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16. Abstract

In *Croson,* the U.S. Supreme Court adopted strict new standards of judicial review for testing the legality of race-conscious state and local public purchasing and contracting programs. To meet the new standards, a government entity must assemble a public record documenting the extent to which problems of overt and institutional discrimination exist in the local business community. Furthermore, remedies selected by an entity to deal with the problems of discrimination in business activities must focus on those minority groups and on those industry groups for which documented evidence of discrimination exists. Additionally, any remedial activities must be logically related to the barriers or problems identified.

This report describes the development of a set of detailed survey instruments that provide much of the information that is crucial to meeting the new legal standards for race-conscious contracting and purchasing preference programs. The results of this survey can provide TxDOT with a better understanding of the key characteristics of the businesses they interact with. The surveys provide detailed information on variables such as ownership and control, educational background of the owners, most important areas of work, legal form of firm organization, company size, capacity, and potential. The surveys also provide detailed information regarding TxDOT contracting procedures and practices, as well as private sector economic factors that affect the ability of contractors and vendors to procure contracts with the Department. Finally, the surveys elicit information on the barriers to participation business owners perceive to be due to discrimination based on their race, ethnicity, gender, or disability.

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by

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Research Project 7-980
Disadvantaged Business Enterprise (DBE) Capacity Study

conducted for the

Texas Department of Transportation

by the

LYNDON B. JOHNSON SCHOOL OF PUBLIC AFFAIRS
CENTER FOR TRANSPORTATION RESEARCH
GRADUATE SCHOOL OF BUSINESS
THE UNIVERSITY OF TEXAS AT AUSTIN

May 1994

IMPLEMENTATION

This report describes the development of a set of detailed survey instruments that provide much of the information that is crucial to meeting the new legal standards for race-conscious contracting and purchasing preference programs. The surveys provide detailed information on such variables as ownership and control, educational background of the owners, most important areas of work, legal form of firm organization, company size, capacity, and potential. The surveys also provide detailed information regarding TxDOT contracting procedures and practices, as well as private sector economic factors that affect the ability of contractors and vendors to procure contracts with the Department. Finally, the surveys elicit information on the barriers to participation business owners perceive to be a result of discrimination based on their race, ethnicity, gender, or disability. The results of this survey will provide TxDOT with a better understanding of the businesses they interact with.

PREFACE

This is the fifth report for Research Study 980, "Disadvantaged Business Enterprise (DBE) Capacity Study." The study was undertaken at the request of the Texas Department of Transportation in response to its obligations under Senate Bill 352, 72nd Texas State Legislature (Texas Revised Statutes, Article 6669C) to conduct a fact-finding study in support of a state-funds contracting and procurement program for businesses owned by minorities and women.

The authors have had joint responsibility for this study. To assist in carrying out the assignment, we recruited a number of economic, financial, business, legal, and policy experts from both the public and private sectors. This draft report was prepared by Jon Wainwright, Research Director for Project 7-980 and Research Associate at the Lyndon B. Johnson School of Public Affairs. Dr. Peter Balash provided valuable assistance in developing the survey instruments and in supervising the survey itself. Ms. Cecilia Martinez, Administrative Associate, and Mr. John Wilton, Staff Research Assistant also assisted with this survey.

Prepared in cooperation with the Texas Department of Transportation.

DISCLAIMER

The contents of this report reflect the views of the co-principal investigators, the research director, and the author of this volume, who are solely responsible for the facts and the accuracy of the data presented herein. The contents do not necessarily reflect the official views or policies of the Texas Department of Transportation. This report should be regarded strictly as preliminary.

TABLE OF CONTENTS

SUMMARY

In *Croson*, the U.S. Supreme Court adopted strict new standards of judicial review for testing the legality of race-conscious state and local public purchasing and contracting programs. To meet the new standards, a government entity must assemble a public record documenting the extent to which problems of overt and institutional discrimination exist in the local business community. Furthermore, remedies selected by an entity to deal with the problems of discrimination in business activities must focus on those minority groups and on those industry groups for which documented evidence of discrimination exists. Additionally, any remedial activities must be logically related to the barriers or problems identified. As one observer (Bendick 1990, 100) has noted, these programs "must be efficient, effective state-of-the-art instruments of minority business development," and not simply means of redistributing government contracts and purchases from one racial or ethnic group to another. Finally, governments must structure programs flexibly so that the rules can accommodate mitigating circumstances (such as lack of qualified minority contractors) as necessary on particular contracts or purchases.

More than a few contracting and purchasing set-aside programs initiated by state and local governments during both the pre-*Croson* (1972–1988) and post-*Croson* (1989–1993) eras do not adequately conform to these new standards. Many do not possess an adequate public record of discrimination, some have not targeted their programs adequately to affected groups and industries, and only a handful consistently conform to the business development principle.

Given this context, the research team for this report conceived and designed a set of detailed survey instruments to provide much of the information that is crucial to meeting the new legal standards for race-conscious contracting and purchasing preference programs. The results of this survey provide TxDOT with a better understanding of the key characteristics of the businesses they interact with. The surveys provide detailed information on variables such as ownership and control, educational background of the owners, most important areas of work, legal form of firm organization, company size, capacity, and potential. The surveys also provide detailed information regarding TxDOT contracting procedures and practices, as well as private sector economic factors that affect the ability of contractors and vendors to procure contracts with the Department. Finally, the surveys elicit information on the barriers to participation business owners perceive to be a result of discrimination based on their race, ethnicity, gender, or disability.

CHAPTER 1. INTRODUCTION AND OVERVIEW

In *Croson*, the United States Supreme Court adopted strict new standards of judicial review for testing the legality of race-conscious state and local public purchasing and contracting programs. To meet the new standards, a government entity must assemble a public record documenting the extent to which problems of overt and institutional discrimination exist in the local business community. Furthermore, remedies selected by an entity to deal with the problems of discrimination in business activities must focus on those minority groups and on those industry groups for which documented evidence of discrimination exists. Additionally, any remedial activities must be logically related to the barriers or problems identified. As one observer (Bendick 1990, 100) has noted, these programs "must be efficient, effective state-of-the-art instruments of minority business development," and not simply means of redistributing government contracts and purchases from one racial or ethnic group to another. Finally, governments must structure programs flexibly so that the rules can accommodate mitigating circumstances (such as lack of qualified minority contractors) as necessary on particular contracts or purchases.

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well as private sector economic factors that affect the ability of contractors and vendors to procure contracts with the Department. Finally, the surveys elicit information on the barriers to participation business owners perceive to be due to discrimination based on their race, ethnicity, gender, or disability.

SURVEY UNIVERSE

The research team sent surveys to 2,870 businesses in mid-July 1993. The survey targeted several types of TxDOT construction contractors and subcontractors. Construction is defined as (a) the construction of structures and facilities and (b) the maintenance, repair, and alteration of real property. For the sake of brevity, we will sometimes refer to the former as construction or construction-oriented firms and the latter as maintenance or maintenance-oriented firms. All of these firms have registered with the Department's construction divisions (D-6, D-14) or the maintenance division (D-18) or both. These firms represent the entire "official" universe of TxDOT construction firms registered and/or eligible to bid as of March 31, 1993.

The universe therefore contains those firms included on one or more of the several specialized Departmental contractor lists published and current as of March 31, 1993. These lists include, exhaustively, the following: (1) Prequalified Contractors (compiled by D-6), (2) Bidders Questionnaire Contractors (compiled by D-6), (3) Directory of Disadvantaged Business Enterprises (compiled by D-14), and (4) Maintenance bidder list (compiled by D-18). Specialized district-level lists, to the extent these exist, were not included in the scope of the survey.

The research team grouped and coded firms according to their appearance on one of these lists, and also according to their formal (in the case of construction) or informal (in the case of maintenance) status as a DBE (MBE/WBE) or non-DBE (non-MBE/WBE). These "control groups" are as follows:

A. DBE firms listed in (3) above and giving their work category as either "engineering" or "miscellaneous";
B. DBE firms listed in (3) above and giving any other work category;
C. "Prequalified" contractors listed in (1) above;
D. "Bidders Questionnaire" contractors listed in (2) above;
F. Non-MBE/WBE maintenance bidders listed in (4) above;
G. MBE/WBE maintenance bidders listed in (4) above.

Throughout the discussion below, the report will often refer to control groups A through D as "construction-oriented" and firms in groups F and G as "maintenance-oriented." The report considers groups A, B, and G to be "DBEs" and groups C, D, and F as "non-DBEs." Of the DBE control groups, the report considers groups A and B to be formally "certified" construction contractors and subcontractors and group G as informally certified maintenance contractors. The report will sometimes refer to DBEs in group A as "professional engineering and related services" firms, those in group B as "construction" DBEs, and those in group G as "maintenance" DBEs.

The research team sent a survey to each firm named on one or more of the four lists. A table on perceived barriers was included on the DBE surveys only. Overall, the team sent three separate survey instruments to six distinct groups of business enterprises. Minor adjustments were made in wording and format to accommodate firms in group A. These firms received a survey entitled "DBE Purchasing/ Professional Service Questionnaire" that attempted to take into account the differences between this somewhat disparate group and the more traditionally construction-oriented firms. All other DBEs received a survey form entitled "DBE Contractor Questionnaire" (groups B and G). The survey sent to firms in groups C, D, or F was entitled "Contractors Questionnaire." All three survey instruments are presented in the Appendix to this report.

GENERAL SURVEY FRAMEWORK

All three questionnaires shared a basic four-part format. The first section requested information regarding the basic characteristics of each firm, such as business name, general work categories, legal form of organization, firm age, ownership ethnicity/race and gender, range of revenues, number of employees, recent growth, type of work (public v. private), bonding capacity (if relevant), market area, and financing sources. These questions are designed to ascertain standard measurements of size and capability among firms, for both informational and comparative purposes.

The second section, entitled "Contracting with the Texas Department of Transportation," was intended for those firms that have performed contracts for TxDOT or subcontracted with TxDOT prime contractors since 1987. A table listing numerous types of costs, procedures, and other potential and general obstacles to contracting was presented. A range of available responses gauged the effect of each

entry upon procurement opportunities with TxDOT. Additionally, questions regarding contractor status and frequency of communication with TxDOT and TxDOT prime contracts were asked. The end of the section solicited suggestions for improvements to the bidding/contracting process and for comments concerning the firm's working relationships with TxDOT, TxDOT prime contractors, and TxDOT DBEs. These questionnaires were designed to detect differences in perception of the bidding/contacting process amongst various types of TxDOT contractors.

The next section of the survey, "Educational/Training Background," was intended for all firms save publicly held corporations, and was aimed at ascertaining the educational and training backgrounds of business owners in the TxDOT availability pool. The information from this part of the survey not only allows comparisons among business owners with similar educational backgrounds but also allows for an extensive examination of any existing educational barriers to participation in highway construction.

The final section, "Barriers to Participation," requested information leading to the identification of any type of barrier to participation in TxDOT procurement opportunities that the respondent believed resulted from his or her race, ethnicity, sex, or disability. Respondents were also allowed to write in any comments about these barriers that they had.

RESPONSE RATES

The combined pool of contractors and subcontractors in all six control groups originally numbered 3,206 firms. Of this number 336, or 10.5%, were multiple listings of the same firm—both within groups and across groups. These duplicates were deleted, leaving a final sample size of 2,870 firms.[1] From these 2,870, 855 surveys were returned, for an overall response rate of 29.8%. Of this number, 496, or 58.0%, indicated they had worked for TxDOT or on TxDOT contracts at least once since 1987. Table 1.1 presents complete response information for all six control groups surveyed.

Response rates were substantially higher for the construction-oriented control groups than for the maintenance-oriented control groups. For the former, the response rate was 39.8% overall (429/1079) while for the latter it was only 23.8% (426/1791). For this and other reasons, we will often present results separately for construction firms versus maintenance firms in the analyses that follow. Certified

DBE firms (groups A and B) had the highest overall response rates—43.3% (262/605). Prequalified construction contractors (group C) and Bidders Questionnaire contractors (group D) demonstrated 33.6% and 38.2% response rates, respectively—lower than the certified DBE groups but higher than the maintenance-oriented groups.

Table 1.1: Survey response, by control group

Control Group	Surveys Sent	Percentage Distribution	Responses Received	Percentage Distribution	Response Rate
	(a)	(b)	(c)	(d)	(e)
A	227	7.9%	118	13.8%	52.0%
B	378	13.2%	144	16.8%	38.1%
C	301	10.5%	101	11.8%	33.6%
D	173	6.0%	66	7.7%	38.2%
F	1,237	43.1%	276	32.3%	22.3%
G	554	19.3%	150	17.5%	27.1%
TOTAL	**2,870**	**100.0%**	**855**	**100.0%**	**29.8%**

Source: LBJ School of Public Affairs, 1994.

Notes: Legend for control groups: "A" = D-14 certified DBE firms giving their work category as either "engineering" or "miscellaneous"; "B" = D-14 certified DBE firms giving any other work category; "C" = "Prequalified" non-DBE contractors; "D" = "Bidders Questionnaire" non-DBE contractors; "F" = D-18 non-DBE maintenance bidders; and "G" = D-18 DBE maintenance bidders.

A comparison of columns (d) and (b) in table 1.1 shows that the responses are more heavily weighted in construction than in maintenance. Only 37.6% of the firms sent surveys were in construction-oriented control groups. However responses from these firms constituted 50.1% of the total. In contrast, maintenance firms constituted only 49.8% of the responses, although they made up 62.4% of the firms receiving surveys. The responses are also somewhat more heavily weighted towards DBEs than non-DBEs. That is, DBEs accounted for 48.2% of respondents (412/855) to the survey, although they constituted only 40.4% of the surveyed firms (1159/2087). Non-DBEs, while accounting for 59.6% of surveyed firms (1711/2087), accounted for only 51.8% of the respondents (443/855).

Chapter two below presents the basic tabulations by control group for the first and third sections of the survey, covering the basic business and educational characteristics of available TxDOT contractors. Chapter three covers the results from

the second section of the survey, covering the economics of the TxDOT contracting environment. Finally, chapter four describes the discriminatory barriers to participation identified in the statewide highway construction contracting community.

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1 The "sample" for this survey was actually the entire universe of firms in the TxDOT availability pool. That is, the sample size for this survey equals 100%, and the survey results are therefore not subject to sampling error. The results are subject, however, to non-sampling error. Non-sampling error arises from several sources, including mistakes in keying and processing the data as well as mistakes by respondents in answering the questions posed. Quality control techniques were implemented to insure that data entry procedures were carried out as specified, and we believe that all important data errors have been detected and corrected. Another source of non-sampling error arises from the inability to obtain a completed survey from every member of the sample as well as from respondent error in answering the questions posed. Explicit measures of the effects of this type of non-sampling error are not available. The reader is cautioned that the procedures and analyses presented below assume that the non-respondents possess substantially the same characteristics as respondents with similar demographic attributes, but this is never exactly true. The results should be interpreted accordingly.

CHAPTER 2. OVERVIEW OF TXDOT CONSTRUCTION AND MAINTENANCE CONTRACTOR POOL

OWNERSHIP

One of the first survey questions asked was "Are you the owner of your firm?" This question was intended to measure, albeit imperfectly, that the information given by the survey respondent accurately represents the views and/or characteristics of the firm's owner(s). This distinction is important when considering the results concerning educational background.

Table 2.1: Percentage of owner respondents, by control group, row percents

Group	Owner	Not owner	TOTAL	N
A	96.49	3.51	100.0	114
B	97.22	2.78	100.0	144
C	83.17	16.83	100.0	101
D	93.85	6.15	100.0	65
F	89.74	10.26	100.0	273
G	93.15	6.85	100.0	146
TOTAL	92.05	7.95	100.0	843
N	67	776	843	
Missing			12	

Source: LBJ School of Public Affairs, 1994.

Notes: Legend for control groups: "B" = D-14 certified DBE firms giving any other work category; "C" = "Prequalified" non-DBE contractors; "D" = "Bidders Questionnaire" non-DBE contractors; "F" = D-18 non-DBE maintenance bidders; and "G" = D-18 DBE maintenance bidders.

Table 2.1 shows that twelve respondents, or 1.4%, did not complete this question. Of the remaining 843 respondents, 92.1% (776/843) indicated they were an owner of the firm being surveyed. The lowest rates of owner response came from the non-DBE Prequalified construction contractors (83.2%) and non-DBE maintenance contractors (89.7%), while the highest rates came from certified DBE firms—96.9% for groups A and B combined. DBE maintenance firms and non-DBE Bidders Questionnaire firms had intermediate rates of 93.2% and 93.9%, respectively. About 75% of non-owner respondents tended to be generally highly placed in the firm—either as managers or corporate officers (e.g., president, vice-president, secretary-treasurer).

CATEGORIES OF WORK—CONSTRUCTION CONTRACTORS, CONSTRUCTION SUBCONTRACTORS, AND MAINTENANCE CONTRACTORS

General work categories

All firms in groups B through G were asked "which general type of work is most important to your firm" and were asked to choose either (A) construction, (B) maintenance, or (C) both. If the directories used to create the survey universe were to be used as a guide (See table 1.1 above), those in construction should be about one-third of the total, and those in maintenance would be two-thirds. On the basis of the various TxDOT contractor directories the distinction between construction firms and maintenance firms seems obvious.

Table 2.2 reveals however, that the distinction between these two types of firms is not so obvious. That is, of the 426 firms in groups F and G (the maintenance-oriented groups), almost one-third (133/426) identified *construction* as their most important area of work. More than one-quarter (17/65) of the group D firms (Bidders questionnaire construction firms) chose *maintenance* as their most important work area. In contrast, fewer than 7% of the firms in group B (DBE construction firms) and fewer than 2% of the firms in group C (Prequalified non-DBE construction firms) chose maintenance as their most important work area.

Only about 8% responded that "both" categories were equally important. Since the question clearly asked respondents to identify their *most* important area of work, these responses may be accounted for as representing cases where both types of work are *equally* important to the firm, making it impossible to identify the *most* important area of work. Firms in group G chose this option most (12%) followed by firms in groups F, D, and B, respectively. Very few firms in group C (2%) chose this option.

Overall, the distinction between construction and maintenance seems quite reasonably clear for Prequalified contractors (group C) as well as for formally certified DBE contractors (group B). However, for the Bidders Questionnaire contractors (group D) as well as for the maintenance contractors (groups F and G), the distinction is much less clear. A substantial proportion of firms in these groups considers construction, not maintenance, to be their principal line of business.

Table 2.2. Most important general work category, by control group, row percents

Group	Construction	Maintenance	Both	TOTAL	N
C	91.09	7.92	0.99	100.00	101
B	86.21	6.90	6.90	100.00	145
D	66.15	26.15	7.69	100.00	65
F	33.70	61.23	5.07	100.00	276
G	28.00	61.33	10.67	100.00	150
TOTAL	53.60	40.16	6.24	100.00	737
N	395	296	46	737	
Missing				0	

Source: LBJ School of Public Affairs, 1994

Notes: Legend for control groups: "B" = D-14 certified DBE firms giving any other work category; "C" = "Prequalified" non-DBE contractors; "D" = "Bidders Questionnaire" non-DBE contractors; "F" = D-18 non-DBE maintenance bidders; and "G" = D-18 DBE maintenance bidders.

One tentative implication of these findings is that a significant fraction of contractors in group G (informally certified DBE maintenance contractors) may be candidates for formal certification under the Department's federal funds and its state funds DBE initiatives. Forty firms from group G identified their primary work area as construction and seventeen indicated both construction and maintenance. Other information received in the survey indicated that at least some of the group G firms have never even heard of the DBE program or of the DBE Supportive Services program.

Contractor status

Firms were also asked whether they usually worked as general construction contractors, construction subcontractors, maintenance contractors, or in some other capacity. The responses to this question, tabulated by group, appear in tables 2.3 and 2.4.

Table 2.3 shows that the division of the TxDOT availability pool, in the aggregate, is split between firms that identify as primarily general construction contractors (24.6%), construction subcontractors (28.7%), and maintenance prime contractors (30.2%). Another 16.2% identifies as being equally employed among two or more of these categories. Less than 0.5%, not surprisingly, indicated they were primarily employed in some capacity other than these three categories.

Looking more closely, table 2.3 shows that group C firms are predominantly general construction contractors while group B firms are predominantly construction subcontractors. Over 73% of responding group C firms indicated they were primarily general construction contractors. Groups F and G, as shown previously in table 2.2, contain a substantial share of firms that consider themselves construction-oriented rather than maintenance-oriented. Only 46.8% of group F firms and 49.3% of group G firms indicated that they were primarily employed as prime maintenance contractors. Over 22% of group F firms and about 14% of group G firms indicated they were primarily general construction contractors. A substantial share in each group, 16.4% for group F and 18.3% for group G, also indicated they were primarily construction subcontractors. Group D firms, on the other hand, have a significant presence in all three main areas. This presence is stronger in construction subcontracting and maintenance prime contracting than in general construction contracting, however.

Table 2.3: Contractor status, by control group, row percentages

	Contractor Status									
				Equal combinations of contractor status (see legend)						
Group	General construction contractor	Maintenance contractor	Construction subcontractor	AB	ABC	AC	BC	D	TOTAL	N
B	9.22	3.55	76.60	1.42	0.71	7.09	1.42	0.00	100.00	141
C	73.27	3.96	6.93	4.95	2.97	5.94	1.98	0.00	100.00	101
D	15.38	20.00	30.77	4.62	6.15	13.85	9.23	0.00	100.00	65
F	22.05	46.77	16.35	3.80	3.04	3.80	3.42	0.76	100.00	263
G	14.08	49.30	18.31	1.41	2.82	8.45	4.93	0.70	100.00	142
TOTAL	24.58	30.20	28.65	3.09	2.81	6.60	3.65	0.42	100.00	
N	175	215	204	22	20	47	26	3	712	
Missing									25	

Source: LBJ School of Public Affairs, 1994.

Notes: Legend for contractor status: "B" = prime contractor, maintenance; "C" = construction subcontractor; "D" = other. In entries with combinations of categories, each category indicated should be considered to be of equal importance to the firm.

Legend for control groups: "B" = D-14 certified DBE firms giving any other work category; "C" = "Prequalified" non-DBE contractors; "D" = "Bidders Questionnaire" non-DBE contractors; "F" = D-18 non-DBE maintenance bidders; and "G" = D-18 DBE maintenance bidders.

A number of firms indicated that they were equally involved in two or more of the contractor status categories. Almost 7% of respondent firms indicated that construction general contracting and construction subcontracting were of equal importance to their firm. Another 3.7% indicated an equal mix between maintenance prime contracting and construction subcontracting. An additional 3.1% of firms indicated equal combinations of general construction contracting and maintenance prime contracting, while 2.8% of firms indicated all three categories were of equal importance. Overall, 16.2% of firms indicated some type of combination of categories as describing their line of work.

Table 2.4 presents the same information as the previous table except that the unit of analysis is the contractor status category rather than the control group. Table 2.4 shows that 42.3% of all strictly general construction contractors appear on the Prequalified Contractor listing (group C). An additional 44.5% of strictly general construction contractors come from the D-18 maintenance listing (groups F and G). Only 5.7% of strictly general construction contractors come from the Bidders Questionnaire listing (group D) and only 7.4% come from the Certified DBE Directory.

Table 2.4: Contractor status, by control group, column percentages

	Contractor Status									
				Equal combinations of contractor status (see legend)						
Group	General construction contractor	Maintenance contractor	Construction subcontractor	AB	ABC	AC	BC	D	Total	N
B	7.43	2.33	52.94	9.09	5.00	21.28	7.69	0.00	19.80	141
C	42.29	1.86	3.43	22.73	15.00	12.77	7.69	0.00	14.19	101
D	5.71	6.05	9.80	13.64	20.00	19.15	23.08	0.00	9.13	65
F	33.14	57.21	21.08	45.45	40.00	21.28	34.62	66.67	36.94	263
G	11.43	32.56	12.75	9.09	20.00	25.53	26.92	33.33	19.94	142
Total	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	
N	175	215	204	22	20	47	26	3	712	
Missing									25	

Source: LBJ School of Public Affairs, 1994.

Notes: Legend for contractor status: "B" = prime contractor, maintenance; "C" = construction subcontractor; "D" = other. In entries with combinations of categories, each category indicated should be considered to be of equal importance to the firm.

Legend for control groups: See previous table.

Almost 53% of all construction subcontractors come from group B. Other groups with strong construction subcontractor participation include group F (21.1% of all construction subcontractors), group G (12.8%), and group D (9.8%). Only 3.4% of strictly construction subcontractors were group C firms.

Almost 90% of the firms identifying as strictly maintenance prime contractors came from groups F (57.2%) and G (32.6%). Group D had the next highest share of maintenance contractors (6.1%), followed by group B (2.3%) and group C (1.9%).

Table 2.5 presents the same data presented in tables 2.3 and 2.4 above with the exception that the results are tabulated according to race and ethnicity rather than control group. The result is a somewhat more refined picture of the racial and ethnic composition of the TxDOT contracting pool according to contractor status.

Table 2.5 shows that, overall, Anglo-owned firms (both male-owned and female-owned), constitute 72.2% of all firms in the TxDOT contracting pool. The next largest group in relative terms is Hispanic-owned firms, with 12.9% of the total. Next in order of relative importance are Black-owned firms (10.6%). These are

followed by Native American-owned firms (2.6%), Asian/Pacific Islander-owned firms (0.6%), and other minority-owned firms (1.1%).

Table 2.5: Contractor status, by control group, column percentages

	Contractor Status									
				Equal combinations of contractor status (see legend)						
Group	General construction contractor	Maintenance contractor	Construction subcontractor	AB	ABC	AC	BC	D	Total	N
Anglo	84.21	73.58	57.35	77.27	85.00	74.47	76.92	100.00	72.20	509
Asian	0.00	0.94	0.00	4.55	0.00	2.13	0.00	0.00	0.57	4
Black	7.60	10.85	15.69	0.00	5.00	6.38	11.54	0.00	10.64	75
Hispanic	5.26	10.85	22.55	18.18	0.00	12.77	11.54	0.00	12.91	91
Native	0.58	3.30	2.94	0.00	10.00	4.26	0.00	0.00	2.55	18
Other	2.34	0.47	1.47	0.00	0.00	0.00	0.00	0.00	1.13	8
TOTAL	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	705
N	171	212	204	22	20	47	26	3	705	
Missing									32	

Source: LBJ School of Public Affairs, 1994.

Notes: Legend for contractor status: "B" = prime contractor, maintenance; "C" = construction subcontractor; "D" = other. In entries with combinations of categories, each category indicated should be considered to be of equal importance to the firm.

Legend for control groups: "B" = D-14 certified DBE firms giving any other work category; "C" = "Prequalified" non-DBE contractors; "D" = "Bidders Questionnaire" non-DBE contractors; "F" = D-18 non-DBE maintenance bidders; and "G" = D-18 DBE maintenance bidders.

Specific work categories

Table 2.6 below outlines the frequency with which construction firms (firms indicating construction as their most important work category, see table 2.2) in groups B through G cited various work categories as being important to their firm. Asphalt paving, minor structures and miscellaneous concrete, earthwork, and base/sub-base work were each cited more than 100 times. Concrete paving, major structures, and hauling were all cited more than seventy-five times each. Underground/utility work and landscaping were each cited between fifty and seventy-five times. Fencing, materials supply, traffic control devices, and painting

each appears twenty-five to fifty times. Illumination, rest areas, engineering, and truck owner/operator were cited least often as being important areas of work.

Table 2.6. Primary line(s) of business, construction firms, control groups B–G

Primary types of goods and/or services sold	No. firms
Asphalt	197
Minor structures / misc. concrete	131
Earthwork	127
Base and sub work	101
Concrete paving	88
Major structures	87
Hauling	84
Underground / utility work	72
Landscaping	68
Fencing	50
Material supplier	48
Traffic control devices	35
Painting	32
Illumination	23
Rest areas	21
Engineering	8
Truck owner / operator	4
Other	4
TOTAL	1,180
N	395
Total ÷ N	2.99

Source: LBJ School of Public Affairs, 1994

Overall, the 395 firms listed in table 2.6 cited eighteen different work areas a total of 1,180 times for an average of 3.0 work areas each. Over 34% (135/395) of these firms listed one area of work exclusively. An additional 33% (130/395) listed only two or three areas of work each. Only about 25% (97/395) of these firms listed between four and seven important work areas; and only about 3% (13/395) firms listed eight or more distinct areas of work—up to a maximum of fourteen distinct areas of work.

Table 2.7 outlines the frequency with which maintenance contractors (i.e., firms indicating maintenance as their most important work category, see table 2.2) in groups B through G cited various work categories as being important to their firm. Mowing and landscape maintenance were each cited more than 100 times. Litter pickup, tree trimming/removal, and "other" were each cited fifty and seventy-five times, while painting structures, concrete repair, guardrail repair, riprap repair, pavement maintenance, and bridge repair appear fifteen to thirty times each. Cited

least often as being important areas of work for the firm were pothole repair, sign maintenance, ditch cleaning, pavement marker repair, and street sweeping.

Table 2.7. Primary line(s) of business, maintenance firms, control groups B–G

Primary types of goods and/or services sold	No. firms
Mowing	165
Landscape maintenance	105
Litter pick-up	72
Tree trimming / removal	66
Painting structures	27
Concrete repair	22
Guardrail repair	21
Riprap repair	18
Pavement maintenance	16
Bridge repair	16
Pothole repair	14
Sign maintenance	13
Ditch cleaning	13
Pavement marker repair	10
Street sweeping	9
Other	71
TOTAL	658
N	296
Total ÷ N	2.22

Source: LBJ School of Public Affairs, 1994

Overall, the 288 firms listed in table 2.7 cited sixteen different work areas a total of 585 times for an average of about 2.2 work areas each. Over 43% (124/288) of these firms listed one area of work exclusively. Another 35% (102/288) listed only two or three areas of work each. An additional 15% (43/288) of these firms listed between four and seven important work areas; and about 3% (9/288) firms listed eight or more distinct areas of work—up to a maximum of ten.

CATEGORIES OF WORK—PROFESSIONAL SERVICES IN SUPPORT OF CONSTRUCTION AND OTHER MISCELLANEOUS FIRMS

General customer characteristics

As noted previously, firms in control group A were predominantly engineering services, architectural services, and geotechnical services firms (professional engineering services for short). These firms comprised 64.4% (75/118) of all firms in group A. The remaining 36.6% of the firms (42/118) in this group fell into a "miscellaneous industry" category—neither construction, maintenance, nor

professional engineering and related services. This "miscellaneous industry" category included a diverse group of firms including, for example, service stations, machine shops, insurance agencies, various specialized materials suppliers, land appraisal and acquisition services, and other specialized business services.

In the survey, we asked these group A firms two questions about their clients. The first question asked "what is the primary line of business engaged in by your customers?" The second question asked if their customers usually worked as contractors, subcontractors, state purchasing agents, or "other."

Nine of the seventy-six professional engineering services firms, or 11.8%, did not give information sufficient to tabulate this first question. Of the remaining sixty-seven firms the results are as follows. Seventeen of the firms, or 25.4%, responded that their customers' primary line of business is highway, street, or bridge construction. An additional sixteen firms, or 23.9%, responded that their customers' primary line of business is government. Eleven firms, or 16.4%, indicated that their customers' primary line of business was building construction, repair, or renovation. Nine firms, or 13.4% indicated that their clients' were an equal combination of building contractors and highway contractors. Finally, fourteen firms, or 20.9%, responded that their customer base fell primarily in areas other than construction or government. Complete tabulations appear in table 2.8.

Table 2.8. Primary line of business of customers, professional engineering services firms in control group A

Primary line of business of customer	No. of respondents	Percent. of respondents
Highway, street, or bridge construction	17	25.4%
Government	16	23.9%
Other	14	20.9%
Building construction	11	16.4%
Equal combination of highway and building construction	9	13.4%
TOTAL	67	100.0%
N	76	
Missing	9	

Source: LBJ School of Public Affairs, 1994

The client base of the firms categorized as "miscellaneous" appears more diffuse. Overall, 63.4% of these firms (26/41) indicated that the primary line of business of their customers was outside construction or government. Only twelve of the forty-one firms, or 29.3%, answering the question indicated that their customers

were primarily in the construction industry. Only three firms, or 7.1%, indicated that government was their primary customer. These results contrast sharply with the response of the engineering and related firms where more than 55% looked primarily to the various construction industries for clients and another 21% looked primarily towards government for business. Complete tabulations appear in table 2.9.

Table 2.9. Primary line of business of customers, "miscellaneous" firms in control group A

Primary line of business of customer	No. of respondents	Percent. of respondents
Other	26	63.4%
Equal combination of highway and building construction	6	14.6%
Highway, street, or bridge construction	3	7.3%
Building construction	3	7.3%
Government	3	7.3%
TOTAL	41	100.0%
N	42	
Missing	1	

Source: LBJ School of Public Affairs, 1994

Firms in group A were also asked whether their customers were usually prime contractors, subcontractors, governments, or private owners. Almost 48% (31/65) of those providing complete answers reported that their customers worked primarily as prime contractors. An additional 23% (15/65) reported that their clients were usually governments. Nine percent of the firms (6/65) reported their clients were an equal mix of prime contractors and governments, while about 8% (5/65) reported an equal mix of governments and private construction owners. Only about 2% of firms reported that their clients were usually subcontractors. Another 2% reported their clients were usually private owners. An additional 5% (3/65) reported other combinations of prime contractors, subcontractors, governments, and private owners. Complete tabulations appear in table 2.10.

Compared to the professional engineering services firms in group A, the "miscellaneous" firms in group A are even more heavily reliant on prime contractors for clients but much less reliant on government or private construction owners. Also, a large percentage of these "miscellaneous" firms have subcontractors for clients instead of, or in addition to, prime contractors. Complete tabulations appear in table 2.11.

Table 2.10. Usual occupation of customers, professional engineering services firms in control group A

Primary line of business of customer	No. of respondents	Percent. of respondents
Prime contractors	31	47.69%
Government personnel	15	23.08%
Equal combination of prime contractors and gov't personnel	6	9.23%
Equal combination of gov't personnel and private owners	5	7.69%
Equal combination of prime contractors and subcontractors	3	4.62%
Subcontractors	1	1.54%
Private construction owners	1	1.54%
Other combinations	3	4.62%
TOTAL	65	100.0%
N	76	
Missing	11	

Source: LBJ School of Public Affairs, 1994

Specific goods and services sold

Surveyed firms were asked to identify the primary types of goods and/or services that they sold. These firms were given a list of seventeen distinct goods and services categories to choose from and asked to select all categories that applied. Consequently, many firms selected more than one category. Firms in this group selected, on average, 1.46 categories each (See table 2.12).

Table 2.11. Usual occupation of customers, "miscellaneous" firms in control group A

Primary line of business of customer	No. of respondents	Percent. of respondents
Prime contractors	22	64.71%
Subcontractors	3	8.82%
Government personnel	2	5.88%
Equal combination of prime contractors and gov't personnel	2	5.88%
Equal combination of prime contractors and subcontractors	2	5.88%
Equal combination of gov't personnel and private owners	0	0.00%
Private construction owners	0	0.00%
Other combinations	3	8.82%
TOTAL	34	100.0%
N	42	
Missing	8	

Source: LBJ School of Public Affairs, 1994

Engineering and related professional services firms in group A selected, on average, 1.46 categories each (See table 2.12). The most commonly selected category for these firms was, not surprisingly, "Engineering services." Next was the "Other

goods and services" category, followed in third place by "Architectural services." Other categories receiving mention included "Material testing and calibration services," "Data processing services," "Communications and media-related services," and "Automotive parts and supplies."

In contrast to the professional engineering services firms, the "miscellaneous" firms in group A selected, on average, 4.41 categories each (See table 2.13). The most commonly selected category for these firms was "other goods and services," followed by "engineering services" and "architectural services."

Table 2.12. Primary types of goods and/or services sold, professional engineering services firms in control group A

Primary types of goods and/or services sold	No. firms
Engineering services	57
Architectural services	15
Material testing and calibration services	5
Data processing services	2
Communications and media-related services	2
Automotive parts and supplies	1
Other goods and/or services	29
TOTAL	111
N	76
Total ÷ N	1.46

Source: LBJ School of Public Affairs, 1994

Other categories receiving mention by these firms included "material testing and calibration services," "petroleum products," "equipment maintenance and repair," "data processing services," "communications and media-related services," "automotive parts and supplies," "equipment parts and supplies," "hand tools," "office supplies," and "building maintenance and repair."

LEGAL FORM OF ORGANIZATION

Several different legal forms of organization characterize the system of American business enterprise, in Texas as well as in the United States as a whole. Three general forms of organization in particular—the corporation, the partnership, and the individual proprietorship—account for over 99% of all business enterprises in the United States. The relative prevalence of corporations, proprietorships, and partnerships can be expected to vary somewhat by industry group. Table 2.14

presents data tabulated by legal form of organization and by industry from a national census of business enterprises collected in 1987.

Table 2.13. Primary types of goods and/or services sold, "miscellaneous" firms in control group A

Primary types of goods and/or services sold	No. firms
Engineering services	60
Architectural services	16
Material testing and calibration services	5
Petroleum products	5
Equipment maintenance and repair	5
Data processing services	4
Communications and media-related services	4
Automotive parts and supplies	4
Equipment parts and supplies	3
Hand tools	2
Office supplies	1
Building maintenance and repair	1
Other goods and/or services	62
TOTAL	172
N	39
Missing	3
Total ÷ N	4.41

Source: LBJ School of Public Affairs, 1994

What table 2.14 shows clearly is that corporations tend to dominate the business enterprise landscape. Corporations—as opposed to individual proprietorships, partnerships, and other legal forms of business organization—constituted between 59% and 74% of all firms in the census. Even more striking is the observation that such firms generated between 86–94% of all employment, 91–96% of all payroll, and 90–95% of all sales.

The next largest grouping of firms is individual, or sole, proprietorships. Proprietorships accounted for between 19–33% of all firms in the census, but generated only between 3–11% of all employment, 2–6% of all payroll, and 2–7% of all sales. The third most significant legal form of organization is the partnership. Partnerships accounted for 5–7% of all firms, 3–4% of all employment, 2–3% of all payroll, and 2–3% of all sales.

Table 2.14: Legal form of organization, U.S. firms, by industry, 1987

	Firms	Employees	Payroll ($mil)	Sales ($mil)
Total (number)	3,878,866	68,140,393	1,307,948	7,234,108.3
Total (percentage)	100.00	100.00	100.00	100.00
Corporations	59.19	88.79	93.34	93.16
Proprietorships	32.81	7.03	3.44	3.81
Partnerships	7.11	3.80	2.93	2.55
Other	0.89	0.38	0.29	0.48
Construction (all)				
Total (number)	529,194	5,116,642	111,527	515,775.9
Total (percentage)	100.00	100.00	100.00	100.00
Corporations	64.38	86.26	91.26	90.01
Proprietorships	30.18	10.58	6.23	6.58
Partnerships	5.33	3.04	2.41	3.27
Other	0.11	0.11	0.10	0.14
Heavy construction				
Total (number)	35,369	885,424	22,266	93,073.9
Total (percentage)	100.00	100.00	100.00	100.00
Corporations	74.80	94.03	95.59	94.91
Proprietorships	19.36	3.25	1.94	2.24
Partnerships	5.62	2.51	2.30	2.69
Other	0.21	0.21	0.17	0.17
Business services				
Total (number)	216,143	4,349,398	67,317	171,720.5
Total (percentage)	100.00	100.00	100.00	100.00
Corporations	67.59	90.82	94.75	93.46
Proprietorships	26.86	6.53	3.50	4.41
Partnerships	5.37	2.54	1.63	1.99
Other	0.17	0.10	0.12	0.14

Source: U.S. Bureau of the Census 1991, table 10, pp. 161–67.

Table 2.14 also shows that, nationwide, the prevalence of the corporate form is above average in the construction industries—and even more so in the heavy construction industries (which include most of TxDOT's highway construction and maintenance contracts). The business services industry—which includes engineering services, architectural service, and geotechnical services firms—also showed above average corporate presence.

Table 2.15 presents quantitative information that shows that the legal form of organization of available TxDOT firms conforms reasonably well to national patterns. For example, over 59% of the firms responding to the survey indicated that their firm took the corporate form. Another 35% of firms were organized as sole proprietorships, while 6% were organized as partnerships. Table 2.15 also shows that

a significant fraction of all corporations available to TxDOT are organized as "Subchapter S" corporations.

Subchapter S is a special Internal Revenue Service designation for small corporations with fewer than thirty-five shareholders. Owners of such companies are allowed to pass through corporate earnings to their individual earnings for tax purposes and thereby avoid the so-called "double taxation" of corporate earnings. For this reason, "Subchapter S" corporations are very popular among small business owners—male and female, minority and nonminority alike.

Table 2.15: Legal form of organization, by control group, row percentages

Group	Reg. corp	S corp	Proprietor-ship	Partner-ship	TOTAL	N
A	39.83	22.88	31.36	5.93	100.00	**118.00**
B	53.47	19.44	24.31	2.78	100.00	**144.00**
C	77.23	20.79	1.98	0.00	100.00	**101.00**
D	45.45	21.21	27.27	6.06	100.00	**66.00**
F	33.58	12.18	45.39	8.86	100.00	**271.00**
G	22.67	15.33	56.00	6.00	100.00	**150.00**
TOTAL	**42.00**	**17.18**	**35.18**	**5.65**	**100.00**	**850**
N	**357**	**146**	**299**	**48**	**850**	
Missing					**5**	

Source: LBJ School of Public Affairs, 1994.

Notes: Legend for control groups: "A" = D-14 certified DBE firms giving their work category as either "engineering" or "miscellaneous"; "B" = D-14 certified DBE firms giving any other work category; "C" = "Prequalified" non-DBE contractors; "D" = "Bidders Questionnaire" non-DBE contractors; "F" = D-18 non-DBE maintenance bidders; and "G" = D-18 DBE maintenance bidders.

Table 2.15 presents information on the legal form of organization of the firms responding to the survey. The results are broken out by control group. As the reader can see, the corporate form of legal organization is predominant with respect to the number of firms. Almost 42% of firms responding were incorporated as ordinary corporations and 17% were incorporated as "Subchapter S" corporations, defined earlier. Very few corporations (less than 2%) responding to the survey indicated they were publicly owned. An additional 35% of firms were operated as sole proprietorships, and slightly less than 6% were partnerships.

Rates of incorporation were highest for those firms in group C (prequalified contractors) and lowest for those firms in group G (maintenance MBEs/WBEs). Of

the group C firms, 98.0% were incorporated versus only 38.0% for group G firms, 45.8% for group F, 66.7% for group D, 72.9% for group B, and 62.7% for group A. All groups except C also had substantial proportions of sole proprietorships as well as significant partnership activity. Less than 2% of group C firms were organized as sole proprietorships and none were arranged as partnerships. "Subchapter S" corporation status was near 20% for control groups A–D but was much lower (between 12% and 15%) for the groups F and G.

OWNERSHIP AND CONTROL

Table 2.16 presents data regarding the detailed race, ethnicity, and sex composition of firm ownership in the sample. Tables 2.17 and 2.18 present similar information for all control groups except group A. Group A firms were excluded since no comparable group of non-DBE professional engineering services firms was available to be surveyed.

Of the 855 firms responding, seven reported that they were publicly owned companies. Because the ownership of publicly owned firms is highly diffuse, it is difficult if not impossible to determine the race and sex composition of ownership for these firms. Furthermore, because public ownership usually involves some degree of separation of ownership from control, further investigation would have to be undertaken to determine the race and sex composition of a firm's management. We do not attempt such calculations here. Instead, we simply choose to eliminate these firms from the sample for purposes of this particular exercise.

Of the 848 privately held firms remaining, 45.1% (382/848) were 51% or more owned and controlled by Anglo males, and An additional 20.6% (175/848) were 51% or more owned and controlled by Anglo females. Wilson (1990, 134) reports that, nationally, Anglo-owned firms constitute 70%–80% of all female-owned business enterprises. Of all the female-owned firms in the sample, 85.0% were Anglo-owned (175/206). Altogether, Anglo-owned and controlled firms made up almost 66% of the entire sample. Minority-owned firms accounted for 34.3% of the sub-sample (291/848). Together, minority-owned firms and female-owned firms constituted 55.0% of the entire sub-sample (466/848).

Hispanic-owned firms constituted the largest subgroup of minority-owned firms, accounting for 16.6% of all firms in the overall sample (141/848). The second largest subgroup was Black-owned firms, constituting 11.2% of firms in the sample

(95/848). Native American-owned firms were the third largest minority group with 2.8% (24/848), followed by Asian/Pacific Islander-owned firms with 2.4% (20/848), and finally "other" minority-owned firms with 1.3% (11/848).

Table 2.16: Race, ethnicity, and sex composition of the ownership of privately-held firms, all survey respondents

Owner(s), 51% or more	Number of firms	Percentage
Anglo male	382	45.05
Anglo female	175	20.64
Hispanic male	128	15.09
Black male	84	9.91
Native American male	21	2.48
Asian/Pacific Islander male	18	2.12
Hispanic female	13	1.53
Black female	11	1.30
Other minority male	9	1.06
Native American female	3	0.35
Asian/Pacific Islander female	2	0.24
Other minority female	2	0.24
TOTAL	848	100.00
N	855	
Not applicable (public)	7	

Source: LBJ School of Public Affairs, 1994

Male-owned Anglo firms outnumbered female-owned Anglo firms by a ratio of 2.2:1. Again, the figures for minority-owned firms are three to four times higher. Male-owned Hispanic firms outnumbered female-owned Hispanic firms by a ratio of 9.8:1. Male-owned Black firms outnumbered female-owned Black firms by a ratio of 7.6:1. Male-owned Native American firms outnumbered female-owned Native American firms by a ratio of 7:1. Male-owned Asian firms outnumbered female-owned Asian firms by a ratio of 9:1. Male-owned "other minority" firms outnumbered female-owned "other minority" firms by a ratio of 4.5:1.

Tables 2.17 and 2.18 present the race, ethnic, and sex composition of the ownership of firms according to most important general work category (construction, maintenance, or both equally). The reader should note that firms in control group A were not asked this question and are not included in the tabulations presented in tables 2.17 or 2.18.

Of the 730 privately held firms in control groups B–G, 52.3% (382/730) were 51% or more owned and controlled by Anglo males, and An additional 19.5% (142/730) were 51% or more owned and controlled by Anglo females. Altogether,

Anglo-owned and controlled firms made up almost 72% of the entire sample. Minority-owned firms accounted for 28.2% of the sub-sample (206/730). Together, minority-owned firms and female-owned firms constituted 47.7% of the entire sub-sample (348/730).

Table 2.17: Race, ethnicity, and sex percentage composition of the ownership of privately held firms, by most important general work category (excluding group A)

Owner(s), 51% or more	Most important work category			TOTAL	N
	Const-ruction	Maint-enance	Both		
Anglo	72.19	72.26	65.22	71.78	524
Hispanic	14.03	10.96	17.39	13.01	95
Black	9.44	12.67	13.04	10.96	80
Native American	2.55	2.74	2.17	2.60	19
Other minority	1.28	0.68	2.17	1.10	8
Asian/Pacific Islander	0.51	0.68	0.00	0.55	4
Male	83.56	74.23	67.39	77.53	566
Female	16.44	25.77	32.61	22.47	164
Nonminority	27.81	27.73	34.77	71.78	524
Minority	72.19	72.26	65.22	28.22	206
TOTAL	100.00	100.00	100.00	100.00	730
N	392	292	46	730	737
Missing					7

Source: LBJ School of Public Affairs, 1994

Hispanic-owned firms were again the largest subgroup of minority-owned firms, constituting 13.0% of all firms in the sub-sample (95/730). The second largest subgroup was again Black-owned firms, constituting 11.0% of firms in the sub-sample (80/730). Native American-owned firms were again the third largest minority group of firms with 2.6% (19/730), followed by "other" minority-owned firms with 1.1% (8/730), and finally Asian/Pacific Islander-owned firms with 0.5% (4/730).

Male-owned Anglo firms outnumbered female-owned Anglo firms by a ratio of 2.7:1. For minority-owned firms, however, these ratios are much higher. Male-owned Hispanic firms outnumbered female-owned Hispanic firms by a ratio of 7.6:1. Male-owned Black firms outnumbered female-owned Black firms by a ratio of 9:1. Male-owned Native American firms outnumbered female-owned Native American firms by a ratio of 8.5:1. Male-owned "other minority" firms outnumbered female-

owned "other minority" firms by a ratio of 7:1. Male-owned Asian firms numbered four—there were no female-owned Asian firms in the sub-sample.

Table 2.18: Detailed race, ethnicity, and sex percentage composition of the ownership of privately held firms, by most important general work category (excluding group A)

Owner(s), 51% or more	Most important work category			TOTAL	N
	Const-ruction	Maint-enance	Both		
Anglo male	48.98	58.90	39.13	52.33	382
Anglo female	23.21	13.36	26.09	19.45	142
Hispanic male	12.76	9.25	15.22	11.51	84
Black male	8.16	12.33	8.70	9.86	72
Native American male	2.55	2.05	2.17	2.33	17
Asian/Pacific Islander male	0.51	0.68	0.00	0.55	4
Hispanic female	1.28	1.71	2.17	1.51	11
Black female	1.28	0.34	4.35	1.10	8
Other minority male	1.28	0.34	2.17	0.96	7
Native American female	0.00	0.68	0.00	0.27	2
Asian/Pacific Islander female	0.00	0.00	0.00	0.00	0
Other minority female	0.00	0.34	0.00	0.14	1
TOTAL	100.00	100.00	100.00	100.00	730
N	392	292	46	730	737
Missing					7

Source: LBJ School of Public Affairs, 1994

Tables 2.17 and 2.18 also provide comparative race, ethnicity, and sex breakdowns according to most important work category. For example, table 2.15 shows that male-owned Anglo firms constitute a higher share of maintenance-oriented firms than construction-oriented firms or firms where construction and maintenance were equally important ("combination firms," for short). Whereas Anglo male firms constituted only 49.0% of all construction firms and 39.1% of combination firms, they constituted about 58.9% of all maintenance firms. In sharp contrast, female-owned Anglo firms constituted 26.1% of all combination firms and 23% of all construction firms, but these firms made up less than 13.5% of all maintenance firms.

Male-owned Hispanic firms have a greater presence in construction than in maintenance. The opposite is true for male-owned black firms. Both types of firms, however, have relatively high percentages of combination firms. Female-owned Hispanic firms and female-owned black firms both have significantly higher percentages of combination firms than for either construction or maintenance. Native Americans constitute about 2.6% of the sub-sample overall. Asian/Pacific

Islander Americans account for An additional 0.6%, while "other" minority-owned firms accounted for an additional 1.1%.

AGE OF FIRMS

There are several stylized facts concerning a firm's age that are useful to remember when discussing issues such as business development and business capability. Younger firms tend to be smaller firms and vice-versa. Younger (and/or smaller) firms also tend to go out of business at a higher rate than older (and/or larger) firms. On the other hand, younger and/or smaller firms tend to grow at a faster rate than their older counterparts, and they also tend to be more innovative on a per employee basis. William Brock and David Evans (1989, 146) have shown that, "For smaller firms—firm growth, the probability of firm dissolution, and the variability of firm growth all decrease with firm age." They also found that for larger firms, the probability of firm dissolution and the variability of firm growth also decreases with age. However, they found that the probability of firm growth increases with age for larger firms (1989, 147). Previous research also suggests that younger and/or smaller firms create a disproportionately large share of the nation's new jobs each year (Brock and Evans 1989, 187 fn. 69).

All survey participants were asked when their firm was established. Respondents were allowed to choose from a range that included (A) less than one year old, (B) one to two years old, (C) two to five years old, (D) five to ten years old, or (E) more than ten years old. Tables 2.19 through 2.21 present the results of this question.

Table 2.19 presents the results according to control group for each age category. From this the reader can determine the control group composition of each age category. For example, table 2.19 shows that none of the firms that were less than one year old were prequalified construction firms (group C) whereas prequalified firms constituted 77.2% of firms that were more than 10 years old.

Table 2.19 shows that the percentage of firms in each of the five age categories increases strongly with age in all control groups—with the oldest firms (more than ten years old) constituting the largest category in for each group. As just noted, more than 77.2% of group C firms were more than ten years old. For groups D and F the figure was approximately 50%. The minority-owned and female-owned control groups (A, B, G) had relatively lower percentages of firms in the more than ten years

old category than their nonminority counterparts with figures of 34.8%, 40.7%, and 32.2%, respectively. Overall, 46.5% (395/849) of firms in the survey reported they were more than ten years old, 25.4% (216/849) reported they were five to ten years old, 15.9% (135/849) reported they were two to five years old, 7.8% (66/849) reported they were one to two years old, and only 4.4% (37/849) indicated they were less than one year old.

Table 2.19: Firm age, by control group, row percentages

	Firm Age						
Group	< 1 yr.	1–2 yrs.	2–5 yrs.	5–10 yrs.	>10 yrs.	TOTAL	N
A	3.39	6.78	22.03	33.05	34.75	100.00	118
B	3.45	8.97	17.93	28.97	40.69	100.00	145
C	0.00	0.00	3.96	18.81	77.23	100.00	101
D	3.08	1.54	12.31	33.85	49.23	100.00	65
F	5.90	7.38	14.76	21.40	50.55	100.00	271
G	6.71	16.11	20.81	24.16	32.21	100.00	149
TOTAL	4.36	7.77	15.90	25.44	46.53	100.00	849
N	37	66	135	216	395	849	855
Missing							6

Source: LBJ School of Public Affairs, 1994.

Notes: Legend for control groups: "A" = D-14 certified DBE firms giving their work category as either "engineering" or "miscellaneous"; "B" = D-14 certified DBE firms giving any other work category; "C" = "Prequalified" non-DBE contractors; "D" = "Bidders Questionnaire" non-DBE contractors; "F" = D-18 non-DBE maintenance bidders; and "G" = D-18 DBE maintenance bidders.

Thus, although all groups exhibit a similar pattern of increasing concentrations of firms in the older age categories *within any given control group*, the three nonminority groups of firms (C, D, F) all appear to be substantially older than the three minority groups (A, B, G). Consequently, minority-owned firms and female-owned firms will tend to be over represented at the younger end of the age spectrum. For instance, table 2.19 shows that 10.2% of group A firms, 12.4% of group B firms, and 22.8% of group G firms, were less than two years old. In contrast, none of the group C firms, only 4.6% of the group D firms, and only 13.3% of the group F firms were less than two years old.

Table 2.20 presents these results according to firm age for each race, ethnicity, and sex combination. From this the reader can determine the age composition of the

firms in each race, ethnicity, and sex category. For example, the table shows that 4.8% of male Anglo-owned firms were less than one year old and 57.9% were more than ten years old.

Table 2.20: Firm age, by race, ethnicity, and sex, row percentages, all control groups

Group	Firm Age					TOTAL	N
	<1 yr.	1-2 yrs.	2-5 yrs.	5-10 yrs.	>10 yrs.		
Anglo male	4.76	4.76	10.85	21.69	57.94	100.00	378
Anglo female	5.14	9.71	26.29	25.14	33.71	100.00	175
Anglo total	4.88	6.33	15.73	22.78	50.27	100.00	553
Asian male	11.11	11.11	0.00	33.33	44.44	100.00	18
Asian female	0.00	0.00	50.00	0.00	50.00	100.00	2
Asian total	10.00	10.00	5.00	30.00	45.00	100.00	20
Black male	3.66	19.51	17.07	29.27	30.49	100.00	82
Black female	0.00	9.09	45.45	27.27	18.18	100.00	11
Black total	3.23	18.28	20.43	29.03	29.03	100.00	93
Hispanic male	3.91	5.47	13.28	33.59	43.75	100.00	128
Hispanic female	0.00	7.69	30.77	30.77	30.77	100.00	13
Hispanic total	3.55	5.67	14.89	33.33	42.55	100.00	141
Native American male	0.00	0.00	28.57	28.57	42.86	100.00	21
Native American female	0.00	33.33	33.33	0.00	33.33	100.00	3
Native American total	0.00	4.17	29.17	25.00	41.67	100.00	24
Other minority male	0.00	11.11	0.00	33.33	55.56	100.00	9
Other minority female	0.00	100.00	0.00	0.00	0.00	100.00	2
Other minority total	0.00	27.27	0.00	27.27	45.45	100.00	11
TOTAL	4.39	7.84	16.03	25.53	46.20	100.00	842
N	37	66	135	215	389	842	855
Missing							13

Source: LBJ School of Public Affairs, 1994.

Table 2.20 also shows that 57.9% of male Anglo-owned firms were more than ten years old. In contrast, only 33.7% of female Anglo-owned firms, 29.0% of Black-owned firms, 42.6% of Hispanic-owned firms, 45.0% of Asian/Pacific Islander-owned firms, and 41.7% of Native American-owned firms were more than ten years old. Thus, it is again apparent that the male nonminority-owned firms are quite a bit older than the minority-owned and female-owned firms.

The reader can also see from table 2.20 that Black-owned firms and female-owned firms are relatively younger than Hispanic-owned firms, Asian/Pacific Islander-owned firms, or Native American-owned firms. Regarding male-female differences, table 2.20 shows that, with the exception of Asian/Pacific Islander-owned firms, male-owned firms are generally older than female-owned firms.

Finally, although the tables are not presented here, it should be noted that the results from the previous two tables also hold true when contractor status (i.e., general construction contractors, construction subcontractors, and maintenance prime contractors) has been controlled for as well as race, ethnicity, and sex. Over 67.1% of Anglo-owned general construction contractors are more than ten years old versus only 55.6% for Hispanics and only 23.1% for Blacks. Among construction subcontractors, 52.1% of Anglo-owned firms are more than ten years old versus only 37.0% for Hispanics and 32.3% for Blacks. Concerning maintenance prime contractors, 41.7% of Anglo-owned firms were more than ten years old compared to 30.4% for Hispanics, and 21.7% for Blacks.

REVENUES AND EMPLOYMENT

Gross revenues and full-time paid employment are two of the most commonly used indicators of firm size. The two measures are usually highly correlated. This means that firms with higher revenues tend to have higher employment, and vice-versa. As indicated earlier, the age of the firm also tends to be positively correlated with both of these measures of business size.

Judged by these two measures, there are vastly more small business enterprises in the United States than large ones. Businesses with more than 500 employees are commonly defined as "large" businesses while those with employment of 20–499 are commonly defined as "small" businesses. Firms with less than 20 employees are considered to be "very small" businesses.

For the nation as a whole and over all industries, very small businesses account for 87.2% of all firms, small businesses for 12.4%, and large businesses for 0.4% (SBA 1990, 74–75). In the heavy and highway construction industry, 80.1% of all firms nationally are classified very small. An additional 19.6% of firms in this industry are classified small while only 0.4% are classified as large (SBA 1990, 76–77). Thus, compared to all firms in all industries nationwide, heavy construction

appears to have, on average, about the same number of large firms, significantly more small firms, and fewer very small firms.

Annual revenues are also often used to determine firm size. The dollar thresholds among the three designations, however, vary according to industry. As with employment, the distribution of firms tends to be strongly skewed towards the lower revenue ranges. This is especially true for sole proprietorships but holds for corporations and partnerships as well (See also table 2.14 above). Recent Small Business Administration (SBA) data show that nationally, 3.7% of all firms had less than $25,000 in annual revenues; 21.7% had revenues between $25,000 and $99,999; 44.4% had revenues in the $100,000 to $500,000 range; 26.2% had revenues in the $500,000 to $5,000,000 range; and only 3.3% had revenues between $5,000,000 and $25,000,000. At the highest end of the revenue range, only 0.7% of firms had revenues in excess of $25,000,000 annually (SBA 1990, 157).

A number of questions were included in the survey to gauge revenues and employment of the highway construction industry in Texas. All surveyed businesses were asked to indicate the ranges into which their annual revenues and employment fell. Firms were also asked to estimate how their revenues and employment have grown in recent years, and what portion of their revenues were generated by private sector work as opposed to public sector work. Selected results from this series of questions are presented in the tables below.

Revenues

Table 2.21 presents gross revenue ranges for respondents according to control group. The data are arranged as row percentages, that is, the table shows the percentage distribution of revenue ranges for each control group. Overall, firms are broadly distributed across all revenue ranges—indicating a diverse mixture of large, small, and very small firms. About 13.6% of surveyed firms indicated annual revenues were less than $25,000. This contrasts with a figure of only 3.8% in the SBA data (SBA 1990, 157). An additional 15.4% of TxDOT firms had revenues falling in the $25,000 to $99,999 range. In the $100,000 to $500,000 range, the figure was 25.9%. An additional 32.5% had annual revenues in the $500,000 to $5,000,000 range. Finally, almost 13% of TxDOT firms reported gross annual revenues in excess of $5 million. This contrasts with a figure of only 4.0% for heavy construction firms in the SBA data (SBA 1990, 157). Thus, the TxDOT availability pool appears to contain

relatively more large firms and relatively more very small firms than heavy construction firms in the SBA database.

Table 2.21: Gross annual revenues, by control group, row percentages

Group	Annual Gross Revenues (in thousands)											
	< $25	$25–49	$50–99	$100–199	$200–249	$250–499	$500–999	$1000–2499	$2500–4999	> $5000	TOTAL	N
A	11.40	6.14	7.02	13.16	3.51	14.91	20.18	18.42	4.39	0.88	100.00	114
B	7.69	2.10	3.50	8.39	4.90	13.99	18.88	22.38	10.49	7.69	100.00	143
C	0.00	0.00	0.00	0.00	0.00	0.00	0.99	13.86	19.80	65.35	100.00	101
D	4.69	6.25	1.56	10.94	6.25	15.62	15.62	20.31	12.50	6.25	100.00	64
F	16.36	9.29	11.52	16.36	5.58	11.90	10.04	7.06	4.46	7.43	100.00	269
G	29.05	19.59	10.81	10.14	1.35	8.78	6.76	6.76	4.05	2.70	100.00	148
Total	13.59	8.10	7.27	11.08	3.81	10.97	11.68	12.99	7.87	12.63	100.00	839
Cumul.	13.59	21.69	28.96	40.04	43.85	54.82	66.50	79.49	87.36	100.00		
N	114	68	61	93	32	92	98	109	66	106	839	855
Missing												16

Source: LBJ School of Public Affairs, 1994.

Notes: Legend for control groups: "A" = D-14 certified DBE firms giving their work category as either "engineering" or "miscellaneous;" "B" = D-14 certified DBE firms giving any other work category; "C" = "Prequalified" non-DBE contractors; "D" = "Bidders Questionnaire" non-DBE contractors; "F" = D-18 non-DBE maintenance bidders; and "G" = D-18 DBE maintenance bidders.

Turning now to differences among the various control groups of TxDOT firms it appears that prequalified construction contractors (group C firms), as a group, are substantially larger than their counterparts in other control groups. Of the 101 prequalified construction contractors (group C) responding, all reported gross annual revenues in excess of $500,000 and 65.4% reported revenues in excess of $5,000,000.

Other control groups of construction-oriented firms were not as prevalent as prequalified contractors in the highest revenue categories. For group B firms, 59.4% reported revenues in excess of $500,000 while 7.7% reported revenues exceeding $5,000,000. For group D firms, 54.7% reported revenues in excess of $500,000 while 7.4% reported revenues exceeding $5,000,000. For group A firms, 43.9% reported revenues in excess of $500,000 but less than 1% reported revenues exceeding $5,000,000.

Maintenance-oriented firms—DBE and non-DBE alike—are on average smaller than construction-oriented firms. For non-DBE maintenance firms (group F), only 29.0% reported revenues in excess of $500,000 and only 7.4% reported revenues exceeding $5,000,000. For group G firms, only 20.3% reported revenues in excess of $500,000 while only 2.7% reported revenues exceeding $5,000,000. An even larger share of maintenance contractors is concentrated in the lower revenue ranges than construction contractors. For instance, 53.5% of group F firms and 69.6% of group G firms have gross annual revenues less than $200,000. Almost 30% of group G firms and more than 16% of group F firms have revenues of less than $25,000 annually. In contrast, only 7.7% of group B firms and 4.7% of group D firms had revenues less than $25,000.

Table 2.22: Gross annual revenues, by contractor status, row percentages

	Annual Gross Revenues (in thousands)											
Status	< $25	$25–49	$50–99	$100–199	$200–249	$250–499	$500–999	$1000–2499	$2500–4999	> $5000	TOTAL	N
A	7.39	5.68	3.41	6.25	2.27	6.82	9.66	11.36	9.66	37.50	100.00	176
B	25.82	14.08	13.15	17.37	5.63	8.92	6.10	3.29	1.41	4.23	100.00	213
C	10.34	6.40	5.91	6.90	4.43	12.81	17.24	20.20	9.36	6.40	100.00	203
AB	9.52	0.00	4.76	4.76	4.76	0.00	19.05	28.57	14.29	14.29	100.00	21
ABC	5.26	0.00	5.26	10.53	5.26	21.05	0.00	15.79	21.05	15.79	100.00	19
AC	2.22	6.67	4.44	8.89	0.00	15.56	6.67	13.33	28.89	13.33	100.00	45
BC	3.85	15.38	3.85	19.23	0.00	19.23	3.85	15.38	7.69	11.54	100.00	26
D	0.00	0.00	0.00	0.00	0.00	33.33	0.00	0.00	0.00	66.67	100.00	3
TOTAL	13.31	8.50	7.22	10.48	3.82	10.48	10.34	12.32	8.64	14.87	100.00	706
N	94	60	51	74	27	74	73	87	61	105	706	737
Missing												31

Source: LBJ School of Public Affairs, 1994.

Notes: Legend for contractor status: "A" = general construction contractor; "B" = prime contractor, maintenance; "C" = construction subcontractor; "D" = other. In entries with combinations of categories, each category indicated should be considered to be of equal importance to the firm.

Table 2.22 presents annual revenue ranges according to contractor status—general construction contractors, construction subcontractors, maintenance contractors, and combinations of the three. Of the 176 firms that indicated they were primarily general construction contractors, 37.5% had annual revenues in excess of $5 million. In contrast, only 6.4% of firms identifying as primarily construction subcontractors and 4.2% of firms identifying primarily as maintenance contractors

had annual revenues in excess of $5 million. Construction subcontractors are much larger on average than maintenance contractors. Almost 30% (60/203) of construction subcontractors had annual revenues between $1 million and $5 million. Less than 5% (10/213) of maintenance contractors fell in this range.

The average size of firms that reported combinations (e.g., equally general contractor and subcontractor or equally construction subcontractor and maintenance contractor) falls somewhere between general construction contractors and construction subcontractors. Over 10% of all firms that reported some type of combination reported annual revenues in excess of $5 million. Such firms were also well represented in the $1 million to $5 million range.

The largest firms, on average, reporting combinations were those that reported equal combinations of (1) general construction contracting, construction subcontracting, and maintenance contracting, and (2) general construction contracting and construction subcontracting. The smallest firms, on average, reporting combinations were those reporting an equal combination of maintenance contracting and construction subcontracting.

Table 2.23 presents annual revenue ranges according to the race, ethnicity, and sex of the owner(s). Approximately 16.2% of Anglo-owned firms had revenues in excess of $5 million. An additional 21.7% had revenues in the $1 million to $5 million range. Only 1.1% of Black-owned firms had revenues in excess of $5 million and only 2.1% had revenues between $1 million and $5 million. For Hispanics the respective figures are 4.4% and 22.8%. For Asian/Pacific Islander-Owned firms the respective figures are 5.3% and 21.1%. For Native American-owned firms the respective figures are 4.2% and 41.7%.

At the other end of the revenue range a similar pattern prevails. Approximately 36.3% of Anglo-owned firms had annual gross revenues less than $200,000. For Blacks the figure is 69.2%. For Hispanics the figure is 39.5%. For Asian/Pacific Islanders the figure is 36.8%. For Native American-owned firms the figure is 20.8%.

Full-time Employment

The discussion turns now to employment, the second major indicator of firm size. As shown earlier, the vast majority of business enterprises employ fewer than 500 persons and most employ fewer than twenty persons.

Table 2.23: Gross annual revenues, by race, ethnicity and sex

Group	Annual Gross Revenues											
	< $25	$25–49	$50–99	$100–199	$200–249	$250–499	$500–999	$1000–2499	$2500–4999	> $5000	Total	N
Anglo male	12.80	6.40	7.20	11.20	4.00	9.87	8.53	10.93	9.07	20.00	100.00	375
Anglo female	8.09	6.36	6.94	12.14	4.05	13.87	15.03	15.03	10.40	8.09	100.00	173
Anglo total	11.31	6.39	7.12	11.5	4.01	11.13	10.58	12.23	9.49	16.24	100.00	548
Asian male	17.65	0.00	0.00	17.65	0.00	17.65	17.65	17.65	5.88	5.88	100.00	17
Asian female	0.00	0.00	50.00	0.00	0.00	50.00	0.00	0.00	0.00	0.00	100.00	2
Asian total	15.79	0.00	5.26	15.79	0.00	21.05	15.79	15.79	5.26	5.26	100.00	19
Black male	32.53	16.87	10.84	10.84	1.20	9.64	7.23	7.23	2.41	1.20	100.00	83
Black female	18.18	18.18	9.09	9.09	0.00	18.18	18.18	9.09	0.00	0.00	100.00	11
Black total	30.85	17.02	10.64	10.64	1.06	10.64	8.51	7.45	2.13	1.06	100.00	94
Hispanic male	13.71	12.10	5.65	8.06	4.84	9.68	16.94	18.55	5.65	4.84	100.00	124
Hispanic female	8.33	0.00	8.33	25.00	0.00	16.67	33.33	8.33	0.00	0.00	100.00	12
Hispanic total	13.24	11.03	5.88	9.56	4.41	10.29	18.38	17.65	5.15	4.41	100.00	136
Native Amer. male	0.00	0.00	4.76	14.29	9.52	9.52	14.29	28.57	14.29	4.76	100.00	21
Native Amer. female	0.00	0.00	0.00	33.33	0.00	0.00	33.33	0.00	33.33	0.00	100.00	3
Native Amer. total	0.00	0.00	4.17	16.67	8.33	8.33	16.67	25.00	16.67	4.17	100.00	24
Other minor. male	11.11	22.22	11.11	0.00	11.11	11.11	0.00	11.11	0.00	22.22	100.00	9
Other minor. female	50.00	0.00	50.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	100.00	2
Other minority total	18.18	18.18	18.18	0.00	9.09	9.09	0.00	9.09	0.00	18.18	100.00	11
TOTAL	13.7	8.17	7.33	11.18	3.85	11.06	11.78	12.98	7.93	12.02	100	832
N	114	68	61	93	32	92	98	108	66	100	832	855
Missing												23

Source: LBJ School of Public Affairs, 1994.

Table 2.24 and figure 2.1 show that—consistent with business enterprise nationally—few firms in the TxDOT availability pool had 500 or more employees (i.e., were "large" businesses). Groups A, D, and G reported no firms at all in this range while groups B, C, and F reported 0.7%, 7.9%, and 1.1%, respectively. Across all control groups only 1.4% of firms fell into this category. Still, this latter figure is significantly higher than the 0.5% SBA figure for the nation as a whole mentioned previously.

Also consistent with the nationwide evidence is the share of small and very small business enterprises in the total. Small business enterprises (with 20–499 employees) accounted for 27.6% of all surveyed firms and very small businesses accounted for An additional 71.0%, for an overall total of 98.6%. Group G firms had

the highest concentration of very small firms, followed—in order—by groups F, A, B, D, and C. Only 13.8% of group C firms were classified as very small. Group C had the highest concentration of small businesses, followed—in order—by groups D, B, A, F, and G.

Table 2.24: Annual full-time equivalent employment, by control group

	Business Size		
Group	Very Small	Small	Large
A	79.13	20.87	0.00
B	71.53	27.78	0.69
C	13.86	78.21	7.92
D	64.62	35.38	0.00
F	82.09	16.78	1.12
G	86.21	13.80	0.00
TOTAL	71.00	27.57	1.44

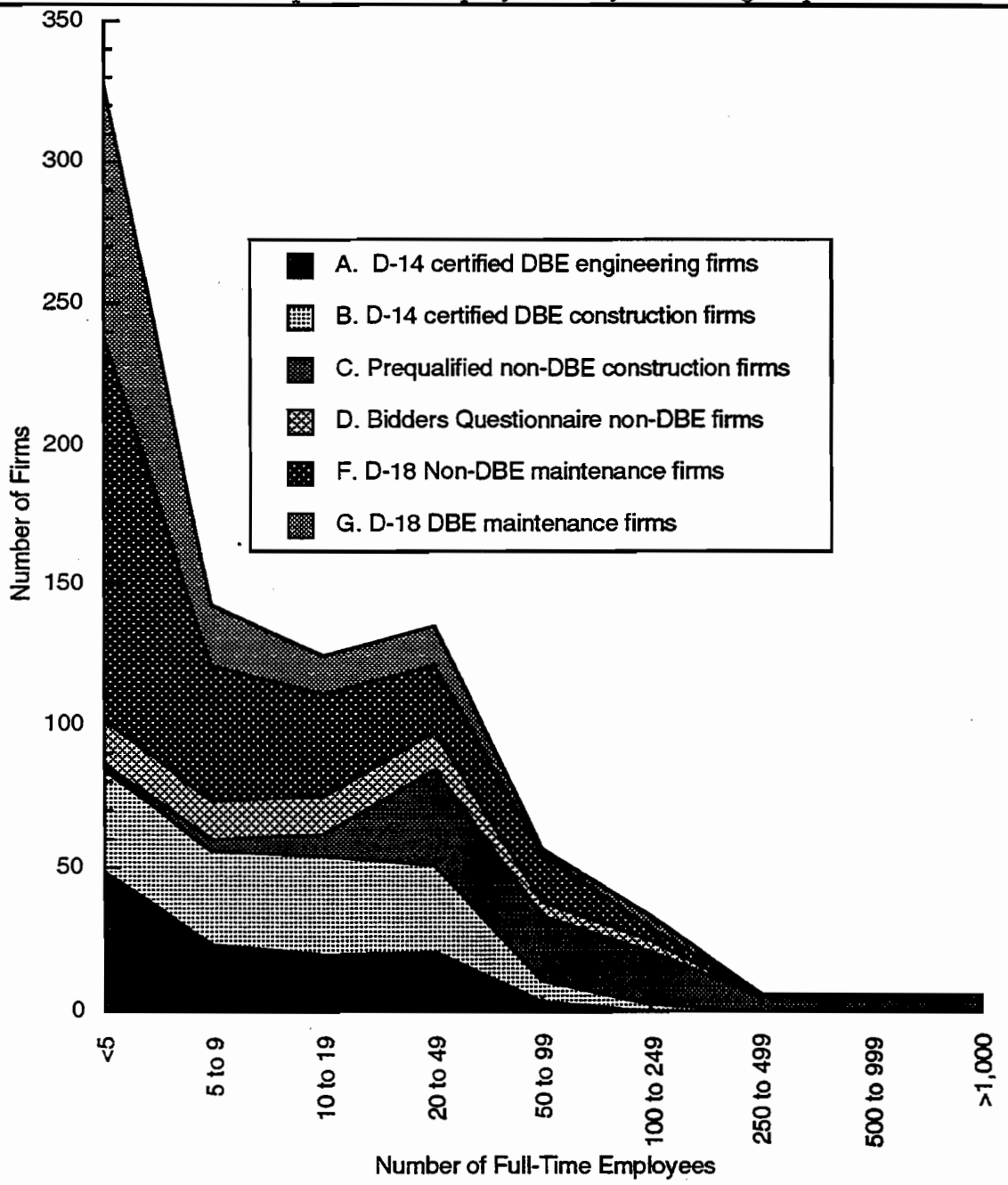
Source: LBJ School of Public Affairs, 1994.

Notes: Legend for control groups: See table 2.24a.

Turning to table 2.25, it appears that general construction contractors constitute the largest firms. Over 5.8% of such firms are classified as large businesses according to their employment figures. Only about 1% of maintenance contractors, none of the construction subcontractors, and none of the businesses reporting equal combinations of contractor status categories qualified as large businesses.

General construction contractors also had the smallest share of very small businesses. Their share is 43.6% versus 89.2% for maintenance contractors and 72.6% for construction subcontractors. Firms reporting combinations of contractors status had smaller shares of very small firms than maintenance contractors or construction subcontractors, but higher shares than general construction contractors.

Figure 2.1: Full-time equivalent employment by control group



Source: LBJ School of Public Affairs, 1994.

In contrast to their share of very small firms, general contractors had the highest share of small businesses—50.6%. This compares to a 9.9% small business share for maintenance contractors and a 27.5% share for construction subcontractors. Again, firms reporting combinations of contractor status tended to fall in between the general contractors, on the one hand, and the construction subcontractors and maintenance contractors, on the other.

Table 2.25: Annual full-time equivalent employment, by contractor status

Status	Business Size		
	Very Small	Small	Large
General construction contractor	43.61	50.59	5.82
Maintenance contractor	89.15	9.91	0.94
Construction subcontractor	72.55	27.45	0.00
Combinations of contractor status			
AB	54.55	45.46	0.00
ABC	65.00	35.00	0.00
AC	53.33	46.67	0.00
BC	80.77	19.24	0.00
D	66.66	33.33	0.00
TOTAL	68.75	29.54	1.70

Source: LBJ School of Public Affairs, 1994.

Table 2.26 shows full-time employment for survey respondents broken down according to race, ethnicity, and sex. Overall 1.2% of firms qualified as large, 27.3% as small, and 71.5% as very small. These tables show further that 1.5% of Anglo-owned firms overall and 2.1% of male-owned Anglo firms qualified as large. Almost 1.2% of male-owned Black firms qualified as large. None of the other minority-owned firms (with the exception of the "other minority" category) and no female-owned firms of any race or ethnicity (including Anglo) had any firms qualifying as large.

Black-owned firms had the largest share of very small firms, 88.3%, versus 77.8% for Hispanics, 75.0% for Asian/Pacific Islanders, 67.2% for Anglos, and 62.5%

for Native Americans. Native Americans had the largest share of small businesses, 37.5%, compared to 31.4% for Anglos, 25.0% for Asian/Pacific Islanders, 22.2% for Hispanics, and only 10.6% for Blacks.

Table 2.26: Annual full-time equivalent employment, by contractor status

Status	Business Size		
	Very Small	Small	Large
Anglo male	64.17	33.69	2.14
Anglo female	73.56	26.44	0.00
Anglo total	67.15	31.38	1.46
Asian male	72.23	27.78	0.00
Asian female	100.00	0.00	0.00
Asian total	75.00	25.00	0.00
Black male	89.28	9.52	1.19
Black female	80.00	20.00	0.00
Black total	88.30	10.63	1.06
Hispanic male	75.41	24.59	0.00
Hispanic female	100.00	0.00	0.00
Hispanic total	77.78	22.22	0.00
Native American male	61.91	38.10	0.00
Native American female	66.66	33.33	0.00
Native American total	62.50	37.50	0.00
Other minority male	75.00	12.50	12.50
Other minority female	100.00	0.00	0.00
Other minority total	80.00	10.00	10.00
TOTAL	71.48	27.32	1.20

Source: LBJ School of Public Affairs, 1994.

RELIANCE ON PUBLIC SECTOR VERSUS PRIVATE SECTOR FOR CONTRACTS AND SUBCONTRACTS

Firms were asked to estimate the percentage of their annual revenue over the prior three years came from public sector (governmental) contracts versus private sector (non-governmental) contracts.

When analyzed by control group, as in table 2.27, the prequalified construction contractors (group C) stand out strongly for their heavy reliance on the public sector. Fully 70.3% of firms in this group reported that public sector contracts or subcontracts provided 75%–100% of their revenues over the three years prior to

the survey. Less than 6.0% of businesses in this group reported that the public sector generated less than 25% of their revenues. Alternatively, only 9.9% of prequalified construction contractors reported that 51% or more of their business was generated by work in the private sector and 78.2% reported that less than 25% of their work came from this sector.

Table 2.27: Importance of private sector work versus public sector work, by control group, row percentages

Group	<10%	10–25%	25–50%	51–75%	75–100%	TOTAL	N
Private sector shares							
A	24.14	17.24	17.24	15.52	25.86	100.00	116
B	46.81	15.60	9.22	12.77	15.60	100.00	141
C	52.48	25.74	11.88	6.93	2.97	100.00	101
D	32.31	6.15	13.85	24.62	23.08	100.00	65
F	29.92	10.98	9.09	17.42	32.58	100.00	264
G	28.08	15.75	8.90	13.01	34.25	100.00	146
TOTAL	34.57	14.89	10.92	14.89	24.73	100.00	
N	288	124	91	124	206	833	
Public sector shares							
A	23.89	12.39	11.50	19.47	32.74	100.00	113
B	19.15	12.06	8.51	12.77	47.52	100.00	141
C	0.99	4.95	7.92	15.84	70.30	100.00	101
D	23.08	23.08	16.92	9.23	27.69	100.00	65
F	39.55	11.19	11.57	9.33	28.36	100.00	268
G	47.95	14.38	7.53	8.90	21.23	100.00	146
TOTAL	29.50	12.23	10.31	11.99	35.97	100.00	
N	246	102	86	100	300	834	

Source: LBJ School of Public Affairs, 1994.

Certified construction DBEs (group B) also exhibited a high degree of reliance on the public sector but much less than prequalified construction contractors (group C). Over 47.5% of group B firms relied on the public sector for more than 75% of their work, versus 70.3% for group C firms. The difference is evidenced by the significantly larger share of certified DBE construction firms that reported they relied on the public sector for less than 25% of their work (31.2%). These trends may also be seen from an examination of the group B responses concerning the private sector. For instance, 15.6% indicated they looked to the private sector for more than 75% of their work and An additional 12.8% indicated they did so for 50%–75% of their work.

Bidders Questionnaire contractors (group D) rely on the private sector more heavily than do prequalified construction firms (group C) or certified DBE firms (group B). About 23.1% of these firms generate more than 75% of their work in the private sector. An additional 24.6% generate 51%–75% of their work in that sector. Only 38.5% of Bidders Questionnaire firms indicated they relied on the private sector for less than 10% of their work opportunities—much less than for either group C or group B firms. Alternately, only 27.7% of group D firms look to the public sector for more than 75% of their business versus 70.3% for group C and 47.5% for group B.

Table 2.28: Importance of private sector work versus public sector work, by contractor status, row percentages

Contractor status	<10%	10–25%	25–50%	51–75%	75–100%	TOTAL	N
Private sector shares							
General construction contractor	41.95	17.82	10.92	10.92	18.39	100.00	174
Maintenance contractor	36.67	10.00	8.10	14.29	30.95	100.00	210
Construction subcontractor	36.00	15.00	10.00	17.50	21.50	100.00	200
TOTAL	36.62	14.59	9.87	14.88	24.03	100.00	584
N	256	102	69	104	168	699	
Public sector shares							
General construction contractor	23.43	8.57	10.29	8.57	49.14	100.00	175
Maintenance contractor	39.23	8.61	11.48	9.09	31.58	100.00	209
Construction subcontractor	26.73	17.82	7.92	12.87	34.65	100.00	202
TOTAL	29.49	12.25	10.26	10.97	37.04	100.00	586
N	207	86	72	77	260	702	

Source: LBJ School of Public Affairs, 1994.

Note: Due to space limitations, detailed results for contractors reporting combinations of status are not listed in this table.

Maintenance-oriented firms are much less reliant on the public sector than their construction-oriented counterparts in the TxDOT availability pool. Only 28.4% of group F firms and 21.2% of group G firms indicated that the public sector provided more than 75% of their businesses in the three years prior to the survey. In this respect, firms in groups F and G are more similar to group D firms than to group C or group B firms. A much larger portion of maintenance-oriented firms has very low reliance on the public sector than is the case for construction-oriented firms. Almost 39.6% of group F firms and fully 48.0% of group G firms indicated that

they generated less than 10% of their revenues in the public sector. Alternately, 32.6% of group F firms and 34.3% of group G firms reported receiving more than 75% of their revenues from private sector work.

Table 2.28 shows that general construction contractors are much more reliant on public sector work than construction subcontractors who, in turn are somewhat more reliant on public sector work than maintenance contractors. Over 49.1% of general contractors reported receiving more than 75% of their work in the public sector versus 34.7% for subcontractors and 31.6% for maintenance contractors. About 32.0% of general contractors, 44.6% of subcontractors, and 47.8% of maintenance contractors did less than 25% of their work in the public sector.

Table 2.29: Importance of private sector work versus public sector work, by racial/ethnic category, row percentages

Racial/Ethnic	<10%	10–25%	25–50%	51–75%	75–100%	TOTAL	N
Private sector shares							
Anglo	27.47	12.64	10.07	11.90	37.91	100.00	546
Asian	26.32	5.26	5.26	21.05	42.11	100.00	19
Black	47.25	10.99	8.79	5.49	27.47	100.00	91
Hispanic	29.20	13.14	13.87	13.14	30.66	100.00	137
Native American	4.35	17.39	4.35	21.74	52.17	100.00	23
Other minority	45.45	0.00	0.00	9.09	45.45	100.00	11
TOTAL	29.50	12.33	10.16	11.85	36.15	100.00	
N	244	102	84	98	299	827	
Public sector shares							
Anglo	34.98	15.02	10.26	15.02	24.73	100.00	546
Asian	31.58	26.32	10.53	10.53	21.05	100.00	19
Black	40.22	13.04	4.35	10.87	31.52	100.00	92
Hispanic	27.94	13.97	19.12	17.65	21.32	100.00	136
Native American	52.17	17.39	4.35	8.70	17.39	100.00	23
Other minority	30.00	10.00	10.00	20.00	30.00	100.00	10
TOTAL	34.75	14.89	10.90	14.77	24.70	100.00	
N	287	123	90	122	204	826	

Source: LBJ School of Public Affairs, 1994.

When firms are categorized according to racial and/or ethnic background, Black-owned firms appear to have the heaviest relative dependence on public sector contracting opportunities (31.5%). This compares to a rate of 24.7% for Anglos, 21.3% for Hispanics, 20.1% for Asians/Pacific Islanders, and 17.4% for Native Americans. Significant shares of firms in all categories also indicated they were minimally dependent on the public sector. Almost 52.2% of Native American-owned firms, for

example, reported relying on the public sector for less than 10% of their revenues. The figure was 40.2% for Blacks, 35.0% for Anglos, 31.6% for Asian/Pacific Islanders, and 27.9% for Hispanics.

When the distinction is made according to sex, as in table 2.30, the groupings appear very similar. Men appear to be somewhat more reliant on the public sector than women, however. For example, 40.7% of male-owned firms reported a dependence on the public sector for 51% or more of their annual business over the three prior years versus a figure of only 35.5% for women. Alternately, almost 53.5% of women reported they receive more than 51% of their revenues privately, versus a figure of about 46.2% for men.

Table 2.30: Importance of private sector work versus public sector work, by sex, row percentages

Sex	<10%	10–25%	25–50%	51–75%	75–100%	TOTAL	N
Private sector shares							
Female	26.24	13.37	6.93	15.35	38.12	100.00	202
Male	30.56	12.00	11.20	10.72	35.52	100.00	625
TOTAL	29.50	12.33	10.16	11.85	36.15	100.00	
N	244	102	84	98	299	827	
Public sector shares							
Female	37.25	17.65	9.31	12.75	23.04	100.00	204
Male	33.92	13.99	11.41	15.43	25.24	100.00	622
TOTAL	34.75	14.89	10.90	14.77	24.70	100.00	
N	287	123	90	122	204	826	

Source: LBJ School of Public Affairs, 1994.

Overall there appears to be a tendency—on average—for firms in the TxDOT availability pool to be either strongly dependent on the public sector for revenues or strongly dependent on the private sector for revenues. Relatively fewer firms reported ranges indicating they were substantially dependent on both sectors (e.g., the 25%–50% range). This tendency holds, at least roughly, regardless of whether the data are observed by control group, contractor status, race/ethnicity, or sex.

GEOGRAPHIC EXTENT OF ECONOMIC MARKET

Overall, between 43–45% of the firms responding to the survey reported the capacity to serve at least multi-county area (e.g., a particular highway district). An

additional 14–15% of firms in the survey reported the capacity to serve a regional area (e.g., several contiguous highway districts). An additional 25–28% reported they served a statewide or larger market. On average only about 14% reported serving only a county-wide or a city-wide market.

Table 2.31: Geographic extent of markets, selected categories, row percentages

	City	County	Counties	Region	State+	TOTAL	N
Control group							
A	6.90	6.03	30.17	6.03	50.86	100.00	116
B	5.63	4.23	39.44	13.38	37.32	100.00	142
C	0.00	1.98	34.65	26.73	36.63	100.00	101
D	1.56	9.38	37.50	21.88	29.69	100.00	64
F	3.68	13.24	52.21	13.24	17.65	100.00	272
G	12.16	13.51	47.97	10.81	15.54	100.00	148
TOTAL	5.34	9.13	43.06	14.12	28.35	100.00	843
N	45	77	363	119	239	843	855
Missing							12
Contractor status							
A	2.27	5.68	42.05	20.45	29.55	100.00	176
AB	4.55	9.09	50.00	4.55	31.82	100.00	22
ABC	0.00	5.00	40.00	30.00	25.00	100.00	20
AC	0.00	4.44	55.56	13.33	26.67	100.00	45
B	7.98	18.31	51.64	7.04	15.02	100.00	213
BC	3.85	3.85	26.92	30.77	34.62	100.00	26
C	5.94	5.45	41.58	18.32	28.71	100.00	202
D	0.00	0.00	33.33	0.00	66.67	100.00	3
TOTAL	4.95	9.34	45.26	15.42	25.04	100.00	707
N	35	66	320	109	177	707	737
Missing							30
Racial/Ethnic							
Anglo	3.09	8.71	46.46	16.88	24.86	100.00	551
Asian	11.11	0.00	27.78	5.56	55.56	100.00	18
Black	18.95	7.37	32.63	8.42	32.63	100.00	95
Hispanic	5.84	14.60	38.69	9.49	31.39	100.00	137
Native	0.00	4.17	41.67	12.50	41.67	100.00	24
Other	0.00	0.00	54.55	9.09	36.36	100.00	11
TOTAL	5.38	9.09	43.18	14.23	28.11	100.00	836
N	45	76	361	119	235	836	855
Missing							19
Sex							
Female	4.41	4.41	45.10	16.18	29.90	100.00	204
Male	5.70	10.60	42.56	13.61	27.53	100.00	632
TOTAL	5.38	9.09	43.18	14.23	28.11	100.00	836
N	45	76	361	119	235	836	855
Missing							19

Source: LBJ School of Public Affairs, 1994.

Prequalified construction contractors are relatively more prevalent in the larger markets. Only 2.0% of such firms served less than a multi-county market. Maintenance contractors were more likely than construction contractors to be limited to a city-wide or county-wide market—DBE maintenance firms even more so. Only 17.7% of group F firms and only 15.5% of group G firms reported serving a statewide or larger market. Similar patterns prevail according to contractor status. General contractors and subcontractors tend to serve larger markets than maintenance contractors.

Black-owned firms appear to have a higher than average concentration in city-wide and county-wide markets. So do Hispanic-owned firms, although to a lesser degree. Native American owned firms, in contrast, have a below average representation in these more localized markets and above average representation in statewide and large markets.

CHAPTER 3. ECONOMIC IMPACTS ON CONTRACTING WITH TXDOT

PREVIOUS EXPERIENCE WORKING WITH TXDOT OR TXDOT CONTRACTORS

Survey respondents were asked to indicate whether they had ever performed work for TxDOT or on TxDOT contracts. Overall 496 of the 855 firms responding (58.0%) answered "yes" to this question. Table 3.1 presents the results according to several of the more useful categorical groupings we have introduced in this report—by control group, by contractor status, and by race/ethnicity/sex.

The control group with the highest proportion of "yes" responses was group C—the prequalified construction contractors—with 94.1%. Only 5.9% of this group reported that they had never worked on TxDOT contracts. Other construction-oriented firms had much lower proportions of "yes" responses than group C firms. About 69.0% of group B firms (certified construction-oriented DBEs) and 67.7% of group D firms (Bidders Questionnaire contractors) indicated they have worked for TxDOT before. Additionally, about 55.9% of group A (certified DBE engineering firms) reported working previously for TxDOT or on TxDOT contracts.

Maintenance-oriented firms as a whole have much less prior experience working for the Department. Only 50.7% of group F firms and only 34.0% of group G firms had worked previously on TxDOT projects. Among maintenance-oriented firms, DBEs appear to have much less prior experience—on average—than non-DBEs.

Considering firms according to contractor status, it appears that more general construction contractors have previous experience with TxDOT than construction subcontractors who, in turn, have more experience with TxDOT than maintenance contractors. General contractors indicated having prior experience in 65.3% of cases. Construction subcontractors reported prior experience in 58.5% of cases. Maintenance contractors reported prior experience with TxDOT in 52.6% of cases. Firms reporting combinations of contractor status had prior experience rates ranging from a low of 57.5% (for general contractor-subcontractor combinations) to a high of 81.8% (for general contractor-maintenance contractor combinations).

Table 3.1: Firms indicating previous work for TxDOT or on TxDOT contracts, selected categories, row percentages

Control group	No	Yes	TOTAL	N
A	44.07	55.93	100.00	118
B	31.03	68.97	100.00	145
C	5.94	94.06	100.00	101
D	32.31	67.69	100.00	65
F	49.28	50.72	100.00	276
G	66.00	34.00	100.00	150
TOTAL	41.99	58.01	100.00	855
N	359	496	855	855
Missing				0
Contractor status				
General construction contractors	34.66	65.34	100.00	176
Maintenance contractors	47.44	52.56	100.00	215
Construction subcontractors	41.46	58.54	100.00	205
Combinations of status				
AB	18.18	81.82	100.00	22
ABC	40.00	60.00	100.00	20
AC	42.55	57.45	100.00	47
BC	34.62	65.38	100.00	26
D	66.67	33.33	100.00	3
TOTAL	40.76	59.24	100.00	714
N	291	423	714	737
Missing				23
Race/Ethnicity/Sex				
Asian female	0.00	100.00	100.00	2
Native American male	14.29	85.71	100.00	21
Asian male	33.33	66.67	100.00	18
Other minority male	33.33	66.67	100.00	9
Anglo male	36.91	63.09	100.00	382
Hispanic female	38.46	61.54	100.00	13
Anglo female	38.86	61.14	100.00	175
Other minority female	50.00	50.00	100.00	2
Hispanic male	53.91	46.09	100.00	128
Black female	54.55	45.45	100.00	11
Black male	64.29	35.71	100.00	84
Native American female	66.67	33.33	100.00	3
TOTAL	42.22	57.78	100.00	848
N	358	490	848	855
Missing				7

Source: LBJ School of Public Affairs, 1994.

Turning to distinctions by race, ethnicity, and sex, table 3.1 shows that approximately 63.1% (241/382) of the Anglo male business owners participating in the survey indicated having previous experience with TxDOT. Male Asian/Pacific Islanders and "Other" minority male-owned firms had rates of prior experience that were slightly higher (66.7% each) than for Anglo males. One hundred percent of female Asian/Pacific Islanders (2/2) and 85.7% of Native American males (18/21) reported prior TxDOT experience—significantly higher than for Anglo males. Female-owned Hispanic firms and female-owned Anglo firms reported slightly lower levels of prior experience than their white male counterparts. The numbers were, respectively, 61.5% and 61.1%.

Male-owned Hispanic firms and female-owned Black firms reported much lower rates of previous TxDOT experience than other groups in the survey. Compared to firms in other racial, ethnic, and sex categories, male-owned Black firms and female-owned Native American firms had the lowest rates of prior experience. Only 35.7% of the Black males and 33.3% of the Native American females responding to the survey had worked on TxDOT contracts previously.

ECONOMIC IMPACTS ON THE ABILITY TO CONTRACT WITH TXDOT

Surveyed firms were asked to specify the impacts of various economic factors on their firm's ability to successfully contract with TxDOT. The economic factors on which the team requested information fell into five categories: (1) Cost of doing business (bonding, workers' compensation, other insurance), (2) Cost of inputs (capital, materials, equipment, labor), (3) Race, ethnicity, sex, and DBE program requirements, (4) Membership in trade and/or professional associations, and (5) Factors directly controlled by TxDOT (e.g., payments, project size, length of notice). Respondents were asked to indicate whether each specific economic factor: (a) was not applicable, (b) helped their prospects of obtaining work, (c) had no effect on their ability to obtain work, (d) hurt their prospects of obtaining work, or (e) eliminated their prospects. Approximately 90.0% of firms reporting they had worked on TxDOT projects in the past provided usable responses to this section of the survey.

This chapter presents rankings of the factors that firms believed to be most helpful as well as most harmful. These listings are presented according to control group. This provides the ability to compare perceptions among the major

construction and maintenance pools available to the Department. These listings appear below in tables 3.2 through 3.7. A complete tabulation of results by control group appears in tables 3.8 through 3.12.

The information gathered and presented here—representing direct feedback from TxDOT's own contractors and subcontractors—will help the Department to better prioritize its various business assistance efforts as well as its attempts to streamline the contracting process. The information presented in this chapter will help to set the context for the discussion of non-economic barriers to participation that follows in chapter four.

Table 3.2: Top ten economic factors most helpful and most harmful to doing business with TxDOT, control group C—prequalified construction firms

Most Helpful

Rank	Factor	Percent
1	Costs of doing business—Bonding requirements	43.01
2	TxDOT controlled factors—Previous dealings with TxDOT	40.86
3	Cost of inputs—Obtaining quotes from suppliers	38.46
4	TxDOT controlled factors—Monthly payment schedule from TxDOT	33.33
5	TxDOT controlled factors—Prequalification requirements	31.87
6	Cost of inputs—Financing	31.18
7	Costs of doing business—Workers' compensation insurance	29.03
8	TxDOT controlled factors—Large project size	23.66
9	Costs of doing business—Other insurance requirements	22.58
10	Cost of inputs—Cost of skilled labor	21.51

Most Harmful

Rank	Factor	Percent
1	DBE factors—DBE program requirements	70.97
2	TxDOT controlled factors—Large project size	37.63
3	DBE factors—Race/ethnicity/sex of owner(s)	19.56
4	TxDOT controlled factors—Retainage on monthly payments	18.68
5	DBE factors—Certification as a DBE	16.85
6	TxDOT controlled factors—Length of notification on bid deadlines	14.13
7	Costs of doing business—Workers' compensation insurance	10.75
8	Cost of inputs—Cost of skilled labor	8.60
9	Cost of inputs—Cost of equipment	8.60
10	TxDOT controlled factors—Prequalification requirements	6.59

Source: LBJ School of Public Affairs, 1994.

Table 3.2 presents the ten most helpful and most harmful economic factors identified by firms in control group C—the prequalified construction contractors. Over 43.0% of prequalified construction firms identified bonding requirements as being most helpful to their ability to procure contracts with TxDOT. Previous

dealings with the Department and ease in obtaining price quotes from suppliers were listed by 40.9% and 38.5% of firms, respectively, as being relatively helpful.

Table 3.2 indicates that cost-related factors and factors under the control of TxDOT provided the most significant advantages for prequalified construction firms. Group C firms indicated they enjoyed cost advantages in bonding, supplier relations, financing, other types of insurance, and skilled labor. Group C firms also indicated they enjoyed TxDOT-related advantages with regard to prior experience with the Department, monthly payments, prequalification requirements, and large project size.

Table 3.3: Top ten economic factors most helpful and most harmful to doing business with TxDOT, control group D—bidders questionnaire firms

Most Helpful

Rank	Factor	Percent
1	TxDOT controlled factors—Previous dealings with TxDOT	71.43
2	Costs of doing business—Bonding requirements	56.10
3	Cost of inputs—Financing	51.22
4	TxDOT controlled factors—Monthly payment schedule from TxDOT	43.90
5	TxDOT controlled factors—Monthly payment schedule from TxDOT primes	38.46
6	Cost of inputs—Obtaining quotes from suppliers	36.59
7	TxDOT controlled factors—Prequalification requirements	35.90
8	Costs of doing business—Other insurance requirements	35.71
9	Costs of doing business—Workers' compensation insurance	35.71
10	TxDOT controlled factors—Large project size	34.15

Most Harmful

Rank	Factor	Percent
1	DBE factors—DBE program requirements	52.50
2	DBE factors—Certification as a DBE	41.03
3	TxDOT controlled factors—Length of notification on bonding requirements	37.50
4	DBE factors—Race/ethnicity/sex of owner(s)	37.50
5	TxDOT controlled factors—Large project size	29.27
6	TxDOT controlled factors—Retainage on monthly payments	28.21
7	Costs of doing business—Workers' compensation	26.19
8	Cost of inputs—Cost of equipment	25.00
9	TxDOT controlled factors—Length of notification on insurance requirements	21.95
10	TxDOT controlled factors—Prequalification requirements	20.51

Source: LBJ School of Public Affairs, 1994.

Table 3.3 shows that Bidders Questionnaire firms (group D) listed almost an identical set of helpful factors as the prequalified construction firms—although in slightly different order of importance. The only factor not also identified by group C firms was the monthly payment schedule from TxDOT prime contractor. The only

factor not also identified by group D firms was cost of skilled labor. Both reflect the larger proportion of subcontractors in the group D pool than the group C pool.

Tables 3.4 and 3.5 show that—in contrast to the non-DBE construction-oriented firms—the certified DBE firms presented a significantly different list of factors that they perceived as helping their ability to obtain TxDOT contracts. Specifically, factors related to the DBE program hold three of the top five positions for both groups. For example, over 68.8% of group B firms and 67.7% of group A firms indicatedn-DBEs is in their opinion of the helpfulness of membership in various trade or professional associations. Group B firms rated these factors fifth and tenth in importance, respectively. Group A firms ranked them fifth and sixth. In contrast, group C firms ranked these two factors eleventh and fifteenth while group D firms ranked them eleventh and twelfth.

Table 3.4: Top ten economic factors most helpful and most harmful to doing iness with TxDOT, control group B—certified construction-oriented DBEs

Most n-DBEs is in their opinion of the helpfulness of membership in various trade or professional associations. Group B firms rated these factors fifth and tenth in importance, respectively. Group A firms ranked them fifth and sixth. In contrast, group C firms ranked these two factors eleventh and fifteenth while group D firms ranked them eleventh and twelfth.

Table 3.4: Top ten economic factors most helpful and most harmful to doing business with TxDOT, control group B—certified construction-oriented DBEs

Most Helpful

Rank	Factor	Percent
1	DBE factors—Certification as a DBE	68.82
2	TxDOT controlled factors—Previous dealings with TxDOT	62.64
3	DBE factors—DBE program requirements	56.99
4	DBE factors—Race/ethnicity/sex of owner(s)	40.00
5	Membership in trade association	30.43
6	TxDOT controlled factors—Large project size	29.79
7	Cost of inputs—Obtaining quotes from suppliers	27.17
8	Costs of doing business—Other insurance requirements	26.88
9	TxDOT controlled factors—Length of notification on bid deadlines	25.53
10	Tie—Membership in professional association/Workers' compensation insurance	22.83

Most Harmful

Rank	Factor	Percent
1	TxDOT controlled factors—Retainage on monthly payments	38.46
2	TxDOT controlled factors—Length of notification on bonding requirements	28.73
3	Costs of doing business—Bonding requirements	26.88
4	Cost of inputs—Cost of equipment	25.28
5	Costs of doing business—Workers' compensation insurance	23.91
6	TxDOT controlled factors—Large project size	21.28
7	Cost of inputs—Cost of skilled labor	20.65
8	TxDOT controlled factors—Prequalification requirements	20.43
9	TxDOT controlled factors—Monthly payment schedule from TxDOT primes	19.36
10	Cost of inputs—Cost of materials	18.48

Source: LBJ School of Public Affairs, 1994.

Remaining factors listed by groups A and B as helpful have much in common with those identified by firms in groups C and D. For example, 62.6% of group B firms and 58.7% of group A firms indicated that previous dealings with the Department were helpful to obtaining future work.

Turning attention now to factors considered to be harmful by survey respondents, tables 3.2 and 3.3 show that both prequalified construction contractors and Bidders Questionnaire contractors ranked DBE factors as three of the top five most harmful to their ability to procure contracts with the Department. Almost 71.0% of group C firms and 52.5% of group D firms indicated that the DBE program requirements were harmful to them their ability to win work from TxDOT. Both groups had significant proportions of firms that believed their race, ethnicity or sex and/or their inability to certify as a DBE harmed or eliminated their chances to work for TxDOT.

Table 3.5: Top ten economic factors most helpful and most harmful to doing business with TxDOT, control group A—certified engineering-oriented DBEs

Most Helpful

Rank	Factor	Percent
1	DBE factors—Certification as a DBE	67.74
2	TxDOT controlled factors—Previous dealings with TxDOT	58.73
3	DBE factors—DBE program requirements	58.06
4	DBE factors—Race/ethnicity/sex of owner(s)	43.33
5	Membership in professional association	42.62
6	Membership in trade association	30.36
7	Costs of doing business—Other insurance requirements	29.03
8	Costs of doing business—Workers' compensation insurance	25.81
9	TxDOT controlled factors—Large project size	18.03
10	TxDOT controlled factors—Length of notification on insurance requirements	16.39

Most Harmful

Rank	Factor	Percent
1	TxDOT controlled factors—Large project size	36.07
2	TxDOT controlled factors—Retainage on monthly payments	23.33
3	Costs of doing business—Other insurance requirements	14.52
4	TxDOT controlled factors—Length of notification on insurance requirements	13.11
5	DBE factors—Race/ethnicity/sex of owner(s)	8.33
6	Cost of inputs—Cost of materials	8.33
7	TxDOT controlled factors—Length of notification on bid deadlines	8.20
8	Costs of doing business—Workers' compensation insurance	8.06
9	Cost of inputs—Financing	4.92
10	DBE factors—DBE program requirements	4.84

Source: LBJ School of Public Affairs, 1994.

These firms also identified several cost-related factors and several TxDOT-related factors that they believed harmed their chances as well. These include retainage on monthly payments, length of notification on bonding, bidding, and insurance requirements, and cost of equipment.

Interestingly, some of the cost-related factors and TxDOT-related factors identified by these group C and D firms as harmful were identified by other businesses in the same groups as helpful. This indicates there is a concentration of firms at one end of the spectrum for which these factors are a disadvantage while there is a concentration at the other end for which they provide an advantage. This type of "bipolar" distribution is not inconsistent with statistics we have observed earlier in this report regarding, for example, firm age, annual revenues, and full-time employment. Factors that fell into this area included large project size, workers' compensation insurance, and prequalification requirements.

Table 3.6: Top ten economic factors most helpful and most harmful to doing business with TxDOT, control group F—Non-DBE maintenance-oriented firms

Most Helpful

Rank	Factor	Percent
1	Cost of inputs—Obtaining quotes from suppliers	66.15
2	DBE factors—Race/ethnicity/sex of owner(s)	62.79
3	TxDOT controlled factors—Length of notification on bid deadlines	62.02
4	TxDOT controlled factors—Monthly payment schedule from TxDOT	60.94
5	TxDOT controlled factors—Monthly payment schedule from TxDOT primes	60.68
6	Cost of inputs—Cost of materials	60.31
7	Membership in trade association	59.69
8	Membership in professional association	58.73
9	Cost of inputs—Cost of skilled labor	57.69
10	TxDOT controlled factors—Prequalification requirements	55.47

Most Harmful

Rank	Factor	Percent
1	TxDOT controlled factors—Length of notification on bonding requirements	35.88
2	TxDOT controlled factors—Large project size	33.08
3	Costs of doing business—Workers' compensation insurance	31.58
4	TxDOT controlled factors—Length of notification on insurance requirements	31.54
5	TxDOT controlled factors—Retainage on monthly payments	30.65
6	Costs of doing business—Other insurance requirements	29.55
7	DBE factors—DBE program requirements	27.42
8	Costs of doing business—Bonding requirements	23.07
9	Cost of inputs—Cost of equipment	19.38
10	Cost of inputs—Cost of materials	17.56

Source: LBJ School of Public Affairs, 1994.

Tables 3.4 and 3.5 reveal that DBE firms primarily perceive cost-related as well as TxDOT-related factors to be the most detrimental to their ability to obtain work. The only exception to this trend was among group A firms. About 13.2% of certified DBE engineering-oriented firms believe not only that the Department's DBE program is not helpful to them but that it is actually harmful.

Table 3.7: Top ten economic factors most helpful and most harmful to doing business with TxDOT, control group G—DBE maintenance-oriented firms

Most Helpful

Rank	Factor	Percent
1	TxDOT controlled factors—Previous dealings with TxDOT	52.38
2	DBE factors—Certification as a DBE	28.95
3	DBE factors—DBE program requirements	27.03
4	Cost of inputs—Obtaining quotes from suppliers	23.26
5	Membership in professional association	21.43
6	TxDOT controlled factors—Monthly payment schedule from TxDOT primes	19.51
7	TxDOT controlled factors—Prequalification requirements	19.51
8	Costs of doing business—Other insurance requirements	18.60
9	Costs of doing business—Workers' compensation insurance	18.60
10	TxDOT controlled factors—Length of notification on bid deadlines	17.07

Most Harmful

Rank	Factor	Percent
1	Costs of doing business—Workers' compensation insurance	44.18
2	TxDOT controlled factors—Length of notification on bonding requirements	42.86
3	TxDOT controlled factors—Large project size	38.10
4	TxDOT controlled factors—Length of notification on insurance requirements	35.71
5	Cost of inputs—Cost of equipment	35.71
6	Costs of doing business—Other insurance requirements	30.24
7	Costs of doing business—Bonding requirements	29.55
8	Costs of doing business—Financing	28.57
9	TxDOT controlled factors—Retainage on monthly payments	27.50
10	TxDOT controlled factors—Prequalification requirements	24.39

Source: LBJ School of Public Affairs, 1994.

The cost factors most often cited by group B firms were bonding requirements, equipment costs, workers' compensation insurance, skilled labor costs, and materials costs. For group A the most often cited cost factors were insurance requirements other than bonding and workers' compensation, cost of materials, workers' compensation insurance, and financing. The TxDOT-controlled factors cited most often by group B firms as harmful were retainage on monthly payments, length of notification on bonding requirements, large project size, prequalification requirements, and monthly payment schedule from TxDOT primes. For group A firms the factors cited most often were large project size, retainage, length of notice on insurance requirements, and length of notice on bid deadlines. Finally, as with group C and D firms, certain factors identified as harmful by some DBEs were identified as helpful by other DBEs. These factors include, for example, large project size, workers' compensation insurance, and length of notification on insurance requirements.

Maintenance-oriented firms (groups F and G) cited a variety of factors as helpful to their ability to obtain work from the Department. Group F firms cited cost advantages such as ease in obtaining quotes from suppliers, cost of materials, and cost of skilled labor. They also cited TxDOT-related advantages such as length of notice on bid deadlines, monthly payment schedules from TxDOT and TxDOT primes, and prequalification requirements. Interestingly, the race, ethnicity, and/or sex of the owner(s) was frequently cited as helpful by group F firms. Group F firms also frequently cited trade and/or professional association membership as helpful to them in obtaining TxDOT work.

For group G firms, previous dealings with TxDOT was cited most frequently. Also cited frequently by group G firms was certification as a DBE and DBE program requirements. Other cost advantages cited by group G firms included ease in obtaining quotes from suppliers, workers' compensation insurance, and other insurance. Other TxDOT-related advantages cited included monthly payment schedule from TxDOT primes, prequalification requirements, and length of notice on bid deadlines. Group G firms also frequently cited membership in professional association—but not trade associations—as helpful to them in obtaining TxDOT work.

Both groups cited length of notification on bonding requirements, large project size, length of notification on insurance requirements, and workers' compensation insurance as the most harmful factors to their ability to obtain TxDOT work. Bonding requirements, other insurance requirements, retainage, and equipment costs were also cited by both groups as being harmful. Group F firms also identified DBE program requirements and materials among the top ten most harmful factors. Group G firms also included financing costs and prequalification requirements among the top ten most harmful factors to their business.

For purposes of completeness and reference, the full tabulation of responses to this section of the survey is presented below according to control group in tables 3.8 through 3.12. Although the preceding tables have highlighted the factors perceived to be helpful and to be harmful, the reader should note that substantial numbers of firms perceived no impact of these economic factors (i.e., neutral) on their ability to procure contracts from the Department.

Table 3.8: Assessment of the impact of factors related to the cost of doing business on the ability to win TxDOT contracts

Costs of doing business—Bonding requirements

Group	N/A	Helps	Neutral	Hurts	Eliminates	TOTAL	N
B	34.41	10.75	27.96	18.28	8.60	100.00	93
C	0.00	43.01	53.76	3.23	0.00	100.00	93
D	0.00	56.10	24.39	14.63	4.88	100.00	41
F	13.08	36.15	27.69	16.92	6.15	100.00	130
G	27.27	15.91	27.27	13.64	15.91	100.00	44
TOTAL	15.21	31.67	33.42	13.47	6.23	100.00	401
N	61	127	134	54	25	401	430
Missing							29

Costs of doing business—Workers' compensation

Group	N/A	Helps	Neutral	Hurts	Eliminates	TOTAL	N
A	25.81	25.81	40.32	8.06	0.00	100.00	62
B	8.70	22.83	44.57	20.65	3.26	100.00	92
C	2.15	29.03	58.06	10.75	0.00	100.00	93
D	0.00	35.71	38.10	23.81	2.38	100.00	42
F	8.27	24.06	36.09	28.57	3.01	100.00	133
G	4.65	18.60	32.56	34.88	9.30	100.00	43
TOTAL	8.39	25.59	42.58	20.86	2.58	100.00	465
N	39	119	198	97	12	465	496
Missing							31

Costs of doing business—Other insurance requirements

Group	N/A	Helps	Neutral	Hurts	Eliminates	TOTAL	N
A	20.97	29.03	35.48	14.52	0.00	100.00	62
B	12.90	26.88	45.16	15.05	0.00	100.00	93
C	2.15	22.58	69.89	5.38	0.00	100.00	93
D	0.00	35.71	45.24	19.05	0.00	100.00	42
F	4.55	28.03	37.88	28.79	0.76	100.00	132
G	4.65	18.60	46.51	23.26	6.98	100.00	43
TOTAL	7.53	26.67	46.88	18.06	0.86	100.00	465
N	35	124	218	84	4	465	496
Missing							31

Source: LBJ School of Public Affairs, 1994.

Table 3.9: Assessment of the impact of factors related to the cost of economic inputs on the ability to win TxDOT contracts

Cost of inputs—Financing

Group	N/A	Helps	Neutral	Hurts	Eliminates	TOTAL	N
A	32.79	11.48	50.82	4.92	0.00	100.00	61
B	24.47	13.83	43.62	15.96	2.13	100.00	94
C	2.15	31.18	61.29	5.38	0.00	100.00	93
D	2.44	51.22	39.02	7.32	0.00	100.00	41
F	10.00	32.31	43.85	13.08	0.77	100.00	130
G	14.29	14.29	42.86	23.81	4.76	100.00	42
TOTAL	14.10	25.60	47.72	11.50	1.08	100.00	461
N	65	118	220	53	5	461	496
Missing							35

Cost of inputs—Cost of materials

Group	N/A	Helps	Neutral	Hurts	Eliminates	TOTAL	N
A	35.00	1.67	55.00	8.33	0.00	100.00	60
B	15.22	14.13	52.17	17.39	1.09	100.00	92
C	2.15	17.20	74.19	6.45	0.00	100.00	93
D	0.00	25.00	57.50	17.50	0.00	100.00	40
F	9.92	12.21	60.31	16.03	1.53	100.00	131
G	7.32	12.20	56.10	21.95	2.44	100.00	41
TOTAL	11.60	13.35	60.18	14.00	0.88	100.00	457
N	53	61	275	64	4	457	496
Missing							39

Cost of inputs—Cost of equipment

Group	N/A	Helps	Neutral	Hurts	Eliminates	TOTAL	N
B	16.48	12.09	46.15	23.08	2.20	100.00	91
C	3.23	20.43	67.74	8.60	0.00	100.00	93
D	5.00	20.00	50.00	25.00	0.00	100.00	40
F	13.18	14.73	52.71	18.60	0.78	100.00	129
G	11.90	9.52	42.86	28.57	7.14	100.00	42
TOTAL	10.63	15.44	53.42	18.99	1.52	100.00	395
N	42	61	211	75	6	395	430
Missing							35

Cost of inputs—Cost of skilled labor

Group	N/A	Helps	Neutral	Hurts	Eliminates	TOTAL	N
B	15.22	10.87	53.26	20.65	0.00	100.00	92
C	2.15	21.51	67.74	8.60	0.00	100.00	93
D	4.88	26.83	53.66	14.63	0.00	100.00	41
F	13.85	12.31	57.69	15.38	0.77	100.00	130
G	13.95	13.95	48.84	16.28	6.98	100.00	43
TOTAL	10.53	15.79	57.64	15.04	1.00	100.00	399
N	42	63	230	60	4	399	430
Missing							31

Cost of inputs—Obtaining quotes from suppliers

Group	N/A	Helps	Neutral	Hurts	Eliminates	TOTAL	N
A	50.00	6.67	41.67	1.67	0.00	100.00	60
B	14.13	27.17	52.17	5.43	1.09	100.00	92
C	3.30	38.46	52.75	5.49	0.00	100.00	91
D	4.88	36.59	58.54	0.00	0.00	100.00	41
F	15.38	15.38	66.15	3.08	0.00	100.00	130
G	16.28	23.26	53.49	6.98	0.00	100.00	43
TOTAL	16.41	23.85	55.58	3.94	0.22	100.00	457
N	75	109	254	18	1	457	496
Missing							39

Source: LBJ School of Public Affairs, 1994.

Table 3.10: Assessment of the impact of the DBE program/Membership in trade or professional associations on the ability to win TxDOT contracts

DBE factors—DBE program requirements

Group	N/A	Helps	Neutral	Hurts	Eliminates	TOTAL	N
A	16.13	58.06	20.97	3.23	1.61	100.00	62
B	6.45	56.99	29.03	7.53	0.00	100.00	93
C	3.23	4.30	21.51	66.67	4.30	100.00	93
D	7.50	12.50	27.50	35.00	17.50	100.00	40
F	26.61	8.06	37.90	22.58	4.84	100.00	124
G	16.22	27.03	43.24	10.81	2.70	100.00	37
TOTAL	13.59	26.28	29.84	26.06	4.23	100.00	449
N	61	118	134	117	19	449	496
Missing							47

DBE factors—Certification as a DBE

Group	N/A	Helps	Neutral	Hurts	Eliminates	TOTAL	N
A	12.90	67.74	19.35	0.00	0.00	100.00	62
B	8.60	68.82	19.35	2.15	1.08	100.00	93
C	43.82	2.25	37.08	13.48	3.37	100.00	89
D	23.08	10.26	25.64	23.08	17.95	100.00	39
F	33.06	8.26	41.32	9.09	8.26	100.00	121
G	15.79	28.95	36.84	13.16	5.26	100.00	38
TOTAL	24.89	30.09	31.00	8.82	5.20	100.00	442
N	110	133	137	39	23	442	496
Missing							54

DBE factors—Race/ethnicity/sex of owner(s)

Group	N/A	Helps	Neutral	Hurts	Eliminates	TOTAL	N
A	15.00	43.33	33.33	8.33	0.00	100.00	60
B	9.47	40.00	36.84	11.58	2.11	100.00	95
C	10.87	0.00	69.57	16.30	3.26	100.00	92
D	12.50	10.00	40.00	25.00	12.50	100.00	40
F	18.60	4.65	62.79	9.30	4.65	100.00	129
G	12.20	9.76	60.98	17.07	0.00	100.00	41
TOTAL	13.57	17.07	52.74	13.13	3.50	100.00	457
N	62	78	241	60	16	457	496
Missing							39

Membership in trade association

Group	N/A	Helps	Neutral	Hurts	Eliminates	TOTAL	N
A	30.36	30.36	39.29	0.00	0.00	100.00	56
B	25.00	30.43	41.30	3.26	0.00	100.00	92
C	18.68	18.68	62.64	0.00	0.00	100.00	91
D	7.50	27.50	65.00	0.00	0.00	100.00	40
F	25.58	12.40	59.69	1.55	0.78	100.00	129
G	23.81	11.90	52.38	9.52	2.38	100.00	42
TOTAL	22.89	20.89	53.78	2.00	0.44	100.00	450
N	103	94	242	9	2	450	496
Missing							46

Membership in professional association

Group	N/A	Helps	Neutral	Hurts	Eliminates	TOTAL	N
A	19.67	42.62	36.07	1.64	0.00	100.00	61
B	26.09	22.83	48.91	2.17	0.00	100.00	92
C	21.74	15.22	63.04	0.00	0.00	100.00	92
D	10.53	28.95	60.53	0.00	0.00	100.00	38
F	30.95	8.73	58.73	0.79	0.79	100.00	126
G	19.05	21.43	52.38	4.76	2.38	100.00	42
TOTAL	23.73	20.40	54.10	1.33	0.44	100.00	451
N	107	92	244	6	2	451	496
Missing							45

Source: LBJ School of Public Affairs, 1994.

Table 3.11: Assessment of the impact of factors directly controlled by TxDOT on the ability to win TxDOT contracts, part one of two

TxDOT controlled factors—Previous dealings with TxDOT

Group	N/A	Helps	Neutral	Hurts	Eliminates	TOTAL	N
A	15.87	58.73	20.63	1.59	3.17	100.00	63
B	17.58	62.64	18.68	1.10	0.00	100.00	91
C	2.15	40.86	55.91	1.08	0.00	100.00	93
D	0.00	71.43	26.19	0.00	2.38	100.00	42
F	5.30	59.85	34.09	0.00	0.76	100.00	132
G	14.29	52.38	30.95	2.38	0.00	100.00	42
TOTAL	8.86	56.80	32.61	0.86	0.86	100.00	463
N	41	263	151	4	4	463	496
Missing							33

TxDOT controlled factors—Large project size

Group	N/A	Helps	Neutral	Hurts	Eliminates	TOTAL	N
A	22.95	18.03	22.95	27.87	8.20	100.00	61
B	11.70	29.79	37.23	17.02	4.26	100.00	94
C	2.15	23.66	36.56	33.33	4.30	100.00	93
D	7.32	34.15	29.27	21.95	7.32	100.00	41
F	10.00	23.08	33.85	24.62	8.46	100.00	130
G	9.52	14.29	38.10	23.81	14.29	100.00	42
TOTAL	10.20	24.08	33.62	24.95	7.16	100.00	461
N	47	111	155	115	33	461	496
Missing							35

TxDOT controlled factors—Prequalification requirements

Group	N/A	Helps	Neutral	Hurts	Eliminates	TOTAL	N
B	23.66	16.13	39.78	16.13	4.30	100.00	93
C	1.10	31.87	60.44	6.59	0.00	100.00	91
D	2.56	35.90	41.03	20.51	0.00	100.00	39
F	8.59	19.53	55.47	15.62	0.78	100.00	128
G	4.88	19.51	51.22	14.63	9.76	100.00	41
TOTAL	9.44	23.21	51.02	14.03	2.30	100.00	392
N	37	91	200	55	9	392	430
Missing							38

TxDOT controlled factors—Monthly payment schedule from TxDOT

Group	N/A	Helps	Neutral	Hurts	Eliminates	TOTAL	N
A	39.34	14.75	45.90	0.00	0.00	100.00	61
B	20.65	20.65	42.39	15.22	1.09	100.00	92
C	1.08	33.33	62.37	3.23	0.00	100.00	93
D	0.00	43.90	43.90	12.20	0.00	100.00	41
F	8.59	15.62	60.94	14.06	0.78	100.00	128
G	9.76	12.20	65.85	4.88	7.32	100.00	41
TOTAL	12.94	22.37	54.39	9.21	1.10	100.00	456
N	59	102	248	42	5	456	496
Missing							40

TxDOT controlled factors—Monthly payment schedule from TxDOT prime contractors

Group	N/A	Helps	Neutral	Hurts	Eliminates	TOTAL	N
A	42.37	11.86	42.37	3.39	0.00	100.00	59
B	20.43	22.58	37.63	18.28	1.08	100.00	93
C	10.23	15.91	69.32	4.55	0.00	100.00	88
D	2.56	38.46	48.72	10.26	0.00	100.00	39
F	20.51	10.26	60.68	8.55	0.00	100.00	117
G	12.20	19.51	56.10	7.32	4.88	100.00	41
TOTAL	18.99	17.62	53.55	9.15	0.69	100.00	437
N	83	77	234	40	3	437	496
Missing							59

Source: LBJ School of Public Affairs, 1994.

Table 3.12: Assessment of the impact of factors directly controlled by TxDOT on the ability to win TxDOT contracts, part two of two

TxDOT controlled factors—Retainage on monthly payments

Group	N/A	Helps	Neutral	Hurts	Eliminates	TOTAL	N
A	33.33	3.33	40.00	23.33	0.00	100.00	60
B	12.09	4.40	45.05	38.46	0.00	100.00	91
C	2.20	6.59	72.53	18.68	0.00	100.00	91
D	0.00	15.38	56.41	28.21	0.00	100.00	39
F	10.48	7.26	51.61	29.84	0.81	100.00	124
G	7.50	12.50	52.50	25.00	2.50	100.00	40
TOTAL	11.01	7.19	53.48	27.87	0.45	100.00	445
N	49	32	238	124	2	445	496
Missing							51

TxDOT controlled factors—Length of notification on bid deadlines

Group	N/A	Helps	Neutral	Hurts	Eliminates	TOTAL	N
A	36.07	9.84	45.90	6.56	1.64	100.00	61
B	10.64	25.53	51.06	12.77	0.00	100.00	94
C	2.17	8.70	75.00	14.13	0.00	100.00	92
D	0.00	15.38	69.23	12.82	2.56	100.00	39
F	6.98	14.73	62.02	16.28	0.00	100.00	129
G	4.88	17.07	68.29	4.88	4.88	100.00	41
TOTAL	9.87	15.35	61.40	12.50	0.88	100.00	456
N	45	70	280	57	4	456	496
Missing							40

TxDOT controlled factors—Length of notification on bonding requirements

Group	N/A	Helps	Neutral	Hurts	Eliminates	TOTAL	N
B	30.85	9.57	30.85	21.28	7.45	100.00	94
C	4.35	14.13	75.00	6.52	0.00	100.00	92
D	5.00	20.00	37.50	35.00	2.50	100.00	40
F	9.16	13.74	41.22	29.77	6.11	100.00	131
G	7.14	11.90	38.10	28.57	14.29	100.00	42
TOTAL	12.53	13.28	45.86	22.81	5.51	100.00	399
N	50	53	183	91	22	399	430
Missing							31

TxDOT controlled factors—Length of notification on insurance requirements

Group	N/A	Helps	Neutral	Hurts	Eliminates	TOTAL	N
A	27.87	16.39	42.62	13.11	0.00	100.00	61
B	13.83	18.09	50.00	17.02	1.06	100.00	94
C	3.26	14.13	77.17	5.43	0.00	100.00	92
D	7.32	19.51	51.22	21.95	0.00	100.00	41
F	7.69	14.62	46.15	30.77	0.77	100.00	130
G	2.38	16.67	45.24	28.57	7.14	100.00	42
TOTAL	10.22	16.09	53.04	19.57	1.09	100.00	460
N	47	74	244	90	5	460	496
Missing							36

Source: LBJ School of Public Affairs, 1994.

CHAPTER 4. PERCEIVED DISCRIMINATORY BARRIERS TO PARTICIPATION IN THE TXDOT CONTRACTING PROCESS

The DBE firms in the survey (control groups A, B, and G) were asked to identify any barriers to their participation in the highway construction industry in Texas that they had met with and which they believed were due primarily to race, ethnicity, gender, or disability. Firms indicated whether a specific barrier was encountered: (a) never, (b) seldom, (c) occasionally, (d) frequently, or (e) almost always. An average of approximately 76% of the 413 firms in control groups A, B, and G provided usable responses to this section of the survey.

Alleged institutional and/or individual actions inhibiting participation were grouped into three areas: (1) barriers imposed by financial institutions, bonding institutions, professional and/or trade associations, or input suppliers; (2) barriers imposed by TxDOT and/or its employees; and (3) barriers imposed by TxDOT contractors or subcontractors. In each of these areas, a list presented a number of barriers specific to that area.[1] In all instances, substantial numbers of DBE firms alleged the presence of numerous discriminatory barriers. As the tables below make clear, many of these barriers originated in the financing and bonding sectors of the industry. Private contractors were also identified as imposing discriminatory barriers in numerous instances. TxDOT was the least often identified as the major source of barriers.

This chapter presents rankings of the barriers cited most often by firms as being met with either "frequently" or "almost always." These listings are presented according to race and ethnic group to provide the ability to compare perceptions among the various DBE pools available to the Department. These listings appear below in tables 4.1 through 4.6. A complete tabulation of the thirty-eight barriers for all DBE firms in the survey appears in table 4.7. In addition to this table, firms were asked a selected set of questions designed to elicit more detailed responses regarding the existence, if any, of discriminatory barriers to participation in the Texas market for highway construction. Although not included here due to space

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1 The list of barriers employed was the result of an exhaustive examination of discriminatory barriers identified in our previous minority business research and in other disparity studies conducted in the last few years by other state governments (See also Volume 980-2, chapter 3). A complete listing of the thirty-eight barriers presented in the three areas appears in table 4.7.

limitations, these open-ended responses provide more detailed narratives and more specific examples of the types of barriers identified in the following pages of this report.

As with the last chapter, the information gathered and presented here represents direct feedback from TxDOT's own DBE contractors, subcontractors, and engineering services firms that can help decision-makers in the Department identify me accurately the most acute problem areas DBEs perceive. Such information can better enable the Department to determine its interest in a state-funds DBE program and to tailor more efficiently its resources in addressing problem areas.

Table 4.1: Top ten most frequently encountered barriers to participation based on race, ethnicity, and/or sex, Anglo-owned female DBEs

Rank	Factor	Area	Percent
1	Excessive collateral requirements	1	20.64
2	Requests for co-signature	1	20.31
3	Disbelief of asset ownership	1	13.71
4	Higher bonding rates	1	13.18
5	Bid shopping/peddling to majority contractors	3	12.82
6	Late/no notice of bid opportunities	2	12.71
7	Refusal of consideration for bank loans	1	12.60
8	No notice of subcontracting opportunities	3	10.64
9	Inordinate time required to establish credit	1	10.00
10	Refusal of consideration for insurance or bonding	1	8.13

Source: LBJ School of Public Affairs, 1994.

Note: Percentage column measures only those firms indicating a barrier was met with "frequently" or "almost always." An additional 6.8% to 17.3% of firms indicated encountering the above barriers "occasionally" as well.

Table 4.1 presents a list of the ten barriers most often encountered by female Anglo-owned firms in the TxDOT contracting pool. Over 20.6% of these firms (26/128) reported that financial institutions "frequently" or "almost always" imposed excessive collateral requirements. An additional 20.3% of these firms (26/128) reported that financial institutions required cosigners. These firms perceived that the primary reason these barriers were because the firms was female-owned. An additional 13.7% of female Anglo-owned firms (17/124) reported disbelief of asset ownership by financial institutions and 12.6% of firms (16/127) reported outright refusal by financial institutions to consider female Anglo-owned firms for loans. Similar circumstances for female business owners have been

reported throughout the country. According to the National Women Business Enterprise Association, a non-profit trade association:

> lending institutions refuse to lend money to women more often than men. When lending institutions do lend money to women, a cosigner is usually required. Ironically, by using a cosigner women jeopardize their certification status in the DBE program. As a result, WBEs tend to start their businesses with substantially less capital than men and usually with no borrowed capital. According to the U.S. Department of Labor, 80% of all new WBEs are started from scratch and are not reformed or inherited companies" (Payne 1990, 137).

Bonding institutions also were a source of perceived discriminatory barriers by a number of the woman-owned firms in the survey. Almost 13.2% (12/91) reported being charged higher rates for bonding due to their sex and An additional 8.1% (10/123) reported outright refusal of consideration for bonding due to their sex.

Overall, seven of the top ten most severe barriers that firms came across emanated from either financial institutions or bonding institutions. Of the remaining three barriers in the top ten, two emanated from the private sector and one from the public sector.

Table 4.2: Top ten most frequently encountered barriers to participation based on race, ethnicity, and/or sex, Black-owned DBEs

Rank	Factor	Area	Percent
1	Excessive collateral requirements	1	53.09
2	Refusal of consideration for bank loans	1	52.50
3	Refusal of consideration for insurance or bonding	1	40.58
4	No notice of subcontracting opportunities	3	38.34
5	Higher bonding rates	1	35.59
6	Insistence on cash payment	1	32.91
7	Loan application status changed after personal mtg.	1	32.90
8	Requests for co-signature	1	32.46
9	Disbelief of asset ownership	1	32.43
10	Higher insurance rates	1	31.25

Source: LBJ School of Public Affairs, 1994.

Note: Percentage column measures only those firms indicating a barrier was encountered "frequently" or "almost always." An additional 7.9% to 15.2% of firms indicated encountering the above barriers "occasionally" as well.

Over 12.8% of firms (15/117) reported that their bids were bid shopped to majority male-owned firms due to their sex. An additional 10.6% (10/94) reported that, due to their sex, they received no notice of subcontracting opportunities from majority male contractors. The most severe barrier imposed by the public sector on firms due to their sex was reported to be late notice or no notice at all of bid opportunities available. This barrier was reported by over 12.7% of respondent firms (15/118).

Table 4.2 presents a list of the ten barriers most often encountered by Black-owned firms in the TxDOT contracting pool, both male and female. Like female Anglo-owned firms, Blacks reported severe barriers being imposed by financial and bonding institutions. Unlike female Anglo-owned firms, however, the percentages reporting that they came across these barriers either "frequently" or "almost always" were dramatically higher. Almost 53.1% (43/80) of Black-owned firms responding reported excessive collateral requirements imposed by financial institutions. An additional 52.5% (42/80) reported outright refusal by banks to consider them for loans. Almost 32.5% (25/77) reported requests for co-signature and over 32.4% (24/74) reported disbelief of asset ownership. Along with these institutional barriers, substantial overt discrimination was also reported by Black-owned firms in the survey. Almost 33.0% (25/76) reported that their loan application status was downgraded after their race was discovered during a face-to-face meeting with an officer of a financial institution. Overall, five of the ten most severe barriers encountered by Black-owned firms issued from financial institutions.

Another three of the top ten came from bonding and other types of insurance institutions. Almost 40.6% (28/69) reported outright refusal by sureties for bonding or insurance companies for other types of insurance due to their race. In instances where approval was received, 35.6% of firms (21/59) reported being forced to pay higher bonding rates, and 31.3% (25/80) of firms reported being forced to pay higher insurance rates.

Only two of the top ten most severe barriers from Blacks originated in other sectors. Black-owned firms also reported as a severe barrier material suppliers refusing to extend credit and insisting on cash payment for inputs due to their race. Over 32.9% (26/79) of firms reported this barrier. Also, over 38.3% of Black firms (23/60) reported not receiving notice of subcontracting opportunities from private contractors due to their race.

Finally it should be noted that for Blacks the top ten list of most severe barriers does not adequately portray the impact perceived by this group of firms. Of the thirty-eight barriers listed in the survey seventeen were cited by more than 20% of Black firms responding, twenty-three were cited by more than 15%, and thirty were cited by more than 10%. In addition to the top ten barriers presented in table 4.2 other severe race-based barriers identified by Black-owned firms included:

- Double standards of performance (29.3%);
- Use of firm in name only to fulfill majority firm's DBE requirement (28.8%);
- Bid shopping to majority contractors (27.5%);
- Higher price quotes from material suppliers ((27.3%);
- Bid shopping after contract is awarded (22.4%);
- Late or misleading notices of bid opportunities from private firms (22.2%);
- Late or no notice of bid opportunities from TxDOT (21.8%);
- Tougher than normal inspections by TxDOT (19.4%);
- Delayed or partial payments by private contractors (18.6%);
- Personal harassment by personnel of financial institutions (16.7%);
- Rejection by TxDOT of valid bids (16.2%);
- Unfair evaluations by prime contractors leading to removal from job (15.5%);
- Misleading information from TxDOT regarding bid requirements (15.1%).

Additionally, frequent personal harassment was encountered far more often by Blacks than by other types of DBEs. In this survey, 16.7% of Black firms reported frequent personal harassment by personnel of financial or bonding institutions, 13.6% reported frequent personal harassment by private contractors, and 7.8% reported frequent personal harassment by TxDOT personnel. Comparable percentages for other types of DBE firms, respectively, are: 5.7%, 1.1%, and 0.0% for women; 3.7%, 3.0%, and 1.0% for Hispanics; 5.3%, 0.0%, and 0.0% for Asian/Pacific Islanders; 7.7%, 0.0%, and 0.0% for Native Americans; and 16.7%, 0.0%, and 0.0% for other minority firms.

Turning to table 4.3, Hispanic-owned firms (male and female alike) came across severe discriminatory barriers with greater frequency than Anglo-owned female firms but with less frequency than Black-owned firms. Similar to Anglo females and Blacks, Hispanics reported that the most severe discrimination was issuing from the financial and bonding sectors of the industry. The single most severe barrier

reported was excessive collateral requirements. More than 27.0% of Hispanic firms (30/111) cited this barrier in the survey. Other discriminatory financial barriers cited included requests for co-signature (17.6% or 19/108), higher bonding rates (15.9% or 10/63), outright refusal of consideration for bank loans (15.8% or 18/114), disbelief of asset ownership (13.1% or 14/107), and higher insurance rates (12.2% or 13/107).

Table 4.3: Top ten most frequently encountered barriers to participation based on race, ethnicity, and/or sex, Hispanic-owned DBEs

Rank	Factor	Area	Percent
1	Excessive collateral requirements	1	27.02
2	No notice of subcontracting opportunities	3	23.52
3	Bid shopping/peddling to majority contractors	3	20.19
4	Requests for co-signature	1	17.59
5	Higher bonding rates	1	15.87
6	Refusal of consideration for bank loans	1	15.79
7	Delayed or partial payments	3	14.57
8	Disbelief of asset ownership	1	13.09
9	Bid shopping/peddling after contract signed	3	12.50
10	Higher insurance rates	1	12.15

Source: LBJ School of Public Affairs, 1994.

Note: Percentage column measures only those firms indicating a barrier was encountered "frequently" or "almost always." An additional 7.8% to 23.7% of firms indicated encountering the above barriers "occasionally" as well.

Discriminatory barriers imposed by private construction contractors appeared more often among the top ten barriers for Hispanics than for either Anglo females or Blacks. Over 23.5% (16/68) of Hispanic firms reported no notice of subcontracting opportunities from private firms, 20.2% (21/104) reported bid shopping to majority firms, 14.6% (15/103) reported delayed or partial payments from private firms, and 12.5% (8/64) reported bid shopping by private firms after the award of a contract.

Table 4.4 presents the ten barriers cited most frequently by Asian/Pacific Islander-owned firms (male or female). Four of the top ten barriers for these firms originated in the financing and bonding sectors of the industry, two of ten originated in private firms, and four of ten originated within TxDOT.

The most severe financial barriers cited by Asians were inordinately long time required to establish credit (18.8% or 3/16), excessive collateral requirements (10.5% or 2/19), and outright refusal of consideration for bank loans (10.5% or 2/19). The fourth financial factor (with 5.3% or 1/19) was a tie among five additional financial

barriers: outright refusal of consideration for bonding or insurance, requests for co-signature, personal harassment by personnel of financial institutions, and refusal to extend credit/insistence on cash payment from material suppliers.

Table 4.4: Top ten most frequently encountered barriers to participation based on race, ethnicity, and/or sex, Asian/Pacific Islander-owned DBEs

Rank	Factor	Area	Percent
1	Inordinate time required to establish credit	1	18.75
2	Late/misleading notices	3	12.50
3	Late/no notice of bid opportunities	2	11.12
4	Excessive collateral requirements	1	10.53
5	Refusal of consideration for bank loans	1	10.52
6	Bid shopping/peddling to majority contractors	3	6.25
7	Misleading information regarding bid requirements	2	5.88
8	Changing bid criteria	2	5.88
9	Misleading information regarding certification	2	5.56
10	Refusal of consideration for insurance or bonding (See note)	1	5.26

Source: LBJ School of Public Affairs, 1994.

Note: Five factors tied for tenth place with 5.26%. In addition to the factor listed they were requests for co-signature, higher insurance rates, personal harassment (area 1), and insistence on cash payment.

Percentage column measures only those firms indicating a barrier was encountered "frequently" or "almost always." An additional 0.0% to 10.5% of firms indicated encountering the above barriers "occasionally" as well.

Table 4.5: Top ten most frequently encountered barriers to participation based on race, ethnicity, and/or sex, Native American-owned DBEs

Rank	Factor	Area	Percent
1	Requests for co-signature	1	38.46
2	Bid shopping/peddling to majority contractors	3	36.36
3	Disbelief of asset ownership	1	25.00
4	Inordinate time required to establish credit	1	25.00
5	Delayed or partial payments	3	18.18
6	Refusal of consideration for insurance or bonding	1	16.66
7	Excessive collateral requirements	1	16.66
8	Tougher than normal inspections	2	14.29
9	Bid shopping/peddling after contract signed	3	14.29
10	Higher bonding rates	1	12.50

Source: LBJ School of Public Affairs, 1994.

Note: Percentage column measures only those firms indicating a barrier was encountered "frequently" or "almost always." An additional 0.0% to 25.0% of firms indicated encountering the above barriers "occasionally" as well.

The two barriers originating within private firms cited most frequently by Asian DBEs were late or misleading bid notices (12.5% or 2/16) and bid shopping to majority contractors (6.3% or 1/16). The four barriers originating within TxDOT cited most frequently by Asian firms were late or no notices of bid opportunities (11.1% or 2/18), misleading information regarding bid requirements (5.9% or 1/17), changing bid criteria (5.9% or 1/17), and misleading certification information (5.6% or 1/18).

Table 4.5 presents the ten barriers cited most frequently by Native American-owned firms (male or female). Six of the top ten barriers for these firms originated in the financing and bonding sectors of the industry, three of ten originated in private firms, and one of ten originated within TxDOT.

The most severe financial barriers cited by Native Americans were, requests for co-signature (38.5% or 5/13), disbelief of asset ownership (25.0% or 4/12), inordinately long time required to establish credit (25.0% or 4/12), outright refusal of consideration for bonding or insurance (16.7% or 2/12), excessive collateral requirements (16.7% or 2/12), and higher rates for bonding (12.5% or 1/8).

Table 4.6: Top ten most frequently encountered barriers to participation based on race, ethnicity, and/or sex, Other minority-owned DBEs

Rank	Factor	Area	Percent
1	Excessive collateral requirements	1	50.00
2	Refusal of consideration for bank loans	1	40.00
3	Disbelief of asset ownership	1	33.34
4	Requests for co-signature	1	33.33
5	Higher bonding rates	1	33.33
6	Refusal of consideration for insurance or bonding	1	20.00
7	Loan application status changed after personal mtg. (See note)	1	16.67
8	Higher insurance rates (See note)	1	16.67
9	Personal harassment (See note)	1	16.67
10	Higher price quotes from suppliers (See note)	1	16.67

Source: LBJ School of Public Affairs, 1994.

Note: Three other factors were listed by 16.67% of the group: insistence on cash payment, refusal of admission to professional association, refusal of admission to trade association.

The three barriers originating within private firms cited most frequently by Native American DBEs were bid shopping to majority contractors (36.4% or 4/11), delayed or partial payments (18.2% or 2/11), and bid shopping after the award of a contract (14.3% or 1/7). The one barrier originating within TxDOT cited most

frequently by Native American firms were tougher than normal inspections (14.3% or 1/7).

The top ten barriers most frequently cited by other types of minority-owned firms emanated exclusively within the financial and bonding sectors of the industry and included. These barriers are reported in table 4.6%.

Table 4.7: Assessment of the impact of barriers to participation based on race, ethnicity, and/or sex, control groups A, B, and G

Barrier	Area	A	B	C	D	E	TOTAL	N
Excessive collateral requirements	1	45.79	7.58	16.85	14.61	15.17	100.00	356
Refusal of consideration for bank loans	1	48.60	10.61	18.16	11.45	11.17	100.00	358
Requests for co-signature	1	54.26	9.66	13.92	11.65	10.51	100.00	352
No notice of subcontracting opportunities	3	56.17	8.51	14.47	9.36	11.49	100.00	235
Higher bonding rates	1	59.21	8.77	12.28	7.02	12.72	100.00	228
Bid shopping/peddling to majority contractors	3	61.11	7.41	12.65	9.88	8.95	100.00	324
Disbelief of asset ownership	1	57.14	11.66	13.70	8.75	8.75	100.00	343
Refusal of consideration for insurance or bonding	1	64.31	7.67	11.80	5.01	11.21	100.00	339
Higher insurance rates	1	62.36	11.21	12.07	6.32	8.05	100.00	348
Insistence on cash payment	1	58.29	14.57	13.43	6.29	7.43	100.00	350
Use of DBE firm in name only to fulfill DBE goal	3	67.67	9.91	9.48	4.31	8.62	100.00	232
Double standards of performance	3	68.10	10.34	8.62	6.03	6.90	100.00	232
Loan application status changed after personal mtg.	1	72.05	7.20	8.07	6.34	6.34	100.00	347
Late/no notice of bid opportunities	2	60.59	12.94	13.82	4.12	8.53	100.00	340
Delayed or partial payments	3	66.36	7.95	13.46	7.03	5.20	100.00	327
Inordinate time required to establish credit	1	59.81	15.89	12.15	6.54	5.61	100.00	107
Higher price quotes from suppliers	1	60.00	14.71	14.12	5.59	5.59	100.00	340
Bid shopping/peddling after contract signed	3	69.33	11.56	8.00	4.00	7.11	100.00	225
Late/misleading notices	3	67.58	8.79	13.33	4.85	5.45	100.00	330
Tougher than normal inspections	2	67.24	10.78	12.93	3.88	5.17	100.00	232
Personal harassment	1	61.96	15.27	14.99	4.32	3.46	100.00	347
Unfair evaluation, leading to removal from job	3	80.09	8.23	5.19	1.73	4.76	100.00	231
Misleading information regarding certification	2	78.21	8.66	6.87	2.99	3.28	100.00	335
Rejection of low bids	3	78.46	8.31	8.31	1.85	3.08	100.00	325
Personal harassment	3	78.02	10.34	6.90	1.72	3.02	100.00	232
Rejection of valid bids	2	84.85	5.15	5.45	1.52	3.03	100.00	330
Withdrawal of award after face-to-face meeting	3	86.73	5.25	3.70	1.23	3.09	100.00	324
Misleading information regarding bid requirements	2	81.65	6.73	7.65	1.83	2.14	100.00	327
Inability to bid on gov't contracts due to mfg. bias	1	85.98	6.54	3.74	1.87	1.87	100.00	107
Changing bid criteria	2	82.67	7.29	6.38	1.22	2.43	100.00	329
Refusal of admission to professional association	1	82.71	9.80	4.03	0.86	2.59	100.00	347
Arbitrary termination of existing contract	3	84.76	4.27	7.62	1.52	1.83	100.00	328
Refusal of manufacturer to do business	1	79.44	12.15	5.61	1.87	0.93	100.00	107
Withdrawal of award after face-to-face meeting	2	91.92	3.29	2.10	0.90	1.80	100.00	334
Refusal to accept bids	2	89.70	5.15	2.73	1.21	1.21	100.00	330
Refusal of admission to trade association	1	85.76	8.61	3.26	0.59	1.78	100.00	337
Personal harassment	2	85.33	8.08	4.49	0.90	1.20	100.00	334
Withdrawal of distribution agreement	1	89.81	8.33	0.93	0.93	0.00	100.00	108

Source: LBJ School of Public Affairs, 1994.

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APPENDIX A:

QUESTIONNAIRES

This appendix contains replicas of the three survey instruments used to collect the information presented in this report. The research team sent a survey to each firm named on one or more of the four lists discussed in chapter one. A table on perceived barriers was included on the DBE surveys only. Overall, the team sent three separate survey instruments to six distinct groups of business enterprises. The survey sent to firms in groups C, D, or F was entitled "Contractors Questionnaire." DBEs in groups B and G received a survey form entitled "DBE Contractor Questionnaire." Minor adjustments were made in wording and format to accommodate firms in group A. These firms received a survey entitled "DBE Purchasing/ Professional Service Questionnaire" that attempted to take into account the differences between this somewhat disparate group and the more traditionally construction-oriented firms.

TEXAS DEPARTMENT OF TRANSPORTATION
CONTRACTORS QUESTIONNAIRE

Part I: Business Characteristics

I.1. What is the name of your business_____
_____

I.2. Are you the owner/manager of your firm?

_____A. yes _____B. no

I.2a. If not, please specify the capacity in which you serve your firm _____
_____

Please answer either question I.3 if you are primarily a *construction* contractor, or question I.4 if you are primarily a *maintenance* contractor. If you compete in areas of work in both categories, answer both I.3 and I.4, but please indicate which category is more important to your firm in question I.5.

I.3. What is (are) your construction company's primary line(s) of business?

_____A. Asphalt
_____B. Concrete Paving
_____C. Engineering
_____D. Fencing
_____E. Hauling
_____F. Illumination
_____G. Landscaping
_____H. Major Structures
_____I. Material Supplies
_____J. Minor Structures/ Misc. Concrete
_____K. Painting
_____L. Rest Areas
_____M. Traffic Control Devices
_____N. Underground/Utility Work
_____O. Earthwork
_____P. Base and Subwork
_____Q. Other_____

I.4. What is (are) your maintenance company's primary line(s) of business?

_____A. Mowing
_____B. Landscape Maintenance
_____C. Litter Pick-up
_____D. Guardrail Repair
_____E. Sign Maintenance
_____F. Tree Trimming/Removal
_____G. Painting Structures
_____H. Pavement Marker Repair
_____I. Pavement Maintenance
_____J. Pothole Repair
_____K. Bridge Repair
_____L. Concrete Repair
_____M. Riprap Repair
_____N. Ditch Cleaning
_____O. Street Sweeping
_____P Other _____

I.5. Which general type of work is the most important to your firm?

_____A. construction _____B. maintenance
_____C. other_____

I.6. Of what type of business organization is your firm?

_____A. regular corporation
_____B. sub-chapter S corporation
_____C. partnership
_____D. sole proprietorship

I.6a. If your answer to I.6 was "A," is your corporation

_____A. privately held _____B.publicly traded

I.7. When was your firm established?

_____A. last year
_____B. 1 - 2 years ago
_____C. 2-5 years ago
_____D. 5 - 10 years ago
_____E. Over 10 years ago

I.8. Is the ownership of your company primarily (51% or more)

_____A. male _____B. female

I.9. Is the ownership of your company 51% or more

_____A. Anglo (non-Hispanic white)
_____B. African American
_____C. Hispanic (non-black
_____D. Hispanic (black)
_____E. Asian/Pacific Islander
_____F. American Indian/Aleut/Inuit
_____G. Persons with disabilities
_____H. Multiracial combination/other (please specify)_ _____

I.10. Do you generally work as a

_____A. general contractor - construction
_____B. prime contractor - maintenance
_____C. subcontractor - construction
_____D. other_____

I.11. In 1992, in which of the following ranges do your revenues fall?

_____A. less than $25,000
_____B. $25,000-$49,999
_____C. $50,000 - $99,999
_____D. $100,000 - $199,999
_____E. $200,000 - $249,999
_____F. $250,000 - $499,999
_____G. $500,000 - $999,999
_____H. $1,000,000 - $2,499,999
_____I. $2,500,000 - $4,999,999
_____J. greater than $5,000,000

I.12. Approximately how many full-time employees did you have in 1992?

_____A. less than 5
_____B. 5 - 9
_____C. 10 - 19
_____D. 20 - 49
_____E. 50 - 99
_____F. 100 - 249
_____G. 250 - 499
_____H. 500 - 999
_____I. 1000 and over

I.13. Please indicate your best estimate of your firm's revenue growth since 1989 (or since your firm's establishment, if more recent):

_____A. less than 0%
_____B. 0% - 5%

_____C. 5% - 10%
_____D. more than 10%

I.14. What is your best estimate of the percentage of your revenue for the past threeyears that came from ***private sector*** (non-governmental) work?

_____A. less than 10%
_____B. 10 - 25%
_____C. 25 - 50%
_____D. 50 - 75%
_____E. 75 - 100%

I.15. What is your best estimate of the percentage of your revenue for the past three years that came from local, state, or federal ***government*** work?

_____A. less than 10%
_____B. 10 - 25%
_____C. 25 - 50%
_____D. 50 - 75%
_____E. 75 - 100%

I.16. What is your single largest source of financing for your construction firm?

_____A. Banks/Private Financial Institutions - without Government assistance
_____B. Banks/Private Financial Institutions - with Government assistance
_____C. Self
_____D. Family/friends
_____E. Other Sources: Please specify_____
_____

I.17. In the past three years, has the number of your firm's full-time employees

_____A. decreased by more than 10%
_____B. decreased by less than 10%
_____C. remained stable
_____D. increased by less than 10%
_____E. Increased by more than 10%

I.18. What is the geographic extent of your market?

_____A. within the city
_____B. within the county
_____C. within several counties.
_____D. across a large region
_____E. statewide or larger

Questions I.19- I.23 are for those firms whose projects normally require bonding.

I.19. In which of the following ranges lies the maximum amount of a performance bond that your company has been able to purchase?

_____A. less than $10,000
_____B. $10,000 - $99,999
_____C. $100,000 - $499,999
_____D. $500,000 - $999,999
_____E. $1,000,000 - $2,499,999
_____F. $2,500,000 - $9,999,999
_____G. $10,000,000 - $49,999,999
_____H. $50,000,000 or over?

I.20. In which of the following ranges lies the maximum amount of a performance bond that your company has sought but was not able to purchase?

_____A. less than $10,000
_____B. $10,000 - $99,999
_____C. $100,000 - $499,999
_____D. $500,000 - $999,999
_____E. $1,000,000 - $2,499,999
_____F. $2,500,000 - $9,999,999
_____G. $10,000,000 - $49,999,999
_____H. $50,000,000 or over
_____I. not applicable

I.21. From whom do you normally obtain your bonding?

_____A. a local company
_____B. a regional company
_____C. a statewide company (or statewide company's regional/local office)
_____D. a national company (or national company's regional/local office)
_____E. other (please specify)_____

I.22. Do you feel that minority-owned, women-owned, and/or disabled-owned construction contractors have greater problems in obtaining bonding in your market area than do *comparable* non-minority businesses?

_____A. yes _____B. no _____C. don't know

I.23. What level of difficulty do you have in obtaining a construction bond?

_____A. very difficult - sellers market, not much choice
_____B. somewhat difficult - choice of firms, not of terms
_____C. not very difficult - choice of firms and terms
_____D. easy - buyers market

I.24. From whom do you normally obtain your financing

_____A. a local financial institution
_____B. a regional financial institution
_____C. a statewide financial institution (or statewide institution's regional/local office)
_____D. a national financial institution (or national institution's regional/local office)
_____E. other (please specify) _____
_____

I.25. How would you rate the difficulty of obtaining adequate financing by construction and/or maintenance contractors in your market area?

_____A. very difficult
_____B. somewhat difficult
_____C. not too difficult
_____D. easy

I.26. Do you feel that minority-owned, women-owned, and/or disabled-owned contractors have greater problems in obtaining financing in this area than do *comparable* non-minority businesses?

_____A. yes _____B. no _____C. don't know

I.27. Have you worked on Texas Department of Transportation (that is, the Highway Department) contracts since 1987?

_____A yes
_____B. no (**If not, please go to Part III, Page 7**)

Part II: Contracting with the Texas Department of Transportation.

Please answer the following questions if you have performed work for TxDOT or TxDOT contractors.

II.1 Have you generally been a prime contractor or a subcontractor?

_____A. prime contractor
_____B. subcontractor
_____C. other_____

II.2. Please indicate how each of the following generally affects your ability to procure contracts with the TxDOT (circle the best answer for each category):

	No experience/ not applicable	Helps my prospects	No effect	Hurts my prospects	Eliminate my prospe
previous dealings with TxDOT	A	B	C	D	E
bonding requirements	A	B	C	D	E
financing	A	B	C	D	E
workers' compensation	A	B	C	D	E
other insurance requirements	A	B	C	D	E
large project size	A	B	C	D	E
cost of materials	A	B	C	D	E
cost of equipment	A	B	C	D	E
cost of skilled labor	A	B	C	D	E
obtaining quotes from suppliers	A	B	C	D	E
DBE program requirements	A	B	C	D	E
certification as DBE	A	B	C	D	E
ethnicity/gender/race of owner	A	B	C	D	E
membership in					
trade organization	A	B	C	D	E
professional organization	A	B	C	D	E
cost of completing proposal	A	B	C	D	E
prequalification requirements	A	B	C	D	E
monthly payment schedule from					
TxDOT	A	B	C	D	E
TxDOT prime contractors	A	B	C	D	E
retainage of monthly payments	A	B	C	D	E
length of notification for:					
bid deadlines	A	B	C	D	E
bonding requirements	A	B	C	D	E
insurance requirements	A	B	C	D	E

II.3 During the performance of your contracts, how often do you communicate with TxDOT inspectors?

_____A. frequently
_____B. occasionally
_____C. seldom
_____D. never

II.4. During the performance of your contracts, how often do you communicate with TxDOT prime contractors?

_____A. frequently
_____B. occasionally
_____C. seldom
_____D. never

For questions II.5 - II.6 feel free to attach additional sheets if necessary.

II.5. Of all aspects of the bidding and contracting process, whether or not identified in question II.2 above, which one(s) would you most like to change(if you could), and why? Please comment if you feel access to the bidding/contracting process could be improved.

II.6 Do you have any further comments regarding your working relationship with either TxDOT, TxDOT contractors, or both? Are there any differences in the relationship between DBEs and TxDOT compared to the relationship between prime contractors and TxDOT?

Part III: Educational /Training Background

If your firm is a publicly traded corporation, please skip this section and proceed to Part IV, Page 9.

III.1. What is your highest level of schooling?

_____A. less than 12
_____B. high school graduate
_____C. vocational training (non - HS)
_____D. college graduate
_____E graduate level

III.2. Were you trained as

_____A. an engineer **(go to III.3)**
_____B a skilled craftsperson **(go to III.6)**
_____C. other _____? **(go to III.9)**.

III.3. Do you have university training and/or a degree?

_____A. yes _____B. no

III.4. If so, from which institution?

_____A. Lamar University
_____B. Prairie View A&M University
_____C. Texas A&I University
_____D. Texas A&M University
_____E. Texas Tech University
_____F. University of Houston
_____G. University. of Texas at Arlington
_____H. University of Texas at Austin
_____I. University of Texas at El Paso
_____J. Univ. of Texas at San Antonio

_____K. Other Texas university_____
_____L. Out of state university _____

III.5. Did you take courses in business administration?

_____A. yes _____B. no **(go to III.10)**

III.6. What do you consider to be your trade(s)?

_____A. electrician
_____B. pipefitter/plumber
_____C. painter
_____D. ironworkers
_____E. carpenter
_____F. operating engineer (operator)
_____G. operating engineer (mechanic)
_____H. cement mason
_____I. other (please specify) _____

III.7. Did you receive any formal training?

_____A. yes - as an apprentice
_____B. yes - through on-the-job-training for a specific project or task.
_____C. no

_____D. other _____

III.8. If so, from whom did you receive this training?

_____A. contractors' association
_____B. union
_____C. private company
_____D. other craftsperson
_____E. vocational school
_____F. other_____ **(go to III.10)**

III.9. If you are neither an engineer nor a skilled craftsperson, do you have any formal training in business, whether at the college/university level or from "business schools?"

_____A. college _____B. other

III.10. Did you work for another construction firm before you became a business owner?

_____A. yes _____B. no

III.11. If so, how long did you work for other construction companies before starting your own firm?

_____A. less than a year _____D. 10-20 years
_____B. 1-5 years _____C. 5-10 years
_____E. more than 20 years

III.11a. Before leaving such a firm to start your own business, in what capacity did you last perform (i.e. job classification)?_____
_____

III.12. Did you work as an employee for the Texas Department of Transportation (i.e. the Highway Department) before you became a business owner?

_____A. yes _____B. no

III.13. If so, how long did you work for the TxDOT before starting your own firm?

_____A. less than a year _____D. 10-20 years
_____B. 1-5 years _____E. more than 20 years
_____C. 5-10 years

III.14. In which of the following fields would you like to receive additional technical assistance? (Check all that apply)

_____A. Bonding _____E. Management
_____B. Insurance _____F. Workers' Compensation
_____C. Financing _____G. Bid estimation
_____D. Marketing _____H. Contract Administration
_____I. Obtaining information on contracting opportunities
_____J. Negotiating with the State of Texas and/or TxDOT

_____K Other_____
_____L. None of the above

Part IV: Barriers to Participation

IV.1. Have you ever attended any seminars, training sessions, or workshops that dealt with race and/or gender relations?

_____A. yes _____B. no

IV.2. Do you feel that some training or special preparation in race and/or gender relations would be helpful in your business relations?

_____A. yes _____B. no _____C. don't know/care

IV.3. Do you believe there are significant barriers within the TxDOT that make it more difficult for contracting businesses owned by minority group members, women, and/or persons with disabilities to obtain construction work from TxDOT?

_____A. yes _____B. no _____C. don't know/care

IV.3a. If yes, please explain. _____
_____
_____

IV.4. Have you ever had reason to believe that manufacturers or wholesalers were selling the same product to women-owned, minority-owned, or disabled-owned contractors at prices higher than those charged to *comparable* male white contractors in your market area?

_____A. yes _____B. no

IV.4a. If yes, please explain. _____
_____
_____

IV.5. Have you ever encountered a situation where you felt that the specifications on a contract were deliberately tailored by a state, or local government agency so that only one or two contractors could qualify for the work?

_____A. yes _____B. no

IV.5a. If yes, please explain. _____
_____
_____

IV.6. ***If you have not worked on TxDOT contracts***, whether because you decided not to bid or because your bids have not been successful, please identify the most important barrier to your participation in TxDOT contracting.

IV.7. Do you have any other comments concerning this survey? Feel free to discuss any other barriers, discriminatory or not.

IV.7a. Please indicate whether you would prefer a telephone follow-up from the research team, in regards to any aspect of the questionnaire:

_____A. yes _____B. no

Thank you for your participation.

PLEASE RETURN THE SURVEY TO:

University of Texas at Austin
DBE Capacity Study P-7980
PO Box 7459 -50500
Austin, Texas 78713

Telephone: (512) 471-8915
Fax: (512) 471-1063

TEXAS DEPARTMENT OF TRANSPORTATION
DBE CONTRACTORS QUESTIONNAIRE

Part I: Business Characteristics

I.1. What is the name of your business? _____

I.2. Are you the owner/manager of your firm?

_____A. yes _____B. no

I.2a. If not, please specify the capacity in which you serve your firm _____

Please answer either question I.3 if you are primarily a *construction* contractor, or question I.4 if you are primarily a *maintenance* contractor. If you compete in areas of work in both categories, answer both I.3 and I.4, but please indicate which category is more important to your firm in question I.5.

I.3. What is (are) your construction company's primary line(s) of business?

_____A. Asphalt
_____B. Concrete Paving
_____C. Engineering
_____D. Fencing
_____E. Hauling
_____F. Illumination
_____G. Landscaping
_____H. Major Structures
_____Q. Truck Owner Operator
_____I. Material Supplies
_____J. Minor Structures/ Misc. Concrete
_____K. Painting
_____L. Rest Areas
_____M. Traffic Control Devices
_____N. Underground/Utility Work
_____O. Earthwork
_____P. Base and Subwork
_____R. Other_____

I.4. What is (are) your maintenance company's primary line(s) of business?

_____A. Mowing
_____B. Landscape Maintenance
_____C. Litter Pick-up
_____D. Guardrail Repair
_____E. Sign Maintenance
_____F. Tree Trimming/Removal
_____G. Painting Structures
_____H. Pavement Marker Repair
_____I. Pavement Maintenance
_____J. Pothole Repair
_____K. Bridge Repair
_____L. Concrete Repair
_____M. Riprap Repair
_____N. Ditch Cleaning
_____O. Street Sweeping
_____P. Other _____

I.5. Which general type of work is the most important to your firm?

_____A. construction _____B. maintenance
_____C. other _____

I.6. Of what type of business organization is your firm?

_____A. regular corporation
_____B. sub-chapter S corporation
_____C. partnership
_____D. sole proprietorship

I.6a. If your answer to I.6 was "A," is your corporation

_____A. privately held
_____B. publicly traded

I.7. When was your firm established?

_____A. last year
_____B. 1 - 2 years ago
_____C. 2-5 years ago
_____D. 5 - 10 years ago
_____E. Over 10 years ago

I.8. Is the ownership of your company primarily (51% or more)

_____A. male
_____B. female

I.9. Is the ownership of your company 51% or more

_____A. Anglo (non-Hispanic white)
_____B. African American (black)
_____C. Hispanic (non-black)
_____D. Hispanic (black)
_____E. Asian/Pacific Islander
_____F. American Indian/Aleut/Inuit
_____G. Persons with disabilities
_____H. Multiracial combination/other (please specify) _____

_____

I.10. Do you generally work as a

_____A. general contractor - construction
_____B. prime contractor - maintenance
_____C. subcontractor - construction
_____D. other_____

I.11. In 1992, in which of the following ranges did your revenues fall?

_____A. less than $25,000
_____B. $25,000-$49,999
_____C. $50,000 - $99,999
_____D. $100,000 - $199,999
_____E. $200,000 - $249,999
_____F. $250,000 - $499,999
_____G. $500,000 - $999,999
_____H. $1,000,000 - $2,499,999
_____I. $2,500,000 - $4,999,999
_____J. greater than $5,000,000

I.12. Approximately how many full-time employees did you have in 1992?

_____A. less than 5
_____B. 5 - 9
_____C. 10 - 19
_____D. 20 - 49
_____E. 50 - 99
_____F. 100 - 249
_____G. 250 - 499
_____H. 500 - 999
_____I. 1000 and over

I.13. Please indicate your best estimate of your firm's revenue growth since 1989 (or since your firm's establishment, if more recent).

_____A. less than 0%
_____B. 0% - 5%
_____C. 5% - 10%

_____D. more than 10%

I.14. What is your best estimate of the percentage of your revenue for the past three years that came from ***private sector*** (non-governmental) work?

_____A. less than 10%
_____B. 10 - 25%
_____C. 25 - 50%
_____D. 50 - 75%
_____E. 75 - 100%

I.15. What is your best estimate of the percentage of your revenue for the past three years that came from local, state, or federal ***government*** work?

_____A. less than 10%
_____B. 10 - 25%
_____C. 25 - 50%
_____D. 50 - 75%
_____E. 75 - 100%

I.16. What is your single largest source of financing for your construction or maintenance firm?

_____A. Banks/Private Financial Institutions - without Government assistance
_____B. Banks/Private Financial Institutions - with Government assistance
_____C. Self
_____D. Family/friends
_____E. Other Sources: Please specify_____

I.17. In the past three years, has the number of your firm's full-time employees

_____A. decreased by more than 10%
_____B. decreased by less than 10%
_____C. remained stable
_____D. increased by less than 10%
_____E. increased by more than 10%

I.18. What is the geographic extent of your market?

_____A. within the city
_____B. within the county
_____C. within several counties.
_____D. across a large region
_____E. statewide or larger

Questions I.19- I.23 are for those firms whose projects normally require bonding.

I.19. In which of the following ranges lies the maximum amount of a performance bond that your company has been able to purchase?

_____A. less than $10,000
_____B. $10,000 - $99,999
_____C. $100,000 - $499,999
_____D. $500,000 - $999,999
_____E. $1,000,000 - $2,499,999
_____F. $2,500,000 - $9,999,999
_____G. $10,000,000 - $49,999,999
_____H. $50,000,000 or over?

I.20. In which of the following ranges lies the maximum amount of a performance bond that your company has sought but was not able to purchase?

_____A. less than $10,000
_____B. $10,000 - $99,999
_____C. $100,000 - $499,999
_____D. $500,000 - $999,999
_____E. $1,000,000 - $2,499,999
_____F. $2,500,000 - $9,999,999
_____G. $10,000,000 - $49,999,999
_____H. $50,000,000 or over?

I.21. From whom do you normally obtain your bonding?

_____A. a local company
_____B. a regional company
_____C. a statewide company (or statewide company's regional/local office)
_____D. a national company (or national company's regional/local office)
_____E. other (please specify)_____

I.22. Do you feel that minority-owned, women-owned, and/or disabled-owned construction contractors have greater problems in obtaining bonding in your market area than do *comparable* non-minority businesses?

_____A. yes _____B. no _____C. don't know

I.23. What level of difficulty do you have in obtaining a construction bond?

_____A. very difficult - sellers market, not much choice
_____B. somewhat difficult - choice of firms, not of terms
_____C. not very difficult - choice of firms and terms
_____D. easy - buyers market

I.24. From whom do you normally obtain your financing

_____A. a local financial institution
_____B. a regional financial institution
_____C. a statewide financial institution (or statewide institution's regional/local office)
_____D. a national financial institution (or national institution's regional/local office)
_____E. other (please specify) _____

_____

I.25. How would you rate the difficulty of obtaining adequate financing by construction and/or maintenance contractors in your market area?

_____A. very difficult _____C. not too difficult
_____B. somewhat difficult _____D. easy

I.26. Do you feel that minority-owned, women-owned, and/or disabled-owned contractors have greater problems in obtaining financing in this area than do *comparable* non-minority businesses?

_____A. yes _____B. no _____C. don't know

I.27. Have you worked on Texas Department of Transportation (that is, the Highway Department) contracts since 1987?

_____A. yes
_____B. no **(If not, please go to Part III, Page 7).**

Part II: Contracting with the Texas Department of Transportation.

Please answer the following questions if you have performed work for TxDOT or TxDOT contractors.

II.1. Have you generally been a prime contractor or a subcontractor?

_____A. prime contractor
_____B. subcontractor
_____C. other_____

II.2 During the performance of your contracts, how often do you communicate with TxDOT inspectors?

_____A. frequently
_____B. occasionally
_____C. seldom
_____D. never

II.3. During the performance of your contracts, how often do you communicate with TxDOT prime contractors?

_____A. frequently
_____B. occasionally
_____C. seldom
_____D. never

II.4. Please indicate how each of the following generally affects your ability to procure contracts with the TxDOT (circle the best answer for each category):

	No experience/ not applicable	Helps my prospects	No effect	Hurts my prospects	Eliminates my prospects
previous dealings with TxDOT	A	B	C	D	E
bonding requirements	A	B	C	D	E
financing	A	B	C	D	E
workers' compensation	A	B	C	D	E
other insurance requirements	A	B	C	D	E
large project size	A	B	C	D	E
cost of materials	A	B	C	D	E
cost of equipment	A	B	C	D	E
cost of skilled labor	A	B	C	D	E
obtaining quotes from suppliers	A	B	C	D	E
DBE program requirements	A	B	C	D	E
certification as DBE	A	B	C	D	E
ethnicity/gender/race/ disability of owner	A	B	C	D	E
membership in					
trade organization	A	B	C	D	E
professional organization	A	B	C	D	E
cost of completing proposal	A	B	C	D	E
prequalification requirements	A	B	C	D	E
monthly payment schedule from					
TxDOT	A	B	C	D	E
TxDOT prime contractors	A	B	C	D	E
retainage of monthly payments	A	B	C	D	E
length of notification for:					
bid deadlines	A	B	C	D	E
bonding requirements	A	B	C	D	E
insurance requirements	A	B	C	D	E

For questions II.5 - II.6 feel free to attach additional sheets if necessary.

II.5. Of all aspects of the bidding and contracting process, whether identified in question II.2 above or not, which one(s) would you most like to change(if you could), and why? Please comment if you feel access to the bidding/contracting process could be improved.

II.6. Do you have any further comments regarding your working relationship with either TxDOT, TxDOT contractors, or both? Are there any differences in the relationship between DBEs and TxDOT compared to the relationship between prime contractors and TxDOT?

Part III: Educational /Training Background

If your firm is a publicly traded corporation, please skip this section and proceed to Part IV, Page 9.

III.1. What is your highest level of schooling?

_____A. less than 12
_____B. high school graduate
_____C. vocational training (non - HS)
_____D. college graduate
_____E graduate level

III.2. Were you trained as

_____A. an engineer **(go to III.3)**
_____B a skilled craftsperson **(go to III.6)**
_____C. other _____? **(go to III.9)**.

III.3. Do you have university training and/or a college degree?

_____A. yes _____B. no

III.4. If so, from which institution?

_____A. Lamar University
_____B. Prairie View A&M University
_____C. Texas A&I University
_____D. Texas A&M University
_____E. Texas Tech University
_____F. University of Houston
_____G. University. of Texas at Arlington
_____H. University of Texas at Austin
_____I University of Texas at El Paso
_____J. Univ. of Texas at San Antonio
_____K. Other Texas university_____
_____L. Out of state university _____

III.5. Did you take courses in business administration?

_____A. yes _____B. no **(Go to III.10)**

III.6. What do you consider to be your trade(s)?

_____A. electrician
_____B. pipefitter/plumber
_____C. painter
_____D. ironworkers
_____E. carpenter
_____F. operating engineer (operator)
_____G. operating engineer (mechanic)
_____H. cement mason
_____I. other (please specify) _____

III.7. Did you receive any formal training?

_____A. yes - as an apprentice
_____B. yes - through on-the-job-training for a specific project or task.
_____C. no
_____D. other _____

III.8. If so, from whom did you receive this training?

_____A. contractors' association
_____B. union

_____C. private company
_____D. other craftsperson
_____E. vocational school
_____F. other_____ **(Go to III.10)**

III.9. If you are neither an engineer nor a skilled craftsperson, do you have any formal training in business, whether at the college/university level or from "business schools?"

_____A. college _____B. other _____C. no

III.10. Did you work for another construction firm before you became a business owner?

_____A. yes _____B. no

III.11. If so, how long did you work for other construction companies before starting your own firm?

_____A. less than a year
_____B. 1-5 years
_____E. more than 20 years
_____D. 10-20 years
_____C. 5-10 years

III.11a. Before leaving such a firm to start your own business, in what capacity did you last perform (i.e. job classification)? _____

_____

III.12. Did you work as an employee for the Texas Department of Transportation (i.e. the Highway Department) before you became a business owner?

_____A. yes _____B. no

III.13. If so, how long did you work for the TxDOT before starting your own firm?

_____A. less than a year
_____B. 1-5 years
_____C. 5-10 years
_____D. 10-20 years
_____E. more than 20 years

III.14. In which of the following fields would you like to receive additional technical assistance? (Check all that apply)

_____A. Bonding
_____B. Insurance
_____C. Financing
_____D. Marketing
_____E. Management
_____F. Workers' Compensation
_____G. Bid estimation
_____H. Contract Administration
_____I. Obtaining information on contracting opportunities
_____J. Negotiating with the State of Texas and/or TxDOT
_____K Other_____
_____L. None of the above

III.15. Have you ever sought assistance from the Texas Engineering Extension Service's DBE supportive services program?

_____A. yes _____B. no

III.16. If so, how would you rate the effectivenss of the Supportive Services Program in improving your access to the TxDOT bidding process?

_____A. very effective
_____B. somewhat effective
_____C. ineffective

III.16a. What more, if anything, could the Supportive Services Program do to promote DBE participation in the TxDOT bidding/contracting process?

Part IV: Barriers to Participation

IV.1. Have you ever attended any seminars, training sessions, or workshops that dealt with race and/or gender relations?

_____A. yes _____B. no

IV.2. Do you feel that some training or special preparation in race and/or gender relations would be helpful in your business relations?

_____A. yes _____B. no _____C. don't know/care

IV.3. Do you believe there are significant barriers within the TxDOT that make it more difficult for contracting businesses owned by minority group members, women, and/or persons with disabilities to obtain construction or maintenance work from TxDOT?

_____A. yes _____B. no _____C. don't know/care

IV.3a. If yes, please explain. _____

_____

_____

IV.4. Have you ever had reason to believe that manufacturers or wholesalers were selling the same product to women-owned, minority-owned, or disabled-owned contractors at prices higher than those charged to *comparable* male white contractors in your market area?

_____A. yes _____B. no

IV.4a. If yes, please explain. _____

_____

_____

IV.5. Have you ever encountered a situation where you felt that the specifications on a contract were deliberately tailored by a state, or local government agency so that only one or two contractors could qualify for the work?

_____A. yes _____B. no

IV.5a. If yes, please explain. _____

_____

_____

IV.6. Please indicate the frequency with which you feel you have encountered, ***due to your race, ethnicity, gender, or disability,*** the following types of barriers in several phases of the contracting process:

	N/A or Never	*Seldom*	*On Occasion*	*Frequently*	*Almost always*
a. Financing/Bonding/Access					
Refusal of consideration					
for bank loans	A	B	C	D	E
for bonding	A	B	C	D	E
Excessive collateral requirements	A	B	C	D	E
requests for co-signature	A	B	C	D	E
disbelief of asset ownership	A	B	C	D	E
Change of loan application status					
after face to face meeting	A	B	C	D	E
higher insurance rates	A	B	C	D	E
higher bonding rates	A	B	C	D	E
personal harassment	A	B	C	D	E
higher price quotes from suppliers	A	B	C	D	E
insistence on cash payment	A	B	C	D	E
refusal of admission to					
professional organization	A	B	C	D	E
trade association	A	B	C	D	E
b. Government (barriers imposed by TxDOT employees)					
late/no notice of bid opportunities	A	B	C	D	E
rejection of valid bids	A	B	C	D	E
refusal to accept bids	A	B	C	D	E
personal harassment	A	B	C	D	E
misleading information					
regarding certification	A	B	C	D	E
regarding bid requirements	A	B	C	D	E
tougher than normal inspections	A	B	C	D	E
changing bid criteria	A	B	C	D	E
withdrawal of award after					
after face to face meeting	A	B	C	D	E

Continued on next page

II.6 Cont'd

c. Government Contracting/Subcontracting (barriers imposed by other contractors)

	N/A or Never	*Seldom*	*On Occasion*	*Frequently*	*Almost always*
failure to send notices of subcontracting opportunities	A	B	C	D	E
late /misleading notices	A	B	C	D	E
arbitrary termination of existing contract	A	B	C	D	E
rejection of low bids	A	B	C	D	E
bid shopping/peddling					
to majority contractors	A	B	C	D	E
after contract signed	A	B	C	D	E
request for use of firm's name to fulfill DBE goal, but no actual work	A	B	C	D	E
withdrawal of award after					
after face to face meeting	A	B	C	D	E
personal harassment	A	B	C	D	E
double standards of performance	A	B	C	D	E
delayed or partial payments	A	B	C	D	E
unfair evaluation, leading towards removal from job	A	B	C	D	E

IV.7. ***If you have not worked on TxDOT contracts***, whether because you decided not to bid or because your bids have not been successful, please identify the most important barrier to your participation in TxDOT contracting.

IV.8. Do you have any other comments concerning this survey? Feel free to discuss any other barriers, discriminatory or not.

IV.8a. Please indicate whether you would prefer a telephone follow-up from the research team, in regards to any aspect of the questionnaire:

_____A. yes _____B. no

Thank you for your participation.

Please return the survey to:

University of Texas at Austin
DBE Capacity Study P-7980
PO Box 7459 - 50500
Austin, Texas 78713

Telephone: (512) 471-8915
Fax: (512) 471-1063

TEXAS DEPARTMENT OF TRANSPORTATION
DBE PROFESSIONAL SERVICES QUESTIONNAIRE

Part I: Business Characteristics

I.1. What is the name of your business? _____

I.2. Are you the owner/manager of your firm?

_____A. yes _____B. no

I.2a. If not, please specify the capacity in which you serve your firm _____
_____

I.3. Please identify the primary type(s) of goods and/or services that you sell (check all that apply):

_____A. Architectural Services
_____B. Hand Tools
_____C. Petroleum Products
_____D. Office Supplies
_____E. Janitorial Services
_____F. Janitorial Supplies
_____G. Security Services
_____H. Engineering Services
_____I. Data Processing Services
_____J. Automotive Parts and Supplies
_____K. Equipment Parts and Supplies
_____L. Roadway and Building Materials
_____M. Building Maintenance and Repair
_____N. Equipment Maintenance and Repair
_____O. Material Testing and Cailbration Services
_____P. Communication and Media Related Services
_____Q. Other _____

I.4. Of what type of business organization is your firm?

_____A. regular corporation
_____B. sub-chapter S corporation
_____C. partnership
_____D. sole proprietorship

I.4a. If your answer to I.4 was "A," is your corporation

_____A. privately held
_____B. publicly traded

I.5. When was your firm, as presently organized, established?

_____A. last year
_____B. 1 - 2 years ago
_____C. 2-5 years ago
_____D. 5 - 10 years ago
_____E. Over 10 years ago

I.6. Is the ownership of your company primarily (51% or more)

_____A. male _____B. female

I.7. Is the ownership of your company 51% or more

_____A. Anglo (non-Hispanic white)
_____B. African American (black)
_____C. Hispanic (non-black)
_____D. Hispanic (black)
_____E. Asian/Pacific Islander
_____F. American Indian/Aleut/Inuit

_____G. Persons with disabilities
_____H. Multiracial Combination/other (please specify) _____

I.8. What is the primary line of business engaged in by your customers?

_____A. building construction, repair, or renovation;
_____B. highway, street, or bridge construction;
_____C. specialty or special trade construction
_____D. highway maintenance/repair
_____E. other _____

I.9. Would you say that your customers are usually working as

_____A. subcontractors
_____B. prime contractors
_____C. state purchasing agents
_____D. don't know/other _____

I.10. In 1992, in which of the following ranges do your revenues fall?

_____A. less than $25,000
_____B. $25,000-$49,999
_____C. $50,000 - $99,999
_____D. $100,000 - $199,999
_____E. $200,000 - $249,999
_____F. $250,000 - $499,999
_____G. $500,000 - $999,999
_____H. $1,000,000 - $2,499,999
_____I. $2,500,000 - $4,999,999
_____J. greater than $5,000,000

I.11. Approximately how many full-time employees did you have in 1992?

_____A. less than 5
_____B. 5 - 9
_____C. 10 - 19
_____D. 20 - 49
_____E. 50 - 99
_____F. 100 - 249
_____G. 250 - 499
_____H. 500 - 999
_____I. 1000 and over

I.12. Please indicate your best estimate of your firm's revenue growth since 1989 (or since your firm's establishment, if more recent).

_____A. less than 0%
_____B. 0% - 5%
_____C. 5% - 10%
_____D. 10 - 25%
_____E. more than 25%.

I.13. What is your best estimate of the percentage of your revenue for the past three years that came from sales to the ***private sector*** (non-government)?

_____A. less than 10%
_____B. 10 - 25%
_____C. 25 - 50%
_____D. 50 - 75%
_____E. 75 - 100%

I.14. What is your best estimate of the percentage of your revenue for the past three years that came from sales to local, state, or federal ***government agencies***?

_____A. less than 10%
_____B. 10 - 25%
_____C. 25 - 50%
_____D. 50 - 75%
_____E. 75 - 100%

I.15. What is your single largest source of financing for your firm?

_____A. Banks/Private Financial Institutions - without Government assistance
_____B. Banks/Private Financial Institutions - with Government assistance
_____C. Self
_____D. Family/friends
_____E. Other Sources: Please specify _____

I.16. In the past three years, has the number of your firm's full-time employees

_____A. shrunk by more than 10%
_____B. shrunk by less than 10%
_____C. remained stable
_____D. increased by less than 10%
_____E. increased by more than 10%

I.17. What is the geographic extent of your market?

_____A. within the city
_____B. within the county
_____C. within several counties.
_____D. across a large region
_____E. statewide or larger

I.18. How would you rank the size/capacity of your competitors relative to your own company ?

_____A. generally smaller
_____B. essentially similar
_____C. generally larger
_____D. varies with type of product

I.18a. If your answer is "D", how? _____

I.19. In recent years, has the number of firms you compete with for sales/service provision

_____A. increased _____B. remained stable _____C. decreased

I.20. In recent years, has the demand for your product or service

_____A. increased _____B. remained stable _____C. decreased

I.21. If the demand facing your firm has changed, has this been due to

_____A. changes in the number of buyers/clients
_____B. changes in the size of orders from previously existing customers
_____C. both
_____D. not applicable (no change)

I.22. Which of the following kinds of sales (or service provision) would you say were the most profitable in your market (regardless of whether or not you vend in these areas);

_____A. sales to private buyers,
_____B. sales to local public agencies (municipal or county),
_____C. sales to state agencies
_____D. sales to others (please specify)? _____

I.23. From whom do you normally obtain your financing

_____A. a local financial institution
_____B. a regional financial institution
_____C. a statewide financial institution (or statewide institution's regional/local office)
_____D. a national financial institution (or national institution's regional/local office)
_____E. other (please specify) _____

I.24. How would you rate the difficulty of obtaining adequate financing by vendors in this area?

_____A. very difficult - sellers market, not much choice
_____B. somewhat difficult - choice of firms, not of terms
_____C. not very difficult - choice of firms and terms
_____D. easy - buyers market

I.25. Do you that minority-owned, women-owned, and/or disabled-owned vendors or professionals have greater problems in obtaining financing in this area than do *comparable* non-minority businesses?

_____A. yes _____B. no _____C. don't know

I.26. Have you either been solicited by or made sales to the TxDOT (that is, the Highway Department) or TxDOT contractors since 1987?

_____A. yes _____B. no **(if not, please go to Part III, Page 7).**

Part Two: Contracting with the Texas Department of Transportation.

Please answer the following questions if you have been solicited by and/or made sales to the TxDOT or TxDOT contractors.

II.1. How often have you been solicited by TxDOT since 1987?

_____A. quite often, or on a continuing basis
_____B. often, but intermittently
_____C. not very often, or only sometimes

II.2. If you have been solicited, how often has this led to a sale?

_____A. quite often, or almost always
_____B. often, but intermittently
_____C. not very often, or only sometimes
_____D. never

II.3. Would you say that for your company sales to TxDOT have been

_____A. a nonexistent source of revenue
_____B. a negligible source of revenue
_____C. an intermittent source of revenue
_____D. a steady source of revenue
_____E. an expanding source of revenue?

II.4. What percentage of your current sales are to TxDOT?

_____A. less than 10%
_____B. 10% - 25%
_____C. 26% - 50%
_____D. 51% - 75%
_____E. over 75%

II.5. Is your firm certified as a Disadvantaged Business Enterprise (DBE) or Historically Underutilized Business (HUB) with the General Services Commission (GSC) or the Texas Department of Commerce?

_____A. yes _____B. no

II.6. Are you on a publicized list or a list circulated by TxDOT of minority-owned or woman-owned businesses?

_____A. yes _____B. no _____C. don't know

II.7. If so, how does being on this list compare with other sources of bidding opportunities for your company?

_____A. helpful _____B. unhelpful _____C. no real difference

II.8. Of the minority/women-owned firms in your area, would you say that

_____A. there are many who have the potential to become certified as DBE/HUBs, but who have not become certified
_____B. most of the firms with the qualifications to become certified have done so?
_____C. don't know

II.9. Please indicate how each of the following generally affects your ability to procure contracts with the TxDOT or TxDOT contractors ***(circle the best answer for each category)***:

	No experience/ not applicable	Helps my prospects	No effect	Hurts my prospects	Eliminates my prospects
previous dealings with TxDOT		A	B	C	D	E
financing		A	B	C	D	E
workers' compensation		A	B	C	D	E
insurance requirements		A	B	C	D	E
large project size		A	B	C	D	E
cost of materials		A	B	C	D	E
obtaining quotes from suppliers		A	B	C	D	E
TxDOT requirements to solicit bids from certified or certifiable DBEs		A	B	C	D	E
DBE program requirements		A	B	C	D	E
certification as DBE/HUB		A	B	C	D	E
ethnicity/gender/race/ disability of owner		A	B	C	D	E
membership in:						
professional organizations		A	B	C	D	E
trade associations		A	B	C	D	E
monthly payment schedule from						
TxDOT		A	B	C	D	E
TxDOT prime contractors		A	B	C	D	E
retainage of monthly payments		A	B	C	D	E
informal contacts w/TxDOT personnel		A	B	C	D	E
length of notification for:						
bid deadlines		A	B	C	D	E
insurance requirements		A	B	C	D	E

For questions II.10- II.11 feel free to attach additional sheets if necessary.

II.10. Of all aspects of the bidding, contracting, and/or procurement process, whether or not identified above in question II.9., which one(s) would you most like to change (if you could), and why? Please comment if you feel access to the TxDOT procurement process could be improved.

II.11. Do you have any further comments regarding your working relationship with either TxDOT, TxDOT contractors, or both?

Part III: Educational/Training Background

If your firm is a publicly traded corporation, please skip this section and proceed to Part IV, Page 8.

III.1. What is your educational level?

_____A. less than 12 years **(go to question III.5)**
_____B. high school graduate **(go to question III.5)**
_____C. vocational training (non - HS)
_____D. college graduate
_____E. graduate level

III.2. If you answered C, D, or E in the question above, what kind of certification or degree did you receive? _____

III.3. If so, from which institution?

_____A. Lamar University
_____B. Prairie View A&M University
_____C. Texas A&I University
_____D. Texas A&M University
_____E. Texas Tech University
_____F. University of Houston
_____G. University. of Texas at Arlington
_____H. University of Texas at Austin
_____I. University of Texas at El Paso
_____J. Univ. of Texas at San Antonio

_____K. Other Texas university_____
_____L. Out of state university _____

III.4. If your certification or degree was not for business training, did it include any course or courses in business administration? (If it was for business training check 'see above'.)

_____A. yes _____B. no _____C. See above **(Go to III.7)**

III.5. Did you receive any formal training?

_____A. yes - as an apprentice
_____B. yes - through on-the-job-training for a specific project or task.
_____C. no
_____D. other _____

III.6. If so, from whom did you receive this training?

_____A. contractors' association
_____B. union
_____C. private company
_____D. other craftsperson
_____E. vocational school
_____F. other_____

III.7. Did you work for another vendor before you became a business owner?
_____A. yes _____B. no

III.8. If so, how long did you work other companies before starting your own firm?
_____A. less than a year _____D. 10-20 years

_____B. 1-5 years _____C. 5-10 years
_____E. more than 20 years

III.8a. Before leaving such a firm to start your own business, in what capacity did you last perform (i.e. job classification)?_____
_____

III.9. Did you work as an employee for the Texas Department of Transportation (i.e. the Highway Department) before you became a business owner?

_____A. yes _____B. no

III.10. If so, how long did you work for the TxDOT before starting your own firm?

_____A. less than a year _____D. 10-20 years
_____B. 1-5 years _____E. more than 20 years
_____C. 5-10 years

II.11. In which of the following fields would you like to receive additional technical assistance? (Check all that apply)

_____A. Bonding _____E. Management
_____B. Insurance _____F. Workers' Compensation
_____C. Financing _____G. Bid estimation
_____D. Marketing _____H. Contract Administration
_____I. Obtaining information on contracting opportunities
_____J. Negotiating with the State of Texas and/or TxDOT
_____K. Other_____
_____L. None of the above

III.12. Have you ever sought assistance from the Texas Engineering Extension Service's DBE supportive services program?

_____A. yes _____B. no

III.13. If so, how would you rate the effectivenss of the Supportive Services Program in improving your access to the TxDOT bidding/procurement process?

_____A. very effective
_____B. somewhat effective
_____C. ineffective

III.13a. What more, if anything, could the Supportive Services Program do to promote DBE participation in the TxDOT bidding/procurement process?

Part IV: Barriers to Participation

IV.1. Have you ever attended any seminars, training sessions, or workshops that dealt with race and/or gender relations?

_____A. yes _____B. no

IV.2. Do you feel that some training or special preparation in race and/or gender relations would be helpful in your business relations?

_____A. yes _____B. no

IV.3. Do you believe there are significant barriers within the TxDOT that make it more difficult for vending businesses owned by minority group members, women, and/or persons with disabilities to sell goods and services to TxDOT?

_____A. yes _____B. no _____C. Don't know/care

IV.3a. If yes, please explain_____
_____
_____

IV.4. Have you ever had reason to believe that manufacturers or wholesalers were selling the same product to women-owned, minority-owned, or disabled-owned firms at prices higher than those charged to *comparable* male white businesses in your market area?

_____A. yes ___B. no

IV.4a. If yes, please explain. _____
_____
_____

IV.5. Have you ever encountered a situation where you felt that the specifications on a contract were deliberately tailored by a state, or local government agency so that only one or two vendors could qualify for the work?

_____A. yes _____B. no

IV.5a. If yes, please explain_____
_____
_____

IV.5. Please indicate the frequency with which you feel you have encountered, ***due to your race, ethnicity, gender, or disability,*** the following types of barriers in several phases of the contracting or procurement process:

	N/A or Never	*Seldom*	*On Occasion*	*Frequently*	*Almost always*
a. Financing/Insurance/Access					
refusal of consideration					
for bank loans	A	B	C	D	E
for insurance policies	A	B	C	D	E
excessive collateral requirements	A	B	C	D	E
requests for co-signature	A	B	C	D	E
disbelief of asset ownership	A	B	C	D	E
change of loan application status after face to face meeting	A	B	C	D	E
higher insurance rates	A	B	C	D	E
personal harassment	A	B	C	D	E
higher price quotes from suppliers	A	B	C	D	E
insistence on cash payment	A	B	C	D	E
inordinate time required to establish credit	A	B	C	D	E
refusal of manufacturer to do business	A	B	C	D	E
withdrawal of distribution agreement after ethnicity discovered	A	B	C	D	E
inability to bid on government contracts due to manufacturer bias	A	B	C	D	E
refusal of admission to					
professional organization	A	B	C	D	E
trade association	A	B	C	D	E
b. Government (barriers imposed by TxDOT employees)					
late/no notice of bid opportunities	A	B	C	D	E
rejection of valid bids	A	B	C	D	E
refusal of purchasing agent to accept bids	A	B	C	D	E
personal harassment	A	B	C	D	E
misleading information					
regarding certification	A	B	C	D	E
regarding bid requirements	A	B	C	D	E
changing bid criteria	A	B	C	D	E
withdrawal of award after after face to face meeting	A	B	C	D	E

(Continued on next page)

c. Government Contracting/Subcontracting (barriers imposed by contractors)

	N/A or Never	*Seldom*	*On Occasion*	*Frequently*	*Almost always*
late /misleading notices	A	B	C	D	E
arbitrary termination of existing contract	A	B	C	D	E
rejection of low bids	A	B	C	D	E
bid shopping/peddling to majority vendors	A	B	C	D	E
withdrawal of award after after face to face meeting	A	B	C	D	E
delayed or partial payments	A	B	C	D	E

II.6. ***If you have not made sales to TxDOT or TxDOT contractors***, whether because you decided not to bid, your bids have not been successful, or you have not been solicited, please identify the most important barrier to your participation in TxDOT procurement.

IV.7. Do you have any other comments concerning this survey? Feel free to discuss any other barriers, discriminatory or not.

IV.7a. Please indicate whether you would prefer a telephone follow-up from the research team, in regards to any aspect of the questionnaire:

_____A. yes _____B. no

Thank You for your participation in this study

Please return the survey to:

University of Texas at Austin
DBE Capacity Study Project 7-980
PO Box 7459 - 50500
Austin, Texas 78713

Telephone: (512) 471-8915
Fax: (512) 471-1063