	Flooring Contractors	0.0888%	99.37%
238150	Glass and Glazing Contractors	0.0798%	99.45%
238170	Siding Contractors	0.0690%	99.52%
811122	Automotive Glass Replacement Shops	0.0687%	99.59%
238160	Roofing Contractors	0.0619%	99.65%
423110	Automobile and Other Motor Vehicle Merchant Wholesalers	0.0404%	99.69%
562111	Solid Waste Collection	0.0398%	99.73%
324121	Asphalt Paving Mixture and Block Manufacturing	0.0334%	99.76%
333991	Power-Driven Handtool Manufacturing	0.0308%	99.79%

NAICS	NAICS Code Description	Pct Total Contract Dollars	Cumulative Pct Total Contract Dollars
541380	Testing Laboratories	0.0298%	99.82%
332312	Fabricated Structural Metal Manufacturing	0.0227%	99.85%
327320	Ready-Mix Concrete Manufacturing	0.0160%	99.86%
238340	Tile and Terrazzo Contractors	0.0131%	99.87%
484110	General Freight Trucking, Local	0.0125%	99.89%
213111	Drilling Oil and Gas Wells	0.0117%	99.90%
326191	Plastics Plumbing Fixture Manufacturing	0.0096%	99.91%
334511	Search, Detection, Navigation, Guidance, Aeronautical, and Nautical System and Instrument Manufacturing	0.0081%	99.92%
333120	Construction Machinery Manufacturing	0.0072%	99.92%
212321	Construction Sand and Gravel Mining	0.0070%	99.93%
562910	Remediation Services	0.0062%	99.94%
423220	Home Furnishing Merchant Wholesalers	0.0058%	99.94%
423830	Industrial Machinery and Equipment Merchant Wholesalers	0.0052%	99.95%
333316	Photographic and Photocopying Equipment Manufacturing	0.0052%	99.95%
325613	Surface Active Agent Manufacturing	0.0051%	99.96%
541370	Surveying and Mapping (except Geophysical) Services	0.0050%	99.96%
562920	Materials Recovery Facilities	0.0049%	99.97%
327322	#NO MATCH	0.0044%	99.97%
314910	Textile Bag and Canvas Mills	0.0040%	99.98%
332216	Saw Blade and Handtool Manufacturing	0.0040%	99.98%
811310	Commercial and Industrial Machinery and Equipment (except Automotive and Electronic) Repair and Maintenance	0.0024%	99.98%
561710	Exterminating and Pest Control Services	0.0022%	99.99%
332322	Sheet Metal Work Manufacturing	0.0021%	99.99%
541620	Environmental Consulting Services	0.0019%	99.99%
531120	Lessors of Nonresidential Buildings (except Miniwarehouses)	0.0017%	99.99%

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NAICS	NAICS Code Description	Pct Total Contract Dollars	Cumulative Pct Total Contract Dollars
541922	Commercial Photography	0.0013%	99.99%
493190	Other Warehousing and Storage	0.0012%	99.99%
331110	Iron and Steel Mills and Ferroalloy Manufacturing	0.0011%	99.99%
561720	Janitorial Services	0.0010%	100.00%
423720	Plumbing and Heating Equipment and Supplies (Hydronics) Merchant Wholesalers	0.0010%	100.00%
423120	Motor Vehicle Supplies and New Parts Merchant Wholesalers	0.0009%	100.00%
423990	Other Miscellaneous Durable Goods Merchant Wholesalers	0.0008%	100.00%
541512	Computer Systems Design Services	0.0007%	100.00%
423710	Hardware Merchant Wholesalers	0.0006%	100.00%
423810	Construction and Mining (except Oil Well) Machinery and Equipment Merchant Wholesalers	0.0005%	100.00%
315280	Other Cut and Sew Apparel Manufacturing	0.0002%	100.00%
Total			100.0%

Source: CHA analysis of TxDOT data

**Table D-6: Industry Percentage Distribution of Contracts by Dollars Paid
FAA Funded Prime Contracts**

NAICS	NAICS Code Description	Pct Total Contract Dollars	Cumulative Pct Total Contract Dollars
237310	Highway, Street, and Bridge Construction	81.71%	81.71%
236220	Commercial and Institutional Building Construction	7.36%	89.07%
238210	Electrical Contractors and Other Wiring Installation Contractors	3.83%	92.90%
238990	All Other Specialty Trade Contractors	3.59%	96.50%
541330	Engineering Services	1.88%	98.38%
237990	Other Heavy and Civil Engineering Construction	0.92%	99.30%
423390	Other Construction Material Merchant Wholesalers	0.70%	100.00%
Total			100.0%

Source: CHA analysis of TxDOT data

**Table D-7: Industry Percentage Distribution of Contracts by Dollars Paid
FAA Funded Subcontracts**

NAICS	NAICS Code Description	Pct Total Contract Dollars	Cumulative Pct Total Contract Dollars
237310	Highway, Street, and Bridge Construction	28.262%	28.262%
238210	Electrical Contractors and Other Wiring Installation Contractors	18.347%	46.609%
238910	Site Preparation Contractors	8.353%	54.962%
541330	Engineering Services	4.718%	59.680%
238110	Poured Concrete Foundation and Structure Contractors	4.668%	64.348%
238220	Plumbing, Heating, and Air-Conditioning Contractors	4.235%	68.583%
238390	Other Building Finishing Contractors	3.292%	71.875%
237110	Water and Sewer Line and Related Structures Construction	2.973%	74.848%
423510	Metal Service Centers and Other Metal Merchant Wholesalers	2.764%	77.612%

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NAICS	NAICS Code Description	Pct Total Contract Dollars	Cumulative Pct Total Contract Dollars
484220	Specialized Freight (except Used Goods) Trucking, Local	2.750%	80.362%
238990	All Other Specialty Trade Contractors	2.572%	82.934%
238120	Structural Steel and Precast Concrete Contractors	1.792%	84.726%
423310	Lumber, Plywood, Millwork, and Wood Panel Merchant Wholesalers	1.629%	86.355%
238310	Drywall and Insulation Contractors	1.113%	87.467%
237120	Oil and Gas Pipeline and Related Structures Construction	1.045%	88.512%
561730	Landscaping Services	0.977%	89.489%
423320	Brick, Stone, and Related Construction Material Merchant Wholesalers	0.960%	90.449%
238190	Other Foundation, Structure, and Building Exterior Contractors	0.866%	91.316%
238290	Other Building Equipment Contractors	0.771%	92.087%
238320	Painting and Wall Covering Contractors	0.759%	92.845%
561990	All Other Support Services	0.740%	93.586%
332999	All Other Miscellaneous Fabricated Metal Product Manufacturing	0.569%	94.154%
213112	Support Activities for Oil and Gas Operations	0.568%	94.723%
238350	Finish Carpentry Contractors	0.568%	95.291%
236220	Commercial and Institutional Building Construction	0.458%	95.749%
423840	Industrial Supplies Merchant Wholesalers	0.418%	96.167%
238140	Masonry Contractors	0.413%	96.580%
236210	Industrial Building Construction	0.371%	96.951%
238330	Flooring Contractors	0.344%	97.295%
238150	Glass and Glazing Contractors	0.309%	97.605%
238170	Siding Contractors	0.267%	97.872%
811122	Automotive Glass Replacement Shops	0.266%	98.138%
238160	Roofing Contractors	0.240%	98.378%

NAICS	NAICS Code Description	Pct Total Contract Dollars	Cumulative Pct Total Contract Dollars
423110	Automobile and Other Motor Vehicle Merchant Wholesalers	0.157%	98.535%
562111	Solid Waste Collection	0.154%	98.689%
237990	Other Heavy and Civil Engineering Construction	0.148%	98.837%
324121	Asphalt Paving Mixture and Block Manufacturing	0.129%	98.967%
333991	Power-Driven Handtool Manufacturing	0.119%	99.086%
541380	Testing Laboratories	0.115%	99.202%
423390	Other Construction Material Merchant Wholesalers	0.112%	99.313%
332312	Fabricated Structural Metal Manufacturing	0.088%	99.401%
327320	Ready-Mix Concrete Manufacturing	0.062%	99.463%
238340	Tile and Terrazzo Contractors	0.051%	99.514%
484110	General Freight Trucking, Local	0.048%	99.562%
213111	Drilling Oil and Gas Wells	0.046%	99.608%
326191	Plastics Plumbing Fixture Manufacturing	0.037%	99.645%
334511	Search, Detection, Navigation, Guidance, Aeronautical, and Nautical System and Instrument Manufacturing	0.031%	99.676%
333120	Construction Machinery Manufacturing	0.028%	99.704%
212321	Construction Sand and Gravel Mining	0.027%	99.731%
562910	Remediation Services	0.024%	99.755%
423220	Home Furnishing Merchant Wholesalers	0.022%	99.778%
423830	Industrial Machinery and Equipment Merchant Wholesalers	0.020%	99.798%
333316	Photographic and Photocopying Equipment Manufacturing	0.020%	99.818%
325613	Surface Active Agent Manufacturing	0.020%	99.838%
541370	Surveying and Mapping (except Geophysical) Services	0.019%	99.857%
562920	Materials Recovery Facilities	0.019%	99.876%
327322	#NO MATCH	0.017%	99.893%
314910	Textile Bag and Canvas Mills	0.016%	99.909%
332216	Saw Blade and Handtool Manufacturing	0.015%	99.924%

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NAICS	NAICS Code Description	Pct Total Contract Dollars	Cumulative Pct Total Contract Dollars
811310	Commercial and Industrial Machinery and Equipment (except Automotive and Electronic) Repair and Maintenance	0.009%	99.934%
561710	Exterminating and Pest Control Services	0.009%	99.942%
332322	Sheet Metal Work Manufacturing	0.008%	99.950%
541620	Environmental Consulting Services	0.007%	99.958%
531120	Lessors of Nonresidential Buildings (except Miniwarehouses)	0.007%	99.964%
541922	Commercial Photography	0.005%	99.970%
493190	Other Warehousing and Storage	0.005%	99.974%
331110	Iron and Steel Mills and Ferroalloy Manufacturing	0.004%	99.979%
561720	Janitorial Services	0.004%	99.982%
423720	Plumbing and Heating Equipment and Supplies (Hydronics) Merchant Wholesalers	0.004%	99.986%
423120	Motor Vehicle Supplies and New Parts Merchant Wholesalers	0.003%	99.989%
423990	Other Miscellaneous Durable Goods Merchant Wholesalers	0.003%	99.992%
541512	Computer Systems Design Services	0.003%	99.995%
423710	Hardware Merchant Wholesalers	0.002%	99.997%
423810	Construction and Mining (except Oil Well) Machinery and Equipment Merchant Wholesalers	0.002%	99.999%
315280	Other Cut and Sew Apparel Manufacturing	0.001%	100.000%
Total			100.0%

Source: CHA analysis of TxDOT data

**Table D-8: Table D8 State Percentage Distribution of Contracts by Dollars Paid
FAA Funded Contracts**

State	Pct Total Contract Dollars
TX	95.76%
LA	3.76%
FL	0.21%
IL	0.10%
PA	0.07%
MS	0.04%
NY	0.04%
OK	0.01%
AZ	0.01%
Total	100.0%

Source: CHA analysis of TxDOT data

3. State Funded Contracts

**Table D-9: Industry Percentage Distribution of Contracts by Dollars Paid
All State Funded Contracts**

NAICS	NAICS Code Description	Pct Total Contract Dollars	Cumulative Pct Total Contract Dollars
237310	Highway, Street, and Bridge Construction	39.950920%	39.95%
541330	Engineering Services	20.553515%	60.50%
561320	Temporary Help Services	5.915283%	66.42%
561730	Landscaping Services	3.237116%	69.66%
541512	Computer Systems Design Services	3.219350%	72.88%
238210	Electrical Contractors and Other Wiring Installation Contractors	2.154370%	75.03%
238120	Structural Steel and Precast Concrete Contractors	2.090466%	77.12%
541611	Administrative Management and General Management Consulting Services	1.976815%	79.10%
541420	Industrial Design Services	1.947218%	81.05%

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NAICS	NAICS Code Description	Pct Total Contract Dollars	Cumulative Pct Total Contract Dollars
541620	Environmental Consulting Services	1.722468%	82.77%
238910	Site Preparation Contractors	1.434166%	84.20%
327320	Ready-Mix Concrete Manufacturing	1.279845%	85.48%
511210	Software Publishers	1.099803%	86.58%
236210	Industrial Building Construction	0.840608%	87.42%
423320	Brick, Stone, and Related Construction Material Merchant Wholesalers	0.782799%	88.20%
237990	Other Heavy and Civil Engineering Construction	0.741497%	88.95%
423430	Computer and Computer Peripheral Equipment and Software Merchant Wholesalers	0.671076%	89.62%
484220	Specialized Freight (except Used Goods) Trucking, Local	0.628043%	90.25%
238990	All Other Specialty Trade Contractors	0.608306%	90.85%
541310	Architectural Services	0.527655%	91.38%
237110	Water and Sewer Line and Related Structures Construction	0.491072%	91.87%
541110	Offices of Lawyers	0.481670%	92.35%
541380	Testing Laboratories	0.429538%	92.78%
238110	Poured Concrete Foundation and Structure Contractors	0.411327%	93.19%
339950	Sign Manufacturing	0.401109%	93.60%
541370	Surveying and Mapping (except Geophysical) Services	0.381777%	93.98%
333120	Construction Machinery Manufacturing	0.369596%	94.35%
561990	All Other Support Services	0.356867%	94.70%
562211	Hazardous Waste Treatment and Disposal	0.331224%	95.04%
323111	Commercial Printing (except Screen and Books)	0.304300%	95.34%
327332	Concrete Pipe Manufacturing	0.295019%	95.63%
238220	Plumbing, Heating, and Air-Conditioning Contractors	0.294863%	95.93%
423610	Electrical Apparatus and Equipment, Wiring Supplies, and Related Equipment Merchant Wholesalers	0.282748%	96.21%
331110	Iron and Steel Mills and Ferroalloy Manufacturing	0.275896%	96.49%

NAICS	NAICS Code Description	Pct Total Contract Dollars	Cumulative Pct Total Contract Dollars
541810	Advertising Agencies	0.275044%	96.76%
424720	Petroleum and Petroleum Products Merchant Wholesalers (except Bulk Stations and Terminals)	0.266372%	97.03%
484110	General Freight Trucking, Local	0.247490%	97.28%
562910	Remediation Services	0.246780%	97.52%
524210	Insurance Agencies and Brokerages	0.218351%	97.74%
324121	Asphalt Paving Mixture and Block Manufacturing	0.194277%	97.94%
624230	Emergency and Other Relief Services	0.177271%	98.11%
423810	Construction and Mining (except Oil Well) Machinery and Equipment Merchant Wholesalers	0.165828%	98.28%
327410	Lime Manufacturing	0.161838%	98.44%
424710	Petroleum Bulk Stations and Terminals	0.137799%	98.58%
541211	Offices of Certified Public Accountants	0.127547%	98.71%
541820	Public Relations Agencies	0.126284%	98.83%
238140	Masonry Contractors	0.098922%	98.93%
237120	Oil and Gas Pipeline and Related Structures Construction	0.097272%	99.03%
518210	Data Processing, Hosting, and Related Services	0.083391%	99.11%
562111	Solid Waste Collection	0.066432%	99.18%
424690	Other Chemical and Allied Products Merchant Wholesalers	0.066235%	99.25%
541990	All Other Professional, Scientific, and Technical Services	0.057073%	99.30%
238190	Other Foundation, Structure, and Building Exterior Contractors	0.055371%	99.36%
327999	All Other Miscellaneous Nonmetallic Mineral Product Manufacturing	0.053398%	99.41%
238320	Painting and Wall Covering Contractors	0.038626%	99.45%
531320	Offices of Real Estate Appraisers	0.036116%	99.49%
115112	Soil Preparation, Planting, and Cultivating	0.033660%	99.52%
541360	Geophysical Surveying and Mapping Services	0.032160%	99.55%

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NAICS	NAICS Code Description	Pct Total Contract Dollars	Cumulative Pct Total Contract Dollars
541618	Other Management Consulting Services	0.029171%	99.58%
332618	Other Fabricated Wire Product Manufacturing	0.028165%	99.61%
221320	Sewage Treatment Facilities	0.025852%	99.64%
561790	Other Services to Buildings and Dwellings	0.024971%	99.66%
332312	Fabricated Structural Metal Manufacturing	0.024442%	99.68%
331511	Iron Foundries	0.022482%	99.71%
541320	Landscape Architectural Services	0.022409%	99.73%
519110	News Syndicates	0.020132%	99.75%
541613	Marketing Consulting Services	0.017407%	99.77%
238390	Other Building Finishing Contractors	0.017187%	99.78%
221310	Water Supply and Irrigation Systems	0.016591%	99.80%
325220	Artificial and Synthetic Fibers and Filaments Manufacturing	0.015418%	99.82%
562119	Other Waste Collection	0.014996%	99.83%
236220	Commercial and Institutional Building Construction	0.014445%	99.85%
541690	Other Scientific and Technical Consulting Services	0.012636%	99.86%
512110	Motion Picture and Video Production	0.011693%	99.87%
237210	Land Subdivision	0.010655%	99.88%
333991	Power-Driven Handtool Manufacturing	0.009713%	99.89%
423510	Metal Service Centers and Other Metal Merchant Wholesalers	0.008498%	99.90%
423390	Other Construction Material Merchant Wholesalers	0.007435%	99.91%
541910	Marketing Research and Public Opinion Polling	0.007294%	99.91%
213111	Drilling Oil and Gas Wells	0.006583%	99.92%
327331	Concrete Block and Brick Manufacturing	0.006245%	99.93%
238170	Siding Contractors	0.006200%	99.93%
332322	Sheet Metal Work Manufacturing	0.005472%	99.94%
332323	Ornamental and Architectural Metal Work Manufacturing	0.005124%	99.94%
423840	Industrial Supplies Merchant Wholesalers	0.005106%	99.95%

NAICS	NAICS Code Description	Pct Total Contract Dollars	Cumulative Pct Total Contract Dollars
238340	Tile and Terrazzo Contractors	0.004798%	99.95%
561599	All Other Travel Arrangement and Reservation Services	0.004790%	99.96%
541922	Commercial Photography	0.004003%	99.96%
237130	Power and Communication Line and Related Structures Construction	0.003999%	99.97%
561612	Security Guards and Patrol Services	0.003377%	99.97%
561720	Janitorial Services	0.003354%	99.97%
562112	Hazardous Waste Collection	0.003030%	99.98%
212311	Dimension Stone Mining and Quarrying	0.002710%	99.98%
332999	All Other Miscellaneous Fabricated Metal Product Manufacturing	0.002653%	99.98%
424950	Paint, Varnish, and Supplies Merchant Wholesalers	0.002466%	99.98%
238350	Finish Carpentry Contractors	0.002284%	99.99%
423120	Motor Vehicle Supplies and New Parts Merchant Wholesalers	0.002244%	99.99%
332911	Industrial Valve Manufacturing	0.001301%	99.99%
332311	Prefabricated Metal Building and Component Manufacturing	0.001079%	99.99%
238310	Drywall and Insulation Contractors	0.000956%	99.99%
333517	Machine Tool Manufacturing	0.000923%	99.99%
541714	Research and Development in Biotechnology (except Nanobiotechnology)	0.000739%	99.99%
236116	New Multifamily Housing Construction (except For-Sale Builders)	0.000713%	99.99%
811490	Other Personal and Household Goods Repair and Maintenance	0.000649%	99.99%
326211	Tire Manufacturing (except Retreading)	0.000544%	99.99%
424910	Farm Supplies Merchant Wholesalers	0.000485%	100.00%
112990	All Other Animal Production	0.000482%	100.00%
519190	All Other Information Services	0.000444%	100.00%
325314	Fertilizer (Mixing Only) Manufacturing	0.000401%	100.00%

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NAICS	NAICS Code Description	Pct Total Contract Dollars	Cumulative Pct Total Contract Dollars
488490	Other Support Activities for Road Transportation	0.000359%	100.00%
321114	Wood Preservation	0.000335%	100.00%
213112	Support Activities for Oil and Gas Operations	0.000311%	100.00%
541930	Translation and Interpretation Services	0.000293%	100.00%
531120	Lessors of Nonresidential Buildings (except Miniwarehouses)	0.000276%	100.00%
541511	Custom Computer Programming Services	0.000263%	100.00%
491110	Postal Service	0.000180%	100.00%
532289	All Other Consumer Goods Rental	0.000174%	100.00%
424990	Other Miscellaneous Nondurable Goods Merchant Wholesalers	0.000144%	100.00%
339999	All Other Miscellaneous Manufacturing	0.000142%	100.00%
541219	Other Accounting Services	0.000127%	100.00%
423830	Industrial Machinery and Equipment Merchant Wholesalers	0.000118%	100.00%
492110	Couriers and Express Delivery Services	0.000097%	100.00%
519130	Internet Publishing and Broadcasting and Web Search Portals	0.000074%	100.00%
811121	Automotive Body, Paint, and Interior Repair and Maintenance	0.000064%	100.00%
562991	Septic Tank and Related Services	0.000052%	100.00%
238290	Other Building Equipment Contractors	0.000049%	100.00%
339940	Office Supplies (except Paper) Manufacturing	0.000048%	100.00%
532281	Formal Wear and Costume Rental	0.000048%	100.00%
711510	Independent Artists, Writers, and Performers	0.000038%	100.00%
517312	Wireless Telecommunications Carriers (except Satellite)	0.000029%	100.00%
531130	Lessors of Miniwarehouses and Self-Storage Units	0.000028%	100.00%
334614	Software and Other Prerecorded Compact Disc, Tape, and Record Reproducing	0.000024%	100.00%
423850	Service Establishment Equipment and Supplies Merchant Wholesalers	0.000022%	100.00%

NAICS	NAICS Code Description	Pct Total Contract Dollars	Cumulative Pct Total Contract Dollars
441320	Tire Dealers	0.000019%	100.00%
811198	All Other Automotive Repair and Maintenance	0.000018%	100.00%
315280	Other Cut and Sew Apparel Manufacturing	0.000016%	100.00%
812930	Parking Lots and Garages	0.000013%	100.00%
811122	Automotive Glass Replacement Shops	0.000011%	100.00%
424120	Stationery and Office Supplies Merchant Wholesalers	0.000007%	100.00%
221210	Natural Gas Distribution	0.000005%	100.00%
561311	Employment Placement Agencies	0.000004%	100.00%
332710	Machine Shops	0.000003%	100.00%
921110	Executive Offices	0.000002%	100.00%
541430	Graphic Design Services	0.000001%	100.00%
Total			100.0%

Source: CHA analysis of TxDOT data

**Table D-10: Industry Percentage Distribution of Contracts by Dollars Paid
State Funded Prime Contracts**

NAICS	NAICS Code Description	Pct Total Contract Dollars	Cumulative Pct Total Contract Dollars
237310	Highway, Street, and Bridge Construction	50.87%	50.87%
541330	Engineering Services	24.21%	75.08%
561320	Temporary Help Services	7.79%	82.86%
541611	Administrative Management and General Management Consulting Services	3.05%	85.92%
541620	Environmental Consulting Services	1.83%	87.75%
511210	Software Publishers	1.72%	89.47%
541512	Computer Systems Design Services	1.05%	90.53%
423430	Computer and Computer Peripheral Equipment and Software Merchant Wholesalers	1.05%	91.58%
561730	Landscaping Services	0.80%	92.38%
541110	Offices of Lawyers	0.75%	93.13%

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NAICS	NAICS Code Description	Pct Total Contract Dollars	Cumulative Pct Total Contract Dollars
339950	Sign Manufacturing	0.63%	93.76%
238910	Site Preparation Contractors	0.56%	94.32%
333120	Construction Machinery Manufacturing	0.54%	94.86%
323111	Commercial Printing (except Screen and Books)	0.45%	95.31%
423610	Electrical Apparatus and Equipment, Wiring Supplies, and Related Equipment Merchant Wholesalers	0.44%	95.75%
541810	Advertising Agencies	0.43%	96.19%
424720	Petroleum and Petroleum Products Merchant Wholesalers (except Bulk Stations and Terminals)	0.42%	96.60%
484220	Specialized Freight (except Used Goods) Trucking, Local	0.41%	97.02%
524210	Insurance Agencies and Brokerages	0.34%	97.36%
324121	Asphalt Paving Mixture and Block Manufacturing	0.30%	97.66%
561990	All Other Support Services	0.28%	97.95%
562910	Remediation Services	0.28%	98.23%
238990	All Other Specialty Trade Contractors	0.26%	98.49%
423810	Construction and Mining (except Oil Well) Machinery and Equipment Merchant Wholesalers	0.24%	98.73%
424710	Petroleum Bulk Stations and Terminals	0.22%	98.95%
541211	Offices of Certified Public Accountants	0.19%	99.14%
541310	Architectural Services	0.19%	99.33%
237110	Water and Sewer Line and Related Structures Construction	0.18%	99.51%
541420	Industrial Design Services	0.13%	99.64%
518210	Data Processing, Hosting, and Related Services	0.12%	99.76%
424690	Other Chemical and Allied Products Merchant Wholesalers	0.10%	99.87%
238210	Electrical Contractors and Other Wiring Installation Contractors	0.05%	99.92%
519110	News Syndicates	0.03%	99.95%

NAICS	NAICS Code Description	Pct Total Contract Dollars	Cumulative Pct Total Contract Dollars
624230	Emergency and Other Relief Services	0.03%	99.98%
562119	Other Waste Collection	0.02%	100.00%
Total			100.0%

Source: CHA analysis of TxDOT data

**Table D-11: Industry Percentage Distribution of Contracts by Dollars Paid
State Funded Subcontracts**

NAICS	NAICS Code Description	Pct Total Contract Dollars	Cumulative Pct Total Contract Dollars
237310	Highway, Street, and Bridge Construction	20.702324%	20.70%
541330	Engineering Services	14.106961%	34.81%
561730	Landscaping Services	7.534928%	42.34%
541512	Computer Systems Design Services	7.039539%	49.38%
238210	Electrical Contractors and Other Wiring Installation Contractors	5.857479%	55.24%
238120	Structural Steel and Precast Concrete Contractors	5.776066%	61.02%
541420	Industrial Design Services	5.147254%	66.16%
327320	Ready-Mix Concrete Manufacturing	3.536278%	69.70%
238910	Site Preparation Contractors	2.983664%	72.68%
561320	Temporary Help Services	2.616805%	75.30%
236210	Industrial Building Construction	2.322644%	77.62%
423320	Brick, Stone, and Related Construction Material Merchant Wholesalers	2.162915%	79.79%
237990	Other Heavy and Civil Engineering Construction	2.048795%	81.84%
541620	Environmental Consulting Services	1.525023%	83.36%
238990	All Other Specialty Trade Contractors	1.224757%	84.59%
541380	Testing Laboratories	1.186835%	85.77%
238110	Poured Concrete Foundation and Structure Contractors	1.136519%	86.91%
541310	Architectural Services	1.124566%	88.03%

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NAICS	NAICS Code Description	Pct Total Contract Dollars	Cumulative Pct Total Contract Dollars
541370	Surveying and Mapping (except Geophysical) Services	1.054870%	89.09%
237110	Water and Sewer Line and Related Structures Construction	1.035806%	90.12%
484220	Specialized Freight (except Used Goods) Trucking, Local	1.003964%	91.13%
562211	Hazardous Waste Treatment and Disposal	0.915190%	92.04%
327332	Concrete Pipe Manufacturing	0.815152%	92.86%
238220	Plumbing, Heating, and Air-Conditioning Contractors	0.814721%	93.67%
331110	Iron and Steel Mills and Ferroalloy Manufacturing	0.762314%	94.44%
484110	General Freight Trucking, Local	0.683828%	95.12%
561990	All Other Support Services	0.485484%	95.60%
327410	Lime Manufacturing	0.447168%	96.05%
624230	Emergency and Other Relief Services	0.440828%	96.49%
541820	Public Relations Agencies	0.348930%	96.84%
238140	Masonry Contractors	0.273326%	97.11%
237120	Oil and Gas Pipeline and Related Structures Construction	0.268767%	97.38%
562910	Remediation Services	0.189422%	97.57%
562111	Solid Waste Collection	0.183556%	97.76%
541990	All Other Professional, Scientific, and Technical Services	0.157696%	97.91%
238190	Other Foundation, Structure, and Building Exterior Contractors	0.152993%	98.07%
327999	All Other Miscellaneous Nonmetallic Mineral Product Manufacturing	0.147541%	98.21%
238320	Painting and Wall Covering Contractors	0.106725%	98.32%
531320	Offices of Real Estate Appraisers	0.099791%	98.42%
115112	Soil Preparation, Planting, and Cultivating	0.093005%	98.51%
541360	Geophysical Surveying and Mapping Services	0.088860%	98.60%
541611	Administrative Management and General Management Consulting Services	0.084209%	98.69%

NAICS	NAICS Code Description	Pct Total Contract Dollars	Cumulative Pct Total Contract Dollars
541618	Other Management Consulting Services	0.080601%	98.77%
332618	Other Fabricated Wire Product Manufacturing	0.077820%	98.85%
221320	Sewage Treatment Facilities	0.071432%	98.92%
561790	Other Services to Buildings and Dwellings	0.068996%	98.99%
332312	Fabricated Structural Metal Manufacturing	0.067534%	99.05%
333120	Construction Machinery Manufacturing	0.065636%	99.12%
331511	Iron Foundries	0.062118%	99.18%
541320	Landscape Architectural Services	0.061916%	99.24%
541613	Marketing Consulting Services	0.048098%	99.29%
238390	Other Building Finishing Contractors	0.047489%	99.34%
221310	Water Supply and Irrigation Systems	0.045842%	99.38%
325220	Artificial and Synthetic Fibers and Filaments Manufacturing	0.042601%	99.43%
323111	Commercial Printing (except Screen and Books)	0.040831%	99.47%
236220	Commercial and Institutional Building Construction	0.039911%	99.51%
541690	Other Scientific and Technical Consulting Services	0.034915%	99.54%
512110	Motion Picture and Video Production	0.032308%	99.58%
237210	Land Subdivision	0.029440%	99.60%
423810	Construction and Mining (except Oil Well) Machinery and Equipment Merchant Wholesalers	0.028248%	99.63%
333991	Power-Driven Handtool Manufacturing	0.026838%	99.66%
423510	Metal Service Centers and Other Metal Merchant Wholesalers	0.023481%	99.68%
423390	Other Construction Material Merchant Wholesalers	0.020544%	99.70%
541910	Marketing Research and Public Opinion Polling	0.020154%	99.72%
213111	Drilling Oil and Gas Wells	0.018188%	99.74%
327331	Concrete Block and Brick Manufacturing	0.017255%	99.76%
238170	Siding Contractors	0.017131%	99.78%
332322	Sheet Metal Work Manufacturing	0.015119%	99.79%
518210	Data Processing, Hosting, and Related Services	0.014235%	99.81%

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NAICS	NAICS Code Description	Pct Total Contract Dollars	Cumulative Pct Total Contract Dollars
332323	Ornamental and Architectural Metal Work Manufacturing	0.014159%	99.82%
423840	Industrial Supplies Merchant Wholesalers	0.014107%	99.83%
238340	Tile and Terrazzo Contractors	0.013256%	99.85%
561599	All Other Travel Arrangement and Reservation Services	0.013235%	99.86%
541211	Offices of Certified Public Accountants	0.012988%	99.87%
541922	Commercial Photography	0.011060%	99.88%
237130	Power and Communication Line and Related Structures Construction	0.011050%	99.90%
561612	Security Guards and Patrol Services	0.009332%	99.91%
561720	Janitorial Services	0.009266%	99.91%
562119	Other Waste Collection	0.008599%	99.92%
562112	Hazardous Waste Collection	0.008372%	99.93%
212311	Dimension Stone Mining and Quarrying	0.007489%	99.94%
332999	All Other Miscellaneous Fabricated Metal Product Manufacturing	0.007330%	99.95%
424950	Paint, Varnish, and Supplies Merchant Wholesalers	0.006813%	99.95%
238350	Finish Carpentry Contractors	0.006310%	99.96%
423120	Motor Vehicle Supplies and New Parts Merchant Wholesalers	0.006201%	99.97%
332911	Industrial Valve Manufacturing	0.003594%	99.97%
332311	Prefabricated Metal Building and Component Manufacturing	0.002980%	99.97%
238310	Drywall and Insulation Contractors	0.002642%	99.97%
333517	Machine Tool Manufacturing	0.002552%	99.98%
541714	Research and Development in Biotechnology (except Nanobiotechnology)	0.002042%	99.98%
236116	New Multifamily Housing Construction (except For-Sale Builders)	0.001971%	99.98%
811490	Other Personal and Household Goods Repair and Maintenance	0.001793%	99.98%
326211	Tire Manufacturing (except Retreading)	0.001502%	99.98%

NAICS	NAICS Code Description	Pct Total Contract Dollars	Cumulative Pct Total Contract Dollars
424910	Farm Supplies Merchant Wholesalers	0.001340%	99.99%
112990	All Other Animal Production	0.001333%	99.99%
519190	All Other Information Services	0.001227%	99.99%
325314	Fertilizer (Mixing Only) Manufacturing	0.001108%	99.99%
488490	Other Support Activities for Road Transportation	0.000991%	99.99%
321114	Wood Preservation	0.000925%	99.99%
213112	Support Activities for Oil and Gas Operations	0.000859%	99.99%
541930	Translation and Interpretation Services	0.000808%	99.99%
541110	Offices of Lawyers	0.000800%	99.99%
531120	Lessors of Nonresidential Buildings (except Miniwarehouses)	0.000763%	99.99%
541511	Custom Computer Programming Services	0.000726%	100.00%
491110	Postal Service	0.000498%	100.00%
532289	All Other Consumer Goods Rental	0.000480%	100.00%
424990	Other Miscellaneous Nondurable Goods Merchant Wholesalers	0.000398%	100.00%
339999	All Other Miscellaneous Manufacturing	0.000393%	100.00%
541219	Other Accounting Services	0.000352%	100.00%
423830	Industrial Machinery and Equipment Merchant Wholesalers	0.000325%	100.00%
492110	Couriers and Express Delivery Services	0.000268%	100.00%
519130	Internet Publishing and Broadcasting and Web Search Portals	0.000204%	100.00%
811121	Automotive Body, Paint, and Interior Repair and Maintenance	0.000177%	100.00%
562991	Septic Tank and Related Services	0.000144%	100.00%
238290	Other Building Equipment Contractors	0.000135%	100.00%
339940	Office Supplies (except Paper) Manufacturing	0.000134%	100.00%
532281	Formal Wear and Costume Rental	0.000132%	100.00%
711510	Independent Artists, Writers, and Performers	0.000105%	100.00%

NAICS	NAICS Code Description	Pct Total Contract Dollars	Cumulative Pct Total Contract Dollars
517312	Wireless Telecommunications Carriers (except Satellite)	0.000079%	100.00%
531130	Lessors of Miniwarehouses and Self-Storage Units	0.000078%	100.00%
334614	Software and Other Prerecorded Compact Disc, Tape, and Record Reproducing	0.000067%	100.00%
423850	Service Establishment Equipment and Supplies Merchant Wholesalers	0.000061%	100.00%
441320	Tire Dealers	0.000052%	100.00%
811198	All Other Automotive Repair and Maintenance	0.000050%	100.00%
315280	Other Cut and Sew Apparel Manufacturing	0.000043%	100.00%
812930	Parking Lots and Garages	0.000035%	100.00%
811122	Automotive Glass Replacement Shops	0.000029%	100.00%
424120	Stationery and Office Supplies Merchant Wholesalers	0.000019%	100.00%
221210	Natural Gas Distribution	0.000013%	100.00%
561311	Employment Placement Agencies	0.000012%	100.00%
332710	Machine Shops	0.000008%	100.00%
921110	Executive Offices	0.000004%	100.00%
541430	Graphic Design Services	0.000004%	100.00%
Total			100.0%

Source: CHA analysis of TxDOT data

Table D-12: State Percentage Distribution of Contracts by Dollars Paid

State Funded Contracts

State	Pct Total Contract Dollars
TX	92.185%
MD	2.101%
FL	1.095%
IL	0.966%
CA	0.798%

State	Pct Total Contract Dollars
NM	0.646%
LA	0.502%
MS	0.398%
IN	0.342%
AZ	0.333%
PA	0.129%
AR	0.109%
NE	0.068%
OH	0.054%
VA	0.049%
GA	0.033%
TN	0.032%
MA	0.031%
NC	0.028%
OK	0.022%
CO	0.018%
MI	0.015%
NJ	0.011%
IA	0.008%
MO	0.008%
WI	0.007%
VT	0.007%
KS	0.005%
UT	0.001%
Total	100.0%

Source: CHA analysis of TxDOT data

